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VÄITLUSED**  
Artiklid (CD-ROM)  
Kokkuvõtted  
Kroonika

**ESTNISCHE GESPRÄCHE ÜBER  
WIRTSCHAFTSPOLITIK**  
Beiträge (CD-ROM)  
Zusammenfassungen  
Chronik

**DISCUSSIONS ON ESTONIAN  
ECONOMIC POLICY**  
Articles (CD-ROM)  
Summaries  
Chronicle

**XVIII**

**2010**

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XVIII**

**ESTNISCHE GESPRÄCHE ÜBER WIRTSCHAFTSPOLITIK  
XVIII**

**DISCUSSIONS ON ESTONIAN ECONOMIC POLICY  
XVIII**



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## MINSKY PARADAOKS: PÄRAST KRIISI, ENNE KRIISI? (eessõna asemel)

Käesolev kogumik “*Eesti majanduspoliitilised väitlused*” ilmub nüüd juba kaheksateistkümnendat korda. Artiklite täispikkuses versioonid on toodud kogumikule lisatud CD-ROM-il ja kogumikus on esitatud artiklite lühikokkuvõtted.<sup>1</sup> Kvaliteedi tagamiseks on artikleid eelnevalt anonüümselt retsenseerinud nii Eesti kui välisriikide majandusteadlased. Kogumikke annavad koostöös välja saksa kirjastus Berliner Wissenschafts-Verlag (endine Berlin-Verlag Arno Spitz) ja eesti kirjastus Mattimar OÜ.

Kirjutiste-artiklite eesmärk on analüüsida ja hinnata Euroopa Liidus toimuvaid majanduslikke arenguid ning teha sellest majanduspoliitilisi ja vajadusel ka poliitilise korra põhielemente puudutavaid järeldusi. Üleilmse rahandus- ja majanduskriisi järgsel ajal on see muutunud eriti oluliseks.

Eestis on praegu kasutusel ühtne ja suhteliselt madal tulumaksumäär (21%), st proportsionaalne tulumaksusüsteem ning ettevõtete jaotamata kasum on tulumaksust koguni täielikult vabastatud selleks, et soodustada ettevõtete investeringuid, tugevdada riigi konkurentsivõimet rahvusvahelisel tasandil ja meelitada ligi ka välismaiseid investoreid. Eialgu olid need meetmed edukad. Eesti, nagu ka Läti ja Leedu, saavutas sisemajanduse koguprodukti puhul kohati kahekohalise kasvumäära. Ülemaailmne rahandus- ja sellest kujunenud majanduskriis tegi arengule järsu lõpu. Eesti ja kahe ülejäänud Balti riigi majandusarengut on tabanud iseseisvuse taassaavutamisele järgnenud aja rängimid tagasilöögid.<sup>2</sup> Kui enne kriisi iseloomustas Eesti avalikke eelarveid ilmne ülejääk, mistõttu riigivõlg kahanes 3,5 protsendile sisemajanduse koguproduktist, siis nüüd on areng eialgu vastupidine. Investorite usaldus on järsult vähenenud.

Üks Eesti probleemidest võib olla jäik vahetuskurs euro suhtes. Kuna Eesti püüab võimalikult kiiresti valuutaliiduga ühineda, hoitakse alal valuutakomitee süsteemi, mis on pärit veel Saksa marga aegadest ja mida Euroopa Keskpank aktsepteerib Eesti suhtes jätkuvalt ka pärast Saksamaa eurole üleminekut. Valuutakomitee süsteemi kohaselt on Eesti Pank kohustatud mistahes ajal vajaduse ilmnedes oma valuuta stabiliseerimiseks euro ja krooni turule sekkuma. Siinkohal kerkib küsimus, kas Eesti krooni devalveerimine oleks suutnud majandusarengut olulisel määral toetada. Ühest küljest oleks mõeldav, et devalveerimine oleks Eesti konkurentsivõimet rahvusvahelisel tasandil tugevdanud ja seega elavdanud lõppnõudlust väliskaubanduse arvelt. Teisalt on küsitav, kas Eesti suhteliselt väikese ekspordisõltuvuse juures oleks märkimisväärset elavnemist saavutatud. Lisaks tuleb arvestada, et üle 90 protsendi välislaenudest on võetud euro baasil, mistõttu Eesti laenude teenindamine oleks Eesti jaoks järsult kallinenud, kuivõrd reitinguagentuur Standard & Poor's (S&P) alandas Eesti krediitireitingut tasemelt A tasemele A–.

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<sup>1</sup> Autori valikul kas eesti, saksa või inglise keeles.

<sup>2</sup> Eesti sisemajanduse koguprodukt oli 2009. aasta kolmandas kvartalis eelmise aastaga võrreldes vähenenud 15,6 protsenti (Eesti Pank ja Eesti Statistikaamet).

Kui tahta kõrgema riskiastmega hüpoteeklaenu kreesist alguse saanud viimaste aastate laastavaid arenguid ohjata, tuleb eneselt küsida, mida on tehtud selleks, et takistada niisuguste kriiside kordumist. Kuna hädad said alguse finantsmajandusest, on nüüd reformijate tähelepanu keskpunktis loomulikult just see. Kõige tähtsam arusaam, milleni jõuti, seisneb selles, et kapitaliturud on kaasaegse rahvamajanduse jaoks nii suure tähtsusega, et neid ei tohi enam jätta turujõududele vabalt mängimiseks, vaid neid on vaja reeglitega ohjeldada. Vastasel korral tekib oht, et finantsturud lähevad taas nihkesse ning täieliku kokkuvarisemise ärahoidmiseks peab taas kord üldsus tohutuid maksuvahendeid kasutades kahjud enese kanda võtma. Kokkuvõttes tähendab see, et koorem jääb rahva kanda.

Kõigepealt tuleb alustada reitinguagentuuridest. Edaspidi peaksid nad olema registreeritud riikideüleises agentuuris, neile tuleks kehtestada ranged hindamiseskirjad ja nad allutada pidevale järelevalvele. Seejuures peab silmas pidama, et reitingute andmine ja nõustamine oleksid rangelt üksteisest lahutatud, et vältida huvide konflikte.

Kaugemaleulatuvad nõuded on suunatud sellele, et keelata krediidasutustel puhtspekulatiivne omavaheline kauplemine väärtpaberite ja derivaatidega, mis ei ole enam seotud reaalmajandusega. Samuti peab neile keelama osalused riskifondides ja riskikapitali investeerivates äriühingutes. Sellega tuleb saavutada kommerts- ja investeerimispankade lahutamine nii, et kommerts pangad piirduksid edaspidi jälle oma põhitegevusega<sup>3</sup>. Allesjäävate riskide katteks peab omakapital olema piisavalt suur.

Teised muudatused oleksid järgmised:

- juhatuste ja nõukogude liikmete fikseeritud palkadele tuleb kehtestada piirangud või siis tuleb lubada neid ettevõtte maksustamisel ainult kuni teatud maksimumsumma ulatuses kuludena aktsepteerida;
- direktorite ja teiste juhtivtöötajate preemiade suurus tuleb kindlaks määrata pikema aja peale (vähemalt kolmeks aastaks) ja need ei võiks ületada näiteks 30 protsenti fikseeritud põhipalgast;
- juhatuste nõukogude liikmed peavad edaspidi oma ettevõtete vigade eest vastutama (ilmajäämine preemiast ja vajadusel ka fikseeritud põhipalgast);
- kui juhid saavad osa palgast osanikuõigustena oma ettevõtetes, tohivad nad alles pärast teatud mitte liiga lühikese aja möödumist neid edasi müüa, et juhid lähtuksid oma otsustes mitte lühiajalisest edust, vaid jätkusuutlikest eesmärkidest;
- elavaid vaidlusi tekitab nõue piirata vähemalt krediidasutuste suurus sedavõrd, et nad ei ohustaks enam terveid rahvamajandusi ega saaks oluliste süsteemi-elementidena riike santazeerida, nii et lõpuks peab nende juhtimisvigade eest vastutama maksumaksja.<sup>4</sup>

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<sup>3</sup> Nimelt hoiustamise ja laenamisega, mis on sisuliselt ostujõu vahendamine kapitaliinvestorite ja laenuvajajate vahel.

<sup>4</sup> Muuhulgas: Eesti majanduspoliitilised väitlused, 2009. a väljaanne, Eessõna, lk 15 jj.

Kas kõigi nende reformiettepanekute realiseerimine aitab tulevikus vältida sarnaseid kriise, mis tabasid rahvamajandusi möödunud aastatel, on küsitav. Hyman Minsky viitas juba möödunud sajandi 70. aastatel nähtusele, mis nüüdseks on taasavastatud Minsky paradoksi<sup>5</sup> nimetuse all ning mille õigsust kinnitavad möödunud aastate sündmused. Minsky paradoks ütleb, et turumajandustes, kus ettevõtjate, pankade ja majapidamiste<sup>6</sup> otsustusprotsessid on läbivalt detsentraliseeritud, muutuvad finantssüsteemid majanduse ekspansiivse arengu faasides järjest ebastabiilsemaks. Kurja juureks on erasektori võlakoormuse kasv majanduse ülekuumenemise perioodidel. Õitsengu algfaasis käituvad turuosalisel laenulepingute sõlmimisel esialgu veel ettevaatlikult, jälgides hoolikalt, et rahastatavad objektid oleksid piisavalt tulusad ning jooksvatest tuludest piisaks laenu probleemideta teenindamiseks. Kui majandus jätkab kuumenemist ja tulu inflatsiooniliselt suureneb, muututakse järjest kergemeelsemaks. Edu kasvatab julgust võtta suuremaid riske. Turuosalisel alahindavad riske, hinnates samas üle kasumi-võimalusi. Spekleeritakse järjest hasartsemalt ja lõpuks omandab see ohtlikud mõõtmed. Varsti piisab juba sellest, kui rahavood katavad veel ainult intressimakseid; lõpuks võib laene ju nagu näib, igal ajal probleemilt pikendada või ümber struktureerida. Kui niisugune areng võtab laialdased mõõtmed, suudetakse intresse finantseerida veel ainult uute laenudega. Siis loodetakse sellele, et kapitaliturud jätkavad finantseerimisvajaduse rahastamist, kuna tagatiseks oleva vara väärtus endiselt kasvab. Kui see aga äkitselt enam nii ei ole, variseb kõik kokku. Usalduse kadumine majanduses levib, pakkumine kapitaliturgudel väheneb järsult ja nii käivitub allakäiguspiraal. Ebastabiilne finantseerimissüsteem tõmbab reaalmajanduse kuristikku kaasa.

Täpselt selline oli USA kinnisvaraturul aastal 2007 alanud finantskriisi ja seejärel 2008. aasta sügisel pärast investeerimispanka Lehman Brothers kokkuvarisemist üle kogu maailma levinud majanduskriis. Usklassitsismist nakatunud usk toimivatesse vabadesse turgudesse, stabiilsesse tasakaalu ja eksimatult ratsionaalselt toimivatesse turuosalistesse osutus petlikuks. Kuna ka edaspidi ei ole võimalik välistada iha aina suurema kasumi ja võimu järele ning sellest tulenevat ebastabiilsust, on oluline, et loodaks tugevad avalikud institutsioonid, mis on suutelised jälgima, kas majandussektor järgib reformi nõudeid, ja vajaduse korral stabiliseeruvat sekkuma. Seejuures on võtmeroll keskpankadel, kes kontrollivad järjest keerukamaks muutuvaid finantssüsteeme ja juhivad uute finantsstruktuuride arenguid. Üleilmastumise aegadel on seejuures vältimatult vajalik rahvusvaheline koordineeritus, et finantsturgudel osalejatel ei õnnestu üksikute riikide riiklike järelevalveasutuste eeskirjadest kõrvale hiilida ja järelevalveasutusi üksteise vastu

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<sup>5</sup> "Stabiilsus on ebastabiilne!" Vt lisaks: Minsky, P. Hyman, John Maynard Keynes – Finanzierungprozesse, Investitionen und Instabilität des Kapitalismus, (1975) 2008 (Metropolis); samas, Die Hypothese der finanziellen Instabilität, Challenge, White Plains, N. Y. 1977, lk 20 jj; sama, The Financial Instability: Handbook of Radical Political Economy, Philip Arestis & Malcolm Sawyer (Hrsg.), 1993; sama, Stabilizing An Unstable Economy, 1986 (Yale University Press), 2008 (Quebecor World); sama, Can "It" Happen Again? Essays on Instability and Finance, New York 1982.

<sup>6</sup> Mistõttu on majandusarengu ebastabiilsus praktiliselt vältimatu.

välja mängida. Oluline on, et kogu maailmas kehtestataks ühtsed standardid, millega saaks kapitalituru ekstsesse takistada ilma laenusüsteemi töövõimet kahjustamata.

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## **MINSKY-PARADOXON: NACH DER KRISE, VOR DER KRISE? (statt Vorwort)**

Der vorliegende Sammelband „*Estnische Gespräche über Wirtschaftspolitik*“ erscheint nunmehr in der 18. Ausgabe. In originaler Länge sind die einzelnen Beiträge auf der beigefügten CD-Rom und in Kurzfassung im vorliegenden Sammelband dokumentiert.<sup>1</sup> Zur Qualitätssicherung wurden sie zuvor anonym rezensiert, und zwar von Wirtschaftswissenschaftlern aus dem Aus- und Inland. Die Beitragsbände als selbstständige Sammlungen wissenschaftlicher Artikel erscheinen im Berliner Wissenschafts-Verlag (früher Berlin-Verlag Arno Spitz) in Kooperation mit dem estnischen Verlag Mattimar OÜ.

Die Dokumentationen haben das Ziel, wirtschaftliche Entwicklungen in der Europäischen Union zu analysieren und daraus wirtschaftspolitische und – soweit notwendig – auch ordnungspolitische Schlussfolgerungen zu ziehen. Nach der weltweiten Finanz- und Wirtschaftskrise erlangt dieses Anliegen eine besondere Bedeutung.

Nach dem Ende der sowjetischen Okkupation hat Estland einen niedrigen Pauschalsteuersatz (Flat-Tax) eingeführt und die Steuern auf einbehaltene Gewinne sogar gänzlich abgeschafft, um seine internationale Wettbewerbsfähigkeit zu stärken und Investitionen aus dem Ausland zu stimulieren. Diese Maßnahmen waren zunächst erfolgreich. Estland erzielte – wie Lettland und Litauen auch – zum Teil zweistelligen Steigerungsraten seines Bruttoinlandprodukts. Mit der weltweiten Finanz- und der sich daraus entwickelnden Wirtschaftskrise fand diese Entwicklung dann ein jähes Ende. Estland und die anderen zwei baltischen Staaten erleben die schwersten konjunkturellen Rückschläge seit der Wiedererlangung ihrer Unabhängigkeiten.<sup>2</sup> Während zuvor die öffentlichen Haushalte in Estland noch deutliche Überschüsse erzielten, welche den Schuldenbestand auf 3,5 Prozent des Bruttoinlandproduktes reduzierten, hat sich nunmehr diese Entwicklung – vorerst – umgekehrt. Das Vertrauen der Investoren ist dramatisch gesunken

Ein Problem für Estland könnte dessen fester Wechselkurs zum Euro sein. Da Estland bestrebt ist, so schnell wie möglich der Währungsunion beizutreten, hat es die noch aus der DM-Zeit herrührende, auch nach der Euro-Einführung ihr von der Europäischen Zentralbank weiterhin zugestandene Currency-Board-Regelung beibehalten. Danach ist die Eesti Pank verpflichtet, zur Stabilisierung ihrer Währung jederzeit – wenn notwendig – am Euro-Krone-Devisenmarkt zu intervenieren. Hier stellt sich die Frage, ob eine Abwertung der estnischen Krone die Konjunktur hätte spürbar stützen können. Einerseits wäre es denkbar, dass eine Abwertung die internationale Wettbewerbsfähigkeit Estlands gestärkt und damit die Endnachfrage über den Außenhandel belebt hätte; andererseits ist fraglich, ob damit bei der relativ geringen Exportabhängigkeit Estlands spürbare expansive Effekte erzielt worden

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<sup>1</sup> Je nach Wahl des Verfassers in deutscher, englischer oder estnischer Sprache.

<sup>2</sup> Das Bruttoinlandprodukt war in Estland im dritten Quartal 2009 im Vorjahresvergleich um 15,6 Prozent gesunken (Eesti Pank und Eesti Statistikaamet)

wären. Außerdem ist zu berücksichtigen, dass über 90 Prozent der Auslandskredite auf Euro-Basis fakturiert werden, so dass sich damit der Schuldendienst für Estland drastisch verteuert hätte, zumal die Ratingagentur Standard & Poor's (S&P) die Kreditwürdigkeit Estlands von A auf A- herabgestuft hat.

Wenn die verheerenden Entwicklungen der letzten Jahre, die 2007 durch die Subprime-Krise ausgelöst worden sind, überwunden sein sollten, wird man sich fragen müssen, was getan worden ist, um eine Wiederholung solcher Krisen zu verhindern. Nachdem es die Finanzwirtschaft gewesen ist, welche die Misere ausgelöst hat, steht diese nun verständlicherweise im Blickpunkt der Reformer. Die wichtigste Erkenntnis ist: Die Kapitalmärkte haben in modernen Volkswirtschaften eine so große Bedeutung, dass sie nicht mehr dem freien Spiel der Kräfte überlassen werden dürfen, sondern ordnungspolitisch zu zügeln sind. Anderenfalls besteht die Gefahr, dass es erneut zu Verwerfungen auf den Finanzmärkten kommt und dann zur Abwendung eines völligen Zusammenbruchs die Verluste wieder durch Einsatz gewaltiger Steuermittel sozialisiert werden, wodurch letztendlich die breite Bevölkerung die Lasten zu tragen hat.

– Zunächst muss bei den Ratingagenturen angefangen werden. Diese sind zukünftig bei einer länderübergreifenden Agentur zu registrieren und strengen Bewertungsrichtlinien sowie einer permanenten Aufsicht zu unterwerfen. Dabei ist darauf zu achten, dass Rating und Beratung strikt voneinander getrennt werden, damit es nicht zu Interessenkollisionen kommt.

– Jene Finanzinstitute, die verbrieft Forderungen verkaufen, müssen verpflichtet werden, einen Teil der emittierten Wertpapiere selbst zu behalten<sup>3</sup>, damit sie das Risiko dieser Papiere mit tragen.

– Darlehensnehmer müssen gegenüber Kreditinstituten in besonderer Weise geschützt werden, indem Abtretungen von Darlehensforderungen sowie Übertragungen jeglicher Art an Unternehmungen ohne Banklizenz nur mit Genehmigung der jeweiligen Bankkunden zulässig sind.

– Weiterführende Forderungen zielen darauf ab, Kreditinstituten den rein spekulativen Eigenhandel mit Wertpapieren und Derivaten zu verbieten, bei denen kein Bezug zur Realwirtschaft mehr besteht. Auch sind ihnen Beteiligungen an Hedge-Fonds und Private-Equity-Gesellschaften zu untersagen. Damit soll eine Trennung von Geschäfts- und Investmentbanken erreicht werden, so dass sich die Aktivitäten der Geschäftsbanken zukünftig wieder auf ihre Kerngeschäfte, die so genannten Kundengeschäfte<sup>4</sup>, beschränken. Verbleibende Risiken müssen ausreichend mit Eigenkapital unterlegt werden.

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<sup>3</sup> Im Gespräch sind Selbstbehalte in Größenordnungen von fünf bis zehn Prozent; der Arbeitskreis 'Europa' der Friedrich-Ebert-Stiftung fordert auf der Grundlage einer internationalen Regelung sogar einen Risikoverbleib von mindestens 20 Prozent.

<sup>4</sup> Nämlich die Einlagen- und Kreditgeschäfte, welche die Vermittlung von Kaufkraft zwischen Kapitalanlegern und Kreditsuchenden zum Gegenstand haben: „Der Bankier soll Kreditrisiken bewerten und nicht Spekulant sein.“ (Frankreichs Präsident Nicolas Sarkozy auf dem Wirtschaftsforum in Davos im Januar 2010)

- Die Fixgehälter der Mitglieder von Vorständen und Aufsichtsräten müssen begrenzt oder dürfen nur bis zu bestimmten Höchstbeträgen als steuerrelevante Kosten anerkannt werden.
- Die Boni der Manager und sonstigen Führungskräfte sind auf lange Zeiträume auszurichten (mindestens drei Jahre) und auf 30 Prozent der Fixgehälter zu begrenzen.
- Vorstandsmitglieder und Aufsichtsräte müssen zukünftig für Fehler, die ihre Unternehmungen belasten, haften (Wegfall der Boni und gegebenenfalls der Fixgehälter).
- Soweit Führungskräfte Teile ihrer Gehälter in Form von Anteilsrechten an ihren Unternehmungen erhalten, dürfen sie diese erst nach Ablauf bestimmter, nicht zu kurz bemessener Fristen wieder veräußern, damit sie ihre Entscheidungen nicht an kurzfristigen Erfolgen, sondern an nachhaltigen Zielen ausrichten.
- Heftig umstritten ist die Forderung, zumindest Kreditinstitute in ihrer Größe so weit zu beschränken, dass sie nicht mehr ganze Volkswirtschaften gefährden und als systemrelevante Institutionen gewissermaßen erpressen können, so dass letztendlich der Steuerzahler für deren Missmanagement haften muss.

Ob durch die Verwirklichung all dieser Reformvorschläge<sup>5</sup> zukünftig ähnliche Krisen, wie sie die Volkswirtschaften in den zurückliegenden Jahren erfahren haben, vermieden werden können, ist fraglich. Hyman Minsky hatte bereits in den 70er Jahren des vorigen Jahrhunderts auf ein Phänomen hingewiesen, das inzwischen als 'Minsky-Paradoxon'<sup>6</sup> wiederentdeckt und durch die Ereignisse der zurückliegenden Jahre bestätigt worden ist. Es besagt, dass in Marktwirtschaften mit durchgängig dezentralen Entscheidungen der Unternehmungen, Banken und Haushaltungen<sup>7</sup> die Finanzsysteme in expansiven Konjunkturphasen zunehmend instabil werden. Der Kern des Übels liegt in der zunehmenden Verschuldung der Privatwirtschaft in Zeiten der konjunkturellen Überhitzung. In der Anfangsphase der Prosperität verhalten sich die Wirtschaftssubjekte bei Abschlüssen von Kreditverträgen zunächst noch vorsichtig, indem sie vorsorglich darauf achten, dass die zu finanzierenden Objekte ausreichend rentabel sind und der Schuldendienst aus den laufenden Einnahmen problemlos bedient werden kann. Mit fortschreitender Überhitzung der konjunkturellen Entwicklung und inflationär aufgeblähten Erträgen werden sie immer leichtsinniger. Erfolge führen zu größeren Wagnissen. Die Akteure unterschätzen die Risiken und überschätzen die Gewinnaussichten. Die Lust am Spekulieren nimmt zu und schließlich gefährliche Ausmaße an. Bald genügt es ihnen, wenn die Cashflows nur noch die Zinszahlungen decken; schließlich kann

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<sup>5</sup>Vgl. im Übrigen: Estnische Gespräche über Wirtschaftspolitik, Jahrgang 2009, Vorwort, S. 15 f.

<sup>6</sup> „Die Stabilität ist instabil!“ Siehe hierzu: Minsky, P. Hyman, John Maynard Keynes – Finanzierungsprozesse, Investitionen und Instabilität des Kapitalismus, (1975) 2008 (Metropolis); derselbe, Die Hypothese der finanziellen Instabilität, Challenge, White Plains, N. Y. 1977, S. 20ff.; derselbe, The Financial Instability, in: Handbook of Radical Political Economy, Philip Arestis & Malcolm Sawyer (Hrsg.), 1993; derselbe, Stabilizing An Unstable Economy, 1986 (Yale University Press), 2008 (Quebecor World); derselbe, Can "It" Happen Again? Essays on Instability and Finance, New York 1982.

<sup>7</sup> wodurch Konjunkturschwankungen praktisch unvermeidlich sind.

man ja – so scheint es – jederzeit problemlos prolongieren oder umschulden. Nimmt diese Entwicklung exzessive Ausmaße an, können die Zinsen nur noch durch neue Kredite finanziert werden. Dann hofft man darauf, dass die Kapitalmärkte den Finanzierungsbedarf weiterhin befriedigen, weil das als Sicherheit dienende Vermögen –wie bisher – an Wert zunimmt. Ist das aber plötzlich nicht mehr der Fall, bricht alles zusammen. Der Vertrauensschwund in der Wirtschaft greift um sich, das Angebot auf den Kapitalmärkten sinkt drastisch, wodurch eine Abwärtsspirale in Gang gesetzt wird. Das instabile Finanzierungssystem reißt die reale Wirtschaft mit in den Abgrund.

Genau das war die Situation der beginnenden Finanzkrise auf dem US-Immobilienmarkt im Jahre 2007 und der sich dann im Herbst 2008 nach dem Zusammenbruch der Investmentbank Lehman Brothers weltweit ausdehnenden Wirtschaftskrise. Der neoklassisch infizierte Glaube an funktionierende freie Märkte, stabile Gleichgewichte und unfehlbar rational handelnde Wirtschaftssubjekte hat sich als trügerisch erwiesen. Da auch zukünftig die Gier nach immer höheren Gewinnen und Macht und die daraus resultierende Instabilität nicht auszuschalten sein wird, ist es wichtig, dass starke öffentliche Institutionen geschaffen werden, die imstande sind, die Wirtschaft auf Einhaltung der Reform-Vorgaben zu überwachen und gegebenenfalls stabilisierend einzugreifen. Dabei kommt den Zentralbanken eine Schlüsselrolle zu, indem sie die immer komplexer werdenden Finanzsysteme kontrollieren und die Entwicklungen neuer Finanzstrukturen steuern. In Zeiten der Globalisierung ist dabei eine internationale Koordination unabdingbar, damit die Finanzmarktakteure nicht den Zuständigkeitsbereichen der einzelnen nationalen Aufsichtsbehörden ausweichen und diese gegeneinander ausspielen können. Wichtig ist, dass weltweit einheitliche Standards festgelegt werden, wodurch Kapitalmarktexzesse verhindert werden können, ohne die Funktionstüchtigkeit der Kreditwirtschaft zu beeinträchtigen.

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## **MINSKY'S PARADOX: AFTER CRISIS, BEFORE CRISIS? (as a preface)**

This publication is already the 18th collection "*Eesti majanduspoliitilised väitlused*" (Discussions on Estonian Economic Policy). The full versions of the papers have been published on the CD-ROM enclosed with the collection, and the collection contains the abstracts of the papers.<sup>1</sup> To ensure the quality, the papers have first been anonymously peer-reviewed by Estonian and foreign economists. The collections are published in mutual cooperation by the publishing house Berliner Wissenschafts-Verlag (former Berlin-Verlag Arno Spitz) and the Estonian publisher Mattimar OÜ.

The aim of the papers is to analyse and assess the economic developments going on in the European Union and to draw conclusions from them from the aspects of economic policy and also concerning the main elements of the political order, if appropriate. This has become particularly important in the period after the global financial and economic crisis.

The income tax rate currently effective in Estonia is uniform and relatively low (21%), i.e. Estonia has a proportional income tax system and corporate retained earnings are even fully tax-free to favour corporate investments, improve the international competitiveness of the state and attract also foreign investors. These measures were successful at first. Estonia, similar to Latvia and Lithuania, achieved a two-digit GDP growth rate in some years. The global financial crisis and the resulting economic crisis put an abrupt end to their development. The economic development of Estonia and the two other Baltic states has had its most serious setbacks during the period after regaining their independence.<sup>2</sup> While before the crisis the budgets of the Estonian public sector were characterised by a clear surplus, which reduced the public debt to 3.5 per cent of the GDP, the current development has been in the opposite direction. The confidence of investors has dramatically decreased.

One of the problems of Estonia may consist in the fixed exchange rate against euro. As Estonia is making efforts to join the monetary union as soon as possible, it is keeping up the currency board system which comes from the times of the German mark and which the European Central Bank continues to accept with respect to Estonia also after Germany has adopted euro. According to the currency board system, the Bank of Estonia is obliged to intervene in the market of euro and kroon at any time for the stabilisation of its own currency, if appropriate. This raises the question of whether devaluation of the Estonian kroon would have been able to significantly support the economic development. On the one hand, devaluation may have improved the international competitiveness of Estonia and thus enlivened consumer demand at the expense of foreign trade. On the other hand it is questionable whether considerable enlivening would have been achieved due to the

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<sup>1</sup> According to the author's choice either in Estonian, German or English.

<sup>2</sup> The GDP of Estonia had decreased by 15.6 percent in the third quarter of 2009 compared to the previous year (Bank of Estonia and Statistics Estonia).

relatively low dependence of Estonia on exports. Besides, we have to take into account the fact that more than 90 per cent of foreign loans have been obtained on the basis of euro, therefore servicing of loans of Estonia would have become much more expensive as the credit rating agency Standard & Poor's (S&P) lowered the credit rating of Estonia from level A to A-.

If we want to curb the devastating developments of the recent years which started with the crisis caused by high risk mortgages, we have to ask what has been done to prevent the recurrence of such crises. As the trouble started from financial affairs, the reformers are obviously focusing on it now. The most important understanding reached was that money markets are so important for national economy these days that they can no longer be left at the mercy of market forces but should be regulated. Otherwise financial markets may shift again and the general public will have to bear the losses again with huge resources in order to prevent a full collapse. This means that people eventually have to bear the burden.

The regulation should start with the credit rating agencies. In the future, they should be registered by a supranational agency and subjected to strict rules of evaluation and constant supervision. It is important to ensure that granting ratings and counselling would be strictly separated to avoid conflicts of interests.

More extensive requirements would be directed to prohibition of purely speculative mutual trade in securities and derivatives between credit institutions as this is no longer related to real economy. Also their participation in hedge funds and in companies which invest in venture capital should be prohibited. For this purpose, commercial banks and investment banks should be separated to enable commercial banks to engage in their main activities again<sup>3</sup>. Their equity has to be sizeable enough to cover the remaining risks.

The other changes would be the following:

- the fixed salaries of management and supervisory board members should be restricted or their recording as expenses for corporate taxation allowed only to the extent of a certain maximum amount;
- the amounts of bonuses of directors and other executives should be fixed for longer periods (three years as a minimum) and they should not exceed e.g. 30 per cent of their fixed basic salaries;
- members of management and supervisory boards should be responsible for the mistakes of their companies (lose their bonuses or even fixed basic salaries, if appropriate);
- if executives get a part of their salary as participation rights in their company, they would be able to sell them only after a certain period, which should not be too short, to make executives adopt decisions for not just short-term success but proceeding from sustainable goals;

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<sup>3</sup> Namely in depositing and lending which is essentially mediation between the purchase powers of capital investors and borrowers.

- the requirement to restrict at least the size of credit institutions to prevent them from setting whole national economies at risk and ripping off countries as important elements of their systems so that the tax-payer eventually has to pay for their management mistakes, has given rise to heated disputes.<sup>4</sup>

It is questionable whether implementation of all these proposals for reforms would help to prevent in the future crises similar to those which hit national economies in the recent years. Already in the 70s of the last century, Hyman Minsky referred to the phenomenon which has now been rediscovered as the Minsky's paradox<sup>5</sup> and is proved correct by the developments of the recent years. According to Minsky's paradox, in market economies where decision-making processes of entrepreneurs, banks and households<sup>6</sup> are fully decentralised, the financial systems will become increasingly destabilized with each phase of expansive economic development. The root of all evil is the increase in the debt burden of the private sector during periods of overheated economy. In the initial phase of the boom, market participants at first act carefully, ensuring that the objects financed are profitable enough and that current revenues are sufficient for servicing loans without problems. When the economy becomes more heated and the revenues are increased by inflation, people become more thoughtless. Success makes them bolder to take bigger risks. Market participants underestimate risks, overestimating their profit opportunities at the same time. Gambling becomes increasingly reckless and finally reaches dangerous magnitudes. Soon it is enough to have cash flows cover just the interest payments; it seems that loans can be extended and restructured without problems, after all. If such a development reaches extensive dimensions, interest payments can only be financed with new loans. After that they rely on money markets to finance their financing needs, as the value of the assets used as a security is still growing. But if this is suddenly not the case any more, everything will fall apart. Loss of trust becomes wide-spread in the economy, supply in money markets dramatically decreases and the downward spiral begins. The unstable financing system pulls also the real economy to the abyss with it.

This is exactly what the financial crisis which started in the U.S. real estate market in 2007 and spread all over the world after the collapse of the Lehman Brothers Investment Bank in autumn 2008 was like. The neoclassicist belief in the functioning of free markets, a stable balance and unmistakably rational behaviour of market participants proved deceptive. As the greed for increasingly higher profits and power and the resulting instability cannot be excluded in the future either, it is

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<sup>4</sup> Among others: Eesti majanduspoliitilised väitlused, issue of 2009, preface, pp. 15 ff.

<sup>5</sup> "Stability is destabilizing!" See in addition: Minsky, P. Hyman, John Maynard Keynes – Finanzierungsprozesse, Investitionen und Instabilität des Kapitalismus, (1975) 2008 (Metropolis); idem, Die Hypothese der finanziellen Instabilität, Challenge, White Plains, N. Y. 1977, lk 20 jj; idem, The Financial Instability: Handbook of Radical Political Economy, Philip Arestis & Malcolm Sawyer (Hrsg.), 1993; idem, Stabilizing An Unstable Economy, 1986 (Yale University Press), 2008 (Quebecor World); idem, Can "It" Happen Again? Essays on Instability and Finance, New York 1982.

<sup>6</sup> Therefore instability of economic development is actually unavoidable.

important to create solid public institutions who would be able to monitor the fulfilment of reform requirements by the economic sector and also perform stabilising interventions, if appropriate. Central banks have a key role here, inspecting the increasingly complicated financial systems and managing the development of new financial structures. At the time of globalisation also international coordination is unavoidable to prevent financial market participants from avoiding the regulations of national supervisory institutions and taking advantage of a supervisory agency of one country at the expense of another. It is important to establish common global standards which would make it possible to prevent excesses in money markets without impairing the functioning of the lending system.

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# POSSIBILITIES OF ECONOMIC POLICY FOR REGULATION OF SECTOR-SPECIFIC MARKETS IN SMALL COUNTRY: THE CASE OF BALTIC COUNTRIES

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## Abstract

In the article is analyzed the regulation of sector-specific industries from institutional aspects of regulation and competition policy. There is researched answer to the question what type of institutional arrangement is suitable for regulating network industries in the Baltic countries. Under the observation are three different organizational standard models: single sector-specific regulators and competition board; integrated multi-sector regulatory institution and separate competition board; and unitary competition supervisory and regulatory institution.

**Keywords:** economics of regulation, government policy and regulation, regulated industries, regulatory institutions

**JEL Classification:** L51, L10, L98, K23

## Introduction

When governments regulate liberalized markets they usually do so by assigning regulatory tasks to certain institutions. These authorities may be within existing ministries or departments or they may be independent agencies. One of the concerns is why should regulatory authority be a separate institution and why should that authority be independent.

Current article analyzes the regulation of sector-specific industries (energy, gas, telecommunication, postal communication and railway sector) from institutional aspects of regulation and competition policy in Baltic countries taking into account particular developments in some other transition countries and practices, which seem to be relevant for further regulating developments in the Baltic countries.

The goal of this article is to explain, what type of institutional arrangement is suitable for regulating network industries in the Baltic countries. Under the observation are institutional and organizational aspects of regulation and competition in aforementioned sectors. For that purpose there are following research questions:

- Explain theoretical background for regulation in sector-specific spheres;

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- Make a comparative analysis of current institutional regulatory arrangements in Baltic countries considering the best practices from developed countries (for example, Germany and the Netherlands);
- Give recommendations for regulating sector-specific industries in terms of organizational arrangements in the Baltic countries.

According to these research questions the article is divided into four parts. In the first part connections between sectoral regulation and competition policy in sector-specific industries are under the observation from theoretical aspects. The second part continues with considering possibilities for regulation in network industries. Three different standard models are analyzed: single sector-specific regulators and competition board; integrated multi-sector regulatory institution and separate competition board; and unitary competition supervisory and regulatory institution. In the third part practices of regulatory institutions in transition countries are analyzed and then the fourth part focuses on the developments of regulatory and competition policy supervisory institutions for regulation of sector-specific industries in the Baltic countries.

### **1. Connections between sectoral regulation and competition policy in regulating sector-specific industries**

The connection between competition policy and regulation is not always clear enough and is a complex problem. Some kind of rivalry between those two shows up in certain phases during the deregulation of an industry or the transformation of former state monopolies into competitive markets. As it has been pointed out, in practice, the conflict between competition policy and regulation often arises as one between competition authorities and sector-specific regulators (Kirchner 2004).

From institutional economics approach competition policy is seen as application and enforcement of competition law by competition authorities and courts. Regulation in this context is as sector-specific regulation enforced by regulatory authorities and law courts. Competition policy is public policy instrument to prevent constraints on competition. The main goal of competition policy is to keep markets free from restrictive practices in order to safeguard freedom of choice against business practices which have negative welfare effects. Some authors (Michael 2006) see that competition policy has larger list of objectives, including consumer protection aim as well, but others concentrate on efficiency goal (Posner 1976). In case of regulation, generally, main goal is efficiency.

Competition policy itself cannot create competition. It can only prevent or limit the effects of certain activities restricting freedom of competition. Of course, there are limits to the effectiveness of competition policy, and there are markets in which competition policy will lead to satisfactory results and other markets which need regulation in order to attain the efficiency goal.

Competition authorities and sector regulators have different core competencies. These core competencies influence the types of tasks best accomplished by each. Sectoral regulation is frequently overseen by sector regulators. Sector regulators typically have extensive, ongoing knowledge of the technical aspects of the products and services that are regulated. Sector regulators are more likely better suited to technical regulation than competition authorities. Competition authorities have necessary skills for delineating relevant markets, assessing likelihood of harm to competition, assessing entry conditions and assessing significant market power (The relationship between... 2005).

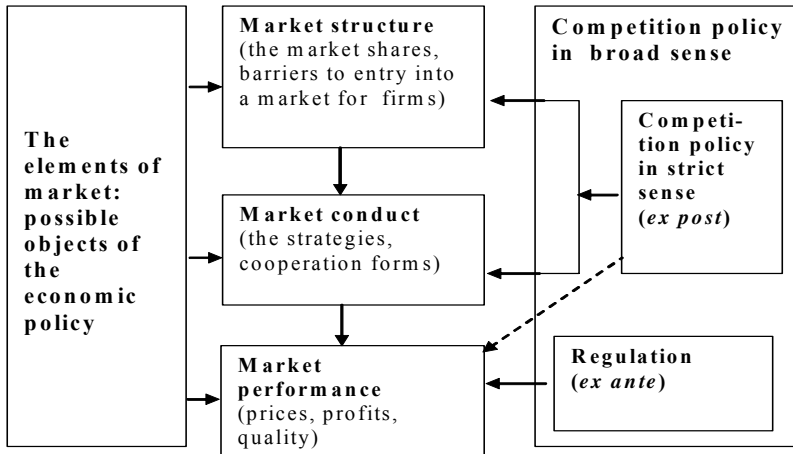
Nevertheless, the primary government tasks which have to be completed in regulated sectors are as follows (The relationship between... 2005):

- *Technical regulation*: setting and monitoring standards, managing licenses, implementing sanctions to assure compatibility and to address privacy, safety, reliability, financial stability and environmental protection concerns;
- *Wholesale regulation*: ensuring non-discriminatory access to necessary core facilities, especially network infrastructures;
- *Retail regulation*: measures to mitigate monopoly pricing or behavior at the retail level;
- *Public service regulation*: measures to ensure that all consumers have access to goods that are deemed of special social value, as with universal service obligations;
- *Resolution of disputes*: quasi-judicial powers may result in faster resolution of disputes than could be provided by a non-specialized court;
- *Competition oversight*: controlling anticompetitive conduct and mergers.

When explaining connections between competition policy and regulation in the sector-specific spheres, it is useful to think in the framework of structure-behavior-performance paradigm. This approach helps to show competition policy by the object of economic policy (see Figure 1).

Competition policy in strict sense includes *ex post* supervisory control over market structure and enterprises behavior in the market. Competition policy in broad sense includes also *ex ante* activities in regulating market performance. Described relations and the primary government tasks in the regulated sectors give the base for justification to merger *ex ante* and *ex post* supervisory functions into one unified institution.

Economic regulation is usually required because free markets fail to deliver desirable outcomes. Mainly, monopoly abuse in retail and wholesale markets may call for the level of prices to be regulated and discrimination across customers may lead to calls for regulation to affect the structure of prices. In the first case the regulation is undertaken to achieve efficiency and in the latter case regulation is motivated by fairness or equity considerations. In the Table 1 is explained how efficiency and equity factors impact on regulation in sector-specific industries.



**Figure 1.** Relations between competition policy and regulation in the paradigm of structure-conduct-performance. (Compiled by author)

Historically, regulators have often been closely related to ministries that manage or managed incumbent firms. Perhaps as result, regulatory agencies are sometimes perceived as taking actions that appear to serve the interests of the firms being regulated. According to the theory (Bernstein 1955), the state agencies, which control monopolies tend to represent more the interests of enterprises compare to consumers interests. This hazard is particularly major concerning in state monopolies by nowadays' concept. It is because here the enterprise leaders have more connections with politicians than in case of private enterprises. Greater independence from both political power and the regulated sector are crucial for avoiding these perceptions. In many countries, for example OECD countries, regulatory institutions have increased their levels of independence (The relationship between... 2005).

From best practices of developed countries is well-known, that the structure and process of infrastructure regulation determine how effectively it supports reforms and promotes efficiency and social objectives.



**Table 1.** Efficiency and equity grounds for regulation in sector-specific industries

<b>Industry Characteristics</b>	<b>Equity Arguments</b>	<b>Efficiency Arguments</b>
<b>Electricity:</b> non-storable. Some economies of scale. Demand slowly rising. Innovations in service provision, less in network.	Security of supply Universal service Geographic uniformity	Natural monopoly in transportation: transmission and distribution. Third party access to customers. Incumbency dominance.
<b>Gas:</b> Storable. Demand rising as an input to electric generation. Innovations minimal.	Security of supply Universal service Geographic uniformity	Natural monopoly in transportation. Third party access to customers. Incumbency dominance.
<b>Postal Services:</b> Demand rising, innovations affecting sorting and tracking processes.	Universal service Geographic uniformity	Natural monopoly local delivery network. Incumbency dominance.
<b>Telecommunications:</b> Demand growing significantly, due especially to internet. Innovations significantly affecting industry. Convergence across fixed and mobile, and horizontally with IT and media sector.	Universal service Geographic uniformity Access to information society	Natural monopoly in some elements of the local loop (depends on demand and population density) and scarce resources (eg. Radio spectrum). Incumbency dominance.

Source: Coen *et al.* 1999.

For effective regulation of privatized utilities have crucial impact and importance those institutional requirements as coherence, independence, accountability, transparency, predictability and capacity. Mentioned requirements have important role for effective functioning of state regulatory authorities (Berg 2009) and these requirements are probably better fulfilled in case of one complete supervisory institution.

## **2. Possible models for state regulation in sector-specific industries**

Wherever regulatory authorities are located in state hierarchy and what kind of organizational structure they have, their main responsibilities are over the following items for which they must both monitor current practice and intervene if necessary (*The role of the regulatory authorities* 2004):

- management and allocation of interconnection capacity;
- mechanisms to deal with congested capacity within the national system;
- the time taken by transmission and distribution undertakings to make connections and repairs;

- publication of appropriate information;
- the effective unbundling of accounts to avoid cross subsidies and the unbundling compliance program;
- connecting new producers;
- the access conditions to storage, linepack and to other ancillary services;
- overall compliance of transmission and distribution system operators with the Directives;
- the level of transparency and competition.

In addition to the core tasks there are number of issues that Member States may also assign to the regulatory authority. These are following:

- issuing authorizations and licenses
- monitoring of security of supply;
- organization, monitoring and control of the tendering procedure for generation;
- deciding on derogations in relation to take-or-pay commitments for gas;
- dispute-settlement arrangements for access to upstream gas pipelines.

The European Union Member States might also give additional tasks to the regulator not specially required in the Directive, such as ensuring consumer protection, monitoring levels of service or adopting measures to protect vulnerable customers (*Ibid.*).

Still state regulation in sector-specific spheres is organized differently in different countries and may also include different operation fields of the regulatory authorities (see Table 2) in the regulation process.

**Table 2.** Operation fields of the regulatory authorities in the sector-specific spheres in some European countries

Country	Telecommuni- -cation (fixed network and mobile)	Post	Energy	Railway	Radio/TV		
					Frequency	Competition	Contents
Finland	x	x			x	x	
France	x	x					
Germany	x	x	x	x			
Hungary	x	x					
Italy	x				x	x	x
Netherlands	x	x			x		
Spain	x						
Sweden	x	x					
United Kingdom	x				x	x	x
Switzerland	x				x	x	x

Source: Schedl *et al.* 2007.

In comparative analysis of national regulatory institutions in case of Great Britain, France and Germany has been concluded, that after a relatively similar starting point of industry-led regulatory institutions in the mid-1960s, these countries introduced different reforms at the sectoral level to deal with pressures on network supply in the period until the mid-1980s. Those reforms increasingly matched those expected at the macro or national level by the literature on varieties or models of capitalism (Thatcher 2007).

Britain had greatly enhanced the role of competition and private markets to coordinate the different actors, as expected in a liberal market economy model. France had taken the opposite direction, reinforcing the direct role of the state. Germany had largely retained the industry model of coordination, remaining closest to the traditional European model, due to the importance of consensus and the lack of a strong central group of policy makers to take the lead in creating new projects. From the late 1980s, the EC developed a wide-ranging regulatory framework that conflicted with, and often outlawed, regulatory institutions in France and Germany, such as monopolies, cross-subsidies or closed privileged relationships between network infrastructure suppliers and equipment manufacturers. In result national governments largely accepted the EC's regulatory framework. The period also saw major reforms that considerably reversed the increasing diversity among Britain, France and Germany. All three countries moved towards regulated competition model of formal institutional structures, with the privatization of suppliers, the ending of monopolies and the creation of independent sectoral regulatory authorities taken place. (Thatcher 2007)

During the last 15-20 years, a new standard model has taken hold of the economic framework for the operation of utilities. It is found to have as its core the utility services that will be (Stern 2000):

- provided by a set of commercialized companies;
- monopoly (network) elements are separated from potentially competitive elements;
- competition is actively introduced into the potentially competitive elements;
- private capital is introduced where possible and appropriate, particularly into the competitive elements, typically with privatization of some or all of the existing assets.

In the study about regulatory institutions in small and developing countries (Stern 2000) is found that these new elements have largely applied and the new model has replaced the traditional model of utility services being supplied by a state-owned vertically and horizontally integrated monopoly, supervised by the national government and typically operating in a non-commercial or semi-commercialized way. This change has been induced across developed and also developing countries.

Focusing more detailed on regulatory models we may recognize that in Europe only some countries have multi-sector regulators, for example Luxembourg and Germany. However, the approach is widely used in the United States and Latin

America. For example, multi-industry regulators have been successful in Costa Rica, Jamaica, and Panama and in the states of Brazil (Kessides 2004).

At first is studied particular arrangement in Germany. In Germany the Federal Network Agency for Electricity, Gas, Telecommunications, Post and Railway is a separate higher federal authority within the scope of business of the Federal Ministry of Economics and Labor, and has its headquarters in Bonn. In July 2005 the Regulatory Authority for Telecommunications and Post which superseded the Federal Ministry of Post and Telecommunications (BMPT) and the Federal Office for Post and Telecommunications (BAPT), was renamed Federal Network Agency. It acts as the root certification authority as provided for by the Electronic Signatures Act.

The Federal Network Agency's task is to provide, by liberalization and deregulation, for the further development of the electricity, gas, telecommunications and postal markets and, as from January 2006, also of the railway infrastructure market. For the purpose of implementing the aims of regulation, the Agency has effective procedures and instruments at its disposal including also rights of information and investigation as well as the right to impose graded sanctions.

The Federal Network Agency's decisions in the fields of electricity, gas, telecommunications and post are made by its Ruling Chambers. The undertakings directly concerned may participate in the Ruling Chamber proceedings.

The business circles affected by the proceedings may be summoned. The Federal Network Agency's decisions are based on the Telecommunication Act, the Postal Act and the Energy Act and can be challenged before court. In case of legal dispute neither the Regulatory Authority nor the Federal Ministry of Economics and Labor (BMWA) can quash the decision made by the Ruling Chambers. In contrast to the provisions of the Act Against Restraints of Competition (GWB) a so-called ministerial decision is not foreseen.

The rulings by the Ruling Chambers on telecommunications and postal matters may be challenged directly before the Administrative Courts, and before the Civil Courts if energy matters are concerned. A procedure is not foreseen. Proceedings on the main issue do not have a staying effect.

Multi-sector regulation model has several advantages in comparison with a single model, as it is possible to:

- Implement a unified approach in all the regulated sectors, for example, to apply a unified tariff calculation method in energy, telecommunications, post and railway sectors, have a unified procedure for issuing licenses, etc.;
- Take into account the convergence of technologies and services in the regulated sectors. In the world the traditional borders between the different sectors are nowadays disappearing fast. More active co-operation is observed between enterprises working in different sectors, for instance, between railway and

telecommunications. Due to technological development, telecommunications take over a considerable part of functions earlier performed by postal offices. Energy utilities, in turn, are providing telecommunication services. Convergence of sectors creates the necessity to develop a unified system of regulation for all the sectors and to apply equal regulation principles;

- Harmonize expected tariff changes in separate sectors thus preventing simultaneous price increase for public utilities and reduction of the economy's competitiveness;
- Attract and effectively utilize the intellectual potential;
- Make rational use of financial resources.

Conclusion here in general is quite complicated to draw from the experiences of competition creation in sector-specific spheres, because as it has been recognized from the analysis, the competition creation has been developing in different ways. Besides the discussion about regulatory institution type in network industries, there has been under observation the relationship between competition authorities and sectoral regulators (Global Forum on Competition). Still one is clear, that sector-specific regulators and national competition authority have to cooperate in regulation-for-competition. How to ensure that this cooperation is successful and efficient?

One way to ensure consistency with respect to competition decisions is to unify regulator and competition authority. In this approach, towards competition law enforcement of a sector regulator and a competition authority, have to merge the regulator with the competition authority. One example of merging a regulator with a competition authority occurs in the Netherlands, where the government has created chambers within competition authority (NMa) for sector regulation. The energy regulator in the Netherlands, the Office of Energy Regulation (DTe) is placed under the oversight of the competition authority, the NMa. DTe is responsible for the implementation and supervision of the Electricity Act of 1998 and the Gas Act of 2000. In 2004, the Office of Transport Regulation was set up as another chamber in the NMa. The chamber model allows highly specialized knowledge related to sectors exist within the structure of a competition authority focused on broad issues of improving competition. (The relationship between... 2005). This structure helps in ensuring the consistency in application of competition law. If competition authorities are responsible for competition law application in some areas and sector regulators are responsible in other, then ensuring such consistency can be complicated task.

If there has been decided in favor of independent regulatory agency, then still the question stays – what is the best solution for regulatory agency. Should the government create industry-specific regulators or a single agency with a broader mandate.

Here we can conclude that it is possible to distinguish between three types of institutional model for the regulation in sector-specific markets:

- single sector regulators and competition authority;
- integrated multi-sector regulatory institution and separate competition authority;
- united competition supervisory and regulatory institution.

### 3. Practices of regulatory institutions in transition countries

As the transition countries began restructuring and privatizing their infrastructure in 1990s, they looked to the countries that first had taken this approach, like Canada, Great Britain, United States and Australia. But these countries have long traditions in regulating the infrastructure, dealing with monopolies and they also have long traditions of market capitalism supported by strong legal institutions. Complicated matters were caused also because state enterprises in transition economies were often organized to achieve political objectives, not to solve market failures (Guasch *et al.* 1999).

It was clear that the transition countries are not able to achieve credible, stable and effective regulation of infrastructure overnight.

The main problems in transition economies concerning the shortcomings of institutional prerequisites for effective regulation were pointed out by World Bank Policy Research Report (Kessides 2004) and included following aspects:

- Separation of powers, especially between the executive and the judiciary.
- Well-functioning, credible political and economic institutions – and an independent judiciary.
- A legal system that safeguards private property from state or regulatory seizure without fair compensation and relies on judicial review to protect against regulatory abuse of basic principles of fairness.
- Norms and laws – supported by institutions – that delegate authority to bureaucracy and enable it to act relatively independently.
- Strong contract laws and mechanisms for resolving contract disputes.
- Sound administrative procedures that provide broad access to the regulatory process and make it transparent.
- Sufficient professional staff trained in relevant economic, accounting, and legal principles.

Particular problems concerning the regulatory authorities were pointed out in some transition countries as shortly implied.

In Hungary, the energy regulator's independence was ranked as limited by a lack of autonomous revenue, fixed-term appointments for the board of directors, and well-defined criteria for appointing and dismissing directors. Also civil service salary caps made difficult to attract qualified staff. In telecommunications the head of the sector's regulatory authority reported to the minister of transport and communications (Kessides 2004).

The Czech Republic was also found to lack independent regulators for energy and telecommunications – the situation occurred according to the government's ambivalence toward specialized regulatory agencies in the early years of transition. As a result the Ministry of Finance had the final decision in regulating gas and electricity prices, while the energy regulator was part of the Ministry of Industry and Trade. Similarly, the primary regulator for telecommunications was part of the Ministry of Transport and Communications (*Ibid.*).

In Poland, energy regulator met most of the formal requirements for independence. In Romania telecommunications regulation was found to lack any semblance of independence. The minister of industry and trade appoints the chair, vice chair, and three of the gas regulator's board of directors, ensuring ministerial control over the agency. Concerning the electricity sector it is pointed out that Romania and Bulgaria have taken bold steps to create independent regulators. Romania's National Electricity and Heat Regulatory Authority is a United Kingdom style independent entity, while Bulgaria's State Commission for Energy Regulation incorporates elements of United States style independent commissions (*Ibid.*).

By now the regulatory process in transition countries has been developed in quite different ways. Let us have a look to the process of regulation in sector-specific spheres in the Baltic countries.

#### **4. Development of regulatory and competition policy supervisory institutions for regulation of sector-specific industries in the Baltic countries**

About Latvia the World Bank Policy Research Report indicated that multi-sector regulator has financial independence from state budget and has shown strong commitment to transparency and accountability. But its independence is compromised by the close affiliation between its board members and the political parties that nominate them.

In Latvia the regulation of public utilities was performed by several institutions until October 2001. Energy Regulation Council (ERC) – an institution under supervision of the Ministry of Economy was responsible for regulation of energy sector. Ministry of Transport and its supervised Telecommunication Tariffs Council (TTC) carried out regulation in telecommunications sector. The main tasks of postal sector regulation were performed by the Communication Department of the Ministry of Transport (MoT). Railway Administration (RA) supervised by the Ministry of Transport regulated the railway sector.

Practical experience showed that the regulation was rather inefficient due to fragmented institutions and limited resources available. Moreover such regulation system did not ensure an independent decision making process. The European Union reports on Latvia regularly emphasized the need to strengthen the regulatory process. Then, to change the situation and improve the regulatory system an institutional reform was implemented.

Already in January 1997 the Latvian government made the decision to set up a unified regulating institution in energy, telecommunications, postal and railway sectors. After a four year period for legislation development a new public utilities regulation institution – Public Utilities Regulation Commission (PUC) started its operation in October 2001 taking over the responsibilities of ERC, TTC, RA and MoT. The Regulator operates in compliance with the law On Regulators of Public Utilities, Regulator’s statutes, sectoral and other normative acts. The Regulator is an institution supervised by the Ministry of Economy which is independent for performing the tasks set in legislation and the Council of the Regulator is appointed by the Seima. The PUC in its operations is fully realizing the advantages of a multi-sector public utilities regulation system in Latvia and implementing uniform regulatory principles for all regulated sectors.

In Lithuania is established National Control Commission for Prices and Energy (NCC) in 1997. The NCC regulates electric and thermal energy, district heating, natural gas, water and transport sectors. The Government gradually rejected their regulation by transferring the functions of independent institutions to multi-sector regulator. Now the NCC responsibilities include tariff setting, regulation of market entry (licensing) and monitoring of supply service quality.

In Estonia, the sectoral regulatory arrangement was up to year 2008 the following:

- *Postal Board* – regulator of telecommunication and postal services markets;
- *Energy Market Inspection* – regulator of electricity and energy market;
- *Railway Inspection* – regulator of railway sector in technical aspects;
- *Technical Supervisory Inspection* – development, dissemination and supervisory activities in different technical spheres;
- *Competition Board* – supervisory activities in markets and merger control.

In the structure of competition authority (Figure 2) there were supervisory departments which had competition supervisory functions in particular specific sectors (see Table 3).

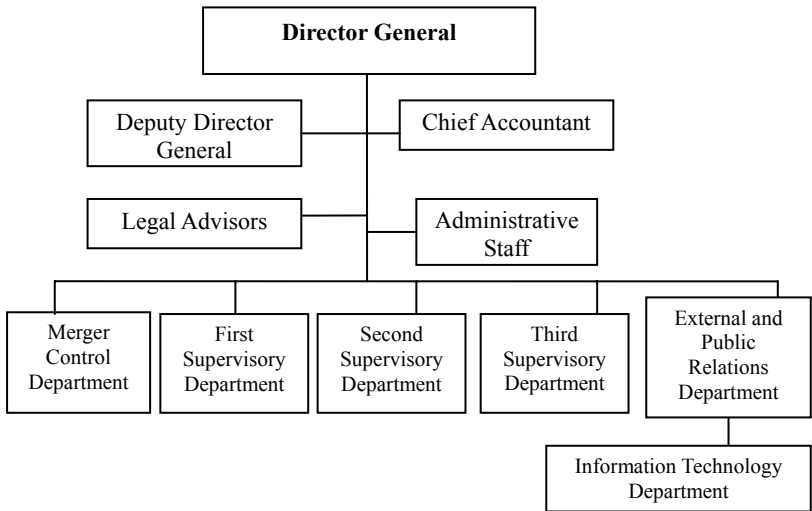
Table 3 gives the overview of Estonian Competition Authority supervisory departments and about issue how market supervisory functions were divided between departments.

**Table 3.** Division of industries between supervisory departments

<b>First supervisory department</b>	<b>Second supervisory department</b>	<b>Third supervisory department</b>
energy sector	food industry	transport
industry	trade	construction
post	agriculture	financial services
water sector	services	culture

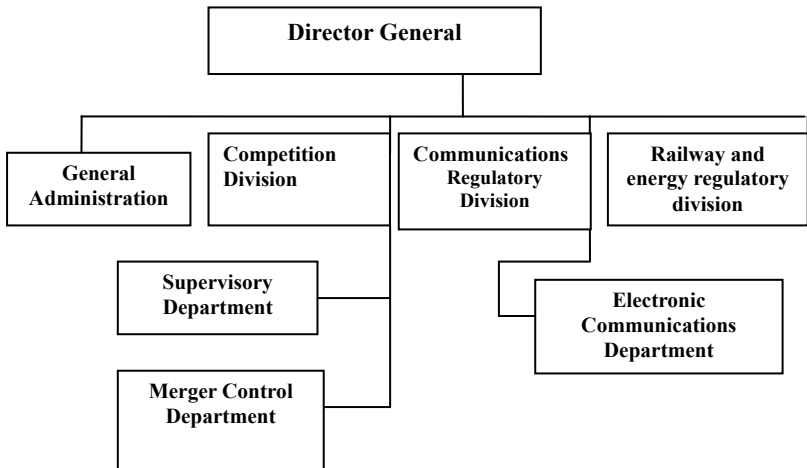
Source: Annual Report of Estonian Competition Authority 2007.





**Figure 2.** The Organizational Structure of the Estonian Competition Authority until year 2008. (Estonian Competition Authority)

This institutional intra-arrangement already showed positive tendency towards the unified competition supervisory and multi-sector regulatory institution model. New institutional arrangement was established in Estonia from January 2008 (see Figure 3).



**Figure 3.** Structure of Estonian Competition Authority from year 2008. (Estonian Competition Authority)

There is a large variety in terms of competition policy organization in the international practice. At the same time, in theory has been stressed the partial similarity to monetary policy institution – necessity to protect the long-term economic interests from the daily political problems. Therefore has been often recommended that competition policy body should be relatively independent from executive power.

Looking at the experience of small countries we see the endeavor to separate the investigation of competition law violations from corresponding decision making. At that, the decision making body (Competition Council in Finland and Denmark, Cartel Court in Austria) is staffed by participation of parliament, king or president of the country. In Switzerland, the social cartel commission formed by parliament has important role. The competition policy authorities have an important role also in some transition countries. In Hungary, the President of Competition Board, who is appointed by the President of the country for six years, is participating in sessions of parliament and government. In Latvia, by the law from 1997, the Competition Council from legal person is the supervisory body. The members of the Council are appointed by government for five years, but one government cannot recall the council member appointed by itself. This should help consolidate the independence of decision council. The status of council member is not connected with the parliament membership. Therefore the different methods are used in order to achieve one goal – to protect the independence of competition policy from government daily policy.

In Estonia the Competition Board had rather weak position in the state structure. It is as usual state board subordinated to the Ministry of Economic Affairs and Communications. Probably is that fact reflecting most clearly the understanding that competition policy has secondary role in small open economy.

In the context of competition authority position in the state structure, there is need to point out the issue concerning the relationship with state regulators of independent branches of economy. As seen from international practices there is discussion and good practices about the expediency to combine them. Here we can find the arguments from the both sides as in favor and as against. Nevertheless, in a small country (especially in transition period) the combining should strengthen the general status of competition policy and administrative capacity. Because all the regulators have at least one common task – control over the dominant enterprise, no matter *ex ante* or *ex post*.

In terms of developments concerning the institutional structure for competition policy implementation is also useful to consider experience and practices from countries which have had success in particular spheres.

From former experience of other countries is known that establishing separate agencies for regulating gives possibilities to recognize the unique economic and technological characteristics of each infrastructure industry and enables regulators to

develop more detailed industry-specific expertise. It also reduces the risk of institutional failure and encourages innovative responses to regulatory challenges.

Implementing the model of one regulator for several industries makes possible to share fixed costs, scarce human and other resources. Also consolidation builds expertise in cross-cutting regulatory issues: administering tariff adjustment rules, introducing competition in monopolistic industries, and managing relationships with stakeholders (Kessides 2004). In addition, the broader responsibilities of a multi-industry agency reduce its dependence on any one industry and so help protect against capture and may be better able to resist political interference because its broader constituency gives it greater independence from sector ministries.

The regulatory institution model implemented in Latvia and Germany and partly in Lithuania, where different sector regulators are aggregated into one institution, is the example of combined regulatory institution. This type of model allows ensure regulatory consistency, technological convergence and also makes possible better use of human and financial resources. Additionally, because small economies have limited human and financial resources, the particular model of regulatory institution gives an opportunity for merging regulatory responsibilities. Under the consideration should be the model of unified multi-sector regulator and competition authority institution, which has been implemented in the Netherlands as well in Estonia lately, as the next step in developments of regulating network industries in two other Baltic countries. This solution of unified institution will ensure internal consistency with respect to competition decisions and increase the authority of competition policy.

In addition, there are some other arguments for one unified regulatory and competition supervisory institution as market substitution aspect between the output of regulated industries – especially between electricity and gas, and also between modes of transportation and telecommunications. One has also take into consideration reasons arising from scarcity of expertise and vulnerability to political and industry capture in small economies.

## **Conclusion**

There are markets in which competition policy will lead to satisfactory results and other markets which need regulation in order to attain the efficient goal. Competition authorities and sector regulations have different core competencies. In the process of applying competition laws in regulated sectors, competition authorities can benefit from the technical expertise of sector regulators and should seek to co-operate with sector regulators to benefit from this expertise.

Nevertheless, the competition replacement with public regulation is economically reasonable only in essence of natural monopolies, for example different supplying and distributional networks. There it concerns only managing the essence of monopoly – the networks.

For finding the suitable solution of regulating arrangement in network industries in the Baltic countries there were analyzed experience of regulatory institutions in some developed countries (mainly in Germany and the Netherlands) besides regulatory institutions established in Latvia, Lithuania and Estonia.

One possibly suitable model of regulatory institution for the Baltic countries seems to be a multi-sector institution where different sector regulators are aggregated. This type of combined regulatory institution reduces its dependency on any one industry, protects against capture, ensures the regulatory consistency and also makes better use of human and financial resources, which are limited especially in small economies. The next step further from the multi-sector regulatory institution is merging the sector regulators with a competition authority. Mentioned development has taken place already in Estonia and it seems reasonable solution for Latvia and Lithuania as well.

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# PUBLIC ENVIRONMENTAL EXPENDITURES IN TIME OF CRISIS IN ESTONIA

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## Abstract

The purpose of this paper is to study the impact from the recent financial crisis on public environmental expenditure in Estonia. The data show different tendencies depending on the level of government. While the recent financial crisis has affected Local Government spending on environmental protection negatively, Central Government environmental protection expenditure increased by more than 30 percent between 2007 and 2008. Preliminary data indicate that this tendency continued in 2009. When comparing expenditures on environmental protection during times of crisis it is possible to detect differences between the developments in 1998-1999 and those in 2007-2008. Public expenditures on environmental protection were much more sensitive to declining GDP during the previous financial crisis than during the recent crisis. In the 2000s two important changes have affected environmental funding in Estonia. Accession to the EU in 2004 has made EU funding available for environmental protection. The ecological tax reform introduced in 2005 has increased the revenues of environmental charges earmarked for environmental purposes.

**Keywords:** public environmental expenditure, financial crisis

**JEL Classification:** H59, Q5, Q28, Q58, H72

## 1. Introduction

The recent financial crisis has resulted in major cuts of public expenditure in Estonia. In order to bring the state budget into balance, the Estonian Government reduced state budget expenditures by 3.4 percent in 2008 (Ministry of Finance 2008). These cuts affected the Ministry of Environment by 7.5 percent. In 2009, falling tax revenues called for further adjustments.

Public expenditure management is an important aspect of a country's environmental policy. Major budget cuts in times of crisis might jeopardize attainment of critical long run objectives. Observations during the Asian financial crisis suggest that public environmental expenditure is more sensitive to cuts in public expenditure during periods of crisis than other public expenditure (Vincent 2002). Vincent and his co-authors find that environmental expenditures in Indonesia declined much more than budget cuts on average. A comparison to other Asian countries showed that environmental expenditures declined much more in Indonesia than they did in Malaysia, Thailand and Korea during the same time period. However, the article does not discuss potential reasons for these differences nor does it make any comparisons of environmental policies.

The study by Vincent and his co-authors represent one of several World Bank reviews about public environmental expenditure. The Public Environmental Expenditure Reviews or PEERs have had a wide variety of purposes including measuring the impacts of a financial crisis, preparing a ministry for budget cuts, tracking funds, and determining future resource requirements (Swanson, Lundethors 2003). However, a low level of public environmental spending is not in itself an argument for more expenditure. Studies on transition economies in Central Europe, as well as observations of environmental finance in Turkey, conclude that it is not primarily the lack of financing that limits environmental recovery; it is rather weak institutional capacity and unclear priorities that hamper environmental spending (Prekzko, Zyliz 1998; Sezer 2003).

Estonia has prioritized budget balance since independence and has succeeded much better than most other CEE countries in keeping government budgets under control and reaching fiscal sustainability (Aristovnik, Bercic 2007). This position makes Estonian environmental expenditure in times of crises an interesting case study. The purpose of this paper is to follow the development of public environmental expenditure in Estonia and study the impact of financial crisis. Another purpose is to link developments to funding principles of the Estonian environmental policy.

We begin by describing the framework of funding of environmental policy in Estonia and after that we review data sources of environmental expenditure. Then a presentation of developments of public environmental expenditure during the time period 1995-2009 follows. Special attention is devoted to two periods of crisis 1998-1999 and 2008-2009. After that we discuss the results and present conclusions based on the observed developments.

## **2. Framework of Environmental Taxes and Charges**

Estonia has used economic instruments for environmental protection since early 1990s. The principal legislation that regulates environment taxes and charges in Estonia include the “Alcohol, Tobacco, Fuel and Electricity Excise Duty Act” (RT I 2007, 45, 319), the “Packaging Excise Duty Act” (RT I 1997, 5/6, 31) and the “Environmental Charges Act” (RT I 1999, 24, 361). A specific feature of the environmental taxes is that these accrue to the state budget for financing the general needs of the state. The packaging excise duty is an exception though, since 50 percent of revenues must be used for environmental protection and the remaining 50 percent is available for general needs. The proceeds from environmental charges are earmarked for environmental protection. Other sources of financing for environmental protection include the European Union funds, guided by the Estonian National Development Plan for the Implementation of the European Union Structural Funds – Single Programming Document 2004-2006, and the Operational Programme for the Development of the Living Environment for the years 2007-2013.

The environmental taxes in use are excise duties on fuel and packaging, and heavy goods vehicle tax. In 2008, an excise duty was imposed on electricity. Unlike many

other countries, there is no separate vehicle tax on passenger cars. In 2008, environmental taxes contributed 7 percent of the state tax revenue (approximately 5 billion EEK) (Keskkonnaülevaade 2009).

The most important source for the accomplishment of environmental policy objectives and implementation of the “polluter pays” principle are environmental charges. The purpose of the environmental charges is to prevent or reduce the possible damage related to the use of natural resources, emission of pollutants into the environment and waste disposal. Environmental charges are paid into the state budget where they are allocated for maintaining the state of environment, restoration of natural resources and remedying of environmental damage. A part of the environmental charges are paid into the local government budgets where they are used according to local needs (not necessarily for environmental purposes). The environmental charges paid into the state budget contributed approximately 1.5 percent of total tax revenue in 2008 (Keskkonnaülevaade 2009). The pollution charge was the most important revenue source, contributing about 1.3 percent in 2008. In the years prior to the ecological tax reform pollution charges contributed about 1 percent of total tax revenue.

There are two different types of environmental charges: the natural resource charge and the pollution charge. The pollution charge is levied on emissions of pollutants into the ambient air, water bodies, groundwater or soil, and on waste disposal. The natural resource charge in turn is divided into: the forest stand cutting charge, mineral resources extraction charge, water abstraction charge, fishing charge and hunting charge.

Since 1994, over 6 billion EEK have been paid for pollution, extraction of mineral resources and water abstraction charges (Keskkonnaülevaade 2009). About 76 percent (ca 4.6 billion) have been paid into the state budget and the rest into local government budgets. Environmental charge rates were initially set very low, considering the ability to pay of the population and for promotion of economic development.

With the economic advancement it has become possible to pay more attention to environmental protection. Already in 1996, the annual pollution charge rates were raised by 20 percent and the annual natural resource charge rate by 5-10 percent. In 2005, the Government decided to introduce an ecological tax reform. The key principle of an ecological tax reform concept is to increase the use of environmental taxes and reduce the burden on employment related taxes (income or social taxes). One of the aims of Estonian ecological tax reform is also that the overall tax burden (ratio to GDP) would not increase. As a first step personal income tax was lowered from 26 to 24 percent in 2005. All main environmental charges were raised substantially in 2006. By following the logic of the ecological tax reform the increase in charges was induced by the need to make economic instruments more effective and give producers and the general public a clear signal that Estonia wants to use its natural resources and environment in a sustainable way. The level of charges continued to increase in 2007 through 2009.



Major payers of environmental charges are enterprises with substantial environmental effects – oil-shale industry companies, chemical and paper industry, water supply and waste disposal enterprises, enterprises extracting and processing mineral resources. In 2007, ten major natural resource users paid 80 percent of the charges (Keskkonnaülevaade 2009).

## **2.1. Financing Environmental Measures**

Environmental charges have been an important source for financing the renovation of sewage disposal plants, investments into pollution abatement equipment and environmentally adapted waste disposal sites. Funds paid into the state budget for using natural resources are used according to the Environmental Charges Act through the Environmental Investment Centre (EIC) to promote environment protection. EIC's environmental programme is the main national measure for financing environment protection. The fields supported by the EIC programme include water management, waste management, nature conservation, forestry, fishery and environmental awareness.<sup>1</sup>

In total, 3.4 billion EEK were paid out under the environmental programme during 2000-2008. As the European Union has established strict fixed-term requirements for the quality of drinking water, purification equipment and sewage systems, most of the proceeds from environmental charges have been used for bringing the water supply into conformity with the requirements. Significant contributions have been made also into fulfilling the requirements established for waste treatment and disposal. Approximately 2 billion EEK in total were given through the environmental programme for the development of water supply and waste disposal infrastructure in 2000-2008 (Keskkonnaülevaade 2009). This amount was increased by the recipient's own contribution.

An important source of finance of environmental investment in addition to the environmental programme is foreign aid. In 2005-2008, Estonia received approximately 2 billion EKK worth of foreign aid for the development of environment protection infrastructure and environment protection activities (Keskkonnaülevaade 2009). The aid was received mainly from the EU Cohesion Fund, and three thirds (or 1.5 billion) were used in water supply for various investments for the improvement of the quality of drinking water and organization of sewage disposal and purification.

## **3. Data on Public Environmental Expenditure**

Statistics Estonia produces data on general government revenues and expenditures. The data set is available for the time period 1995-2008 ([www.stat.ee](http://www.stat.ee)) and is classified according to the United Nations Classification of the Functions of Government (COFOG)<sup>2</sup>. One of these government functions is environmental

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<sup>1</sup> <http://www.kik.ee/?op=body&id=105>

<sup>2</sup> <http://unstats.un.org/unsd/cr/registry/regcst.asp?Cl=4>

protection and covers activities that reduce negative externalities. The definition of environmental protection set by OECD and Eurostat includes “activities aimed directly at the prevention, reduction and elimination of pollution or any other degradation of the environment resulting from the production processes or from the use of goods and services expenditure on waste management, waste water treatment, pollution control, protection of biodiversity and landscapes, and other environmental protection activities” (Swanson, Lundethors 2003). Environmental protection is broken down into six sub-categories:

- Waste management
- Waste water management
- Pollution abatement
- Protection of biodiversity and landscape
- Research and Development (R&D)
- Other environmental protection expenditures

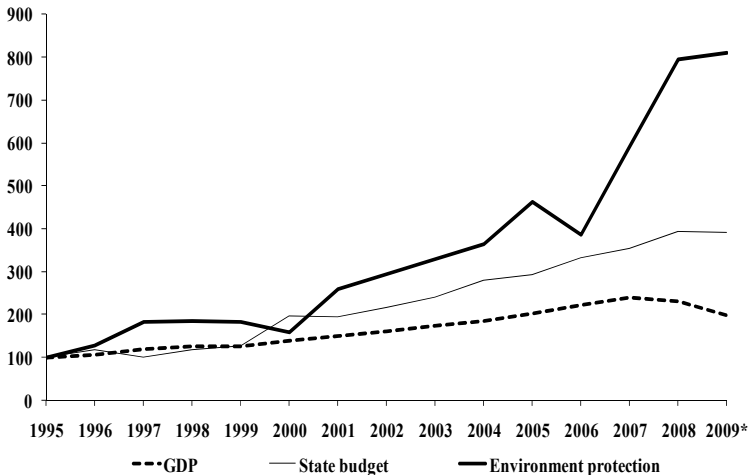
These data make it possible to follow the Central Government and Local Government expenditure on environmental protection and distribution by domain during 14 years.

Specification of investments into and current expenditure on environmental protection can be followed in another time series. These data are available for the time period 2001-2008 and for Local Governments only. Statistics Estonia collects information in a survey following SERIEE classification, which is similar to the COFOG system, but provides codes in greater detail. In addition, Local Governments are asked to allocate activities covering more than one code by specifying percentages. The COFOG system allocation is based on the majority principle implying that investments covering two fields will be categorized according to the major field of expenditures (Salu 2009). Even on aggregate level there might be discrepancies between these two sources when they cover more than one group of government functions. This is the case of waste water management included in government function of environmental protection and water supply, which is classified as the government function of housing and community amenities.

Since the purpose is to study the development of public environmental expenditure during the financial crisis, we are interested in covering latest developments. However, data for 2009 are not yet available. In order to assess most recent developments, preliminary budget data for 2009 have been collected from the Ministry of Finance. Another difficulty is that Estonia receives foreign aid for environmental protection purposes, which makes it difficult to detect “pure” public sector expenditure on the environment. In order to give an approximate estimate, we present assessments for certain years in our time series. The time series for environmental protection expenditures are presented at constant prices using the GDP deflator.

#### 4. Budget Cuts in Time of Crisis

Central Government budget expenditure for environmental protection was 1,450 million EEK at current prices in 2007. During the first year of crisis, in 2008, expenditure increased to 2,083 million EEK at current prices. In terms of Central Government budget expenditure, environmental protection was 2.3 and 2.8 percent respectively. Figure 1 shows the development of state budget expenditure, GDP and state budget expenditure on environmental protection during the time period 1995-2009.

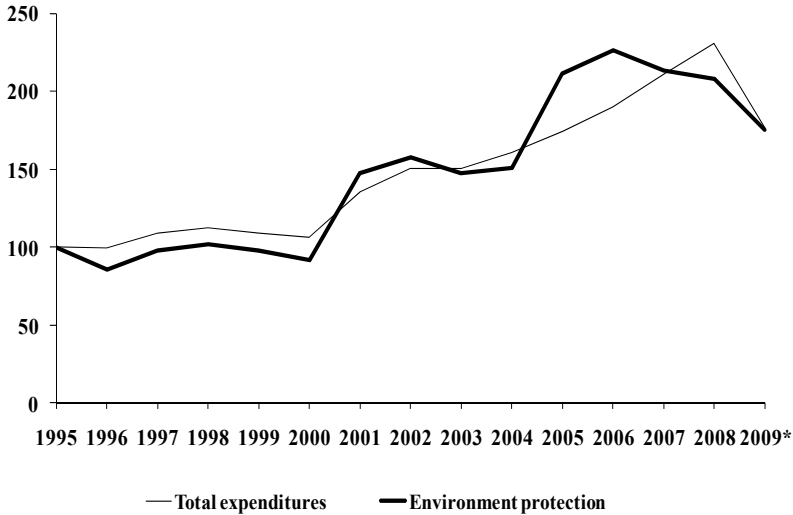


**Figure 1.** Gross domestic product, central government expenditure and central government expenditure on environmental protection, volume (constant prices), 1995 Index=100. (Authors' calculations, Statistics Estonia\*, Bank of Estonia and Ministry of Finance)

The figure shows that expenditures on the environment have grown significantly during the past few years. There have been reductions in spending on environmental protection, but these cut-downs occurred in 2000 and 2006. Between 2008 and 2009 there was a small positive increase in expenditure on environmental protection, while total state budget expenditures remained on the same level as a year before. Data thus suggest that Estonian state environmental expenditures have not suffered from budget cuts during the recent financial crisis.

Local Government expenditure on environmental protection was 907 million EEK in 2007. This means that Local Government expenditures were about 40 percent smaller than Central Government expenditures on environmental protection. As is the case of the Central Government, Local Government expenditures increased in 2008 and totaled 945 million EEK. However, at constant prices, Local Governments decreased spending on environmental protection during the first year of crisis. The

share of environmental protection expenditures was 3.8 percent in 2007 and 3.4 percent of Local Government expenditures in 2008. Figure 2 shows the development of Local Government expenditure in total and Local Government expenditure on environmental protection at constant prices during the time period 1995-2009.



**Figure 2.** Local government expenditure in total and expenditure on environmental protection, volume (constant prices), 1995 Index=100. (Authors’ calculations, Statistics Estonia and Ministry of Finance\*)

The figure shows that expenditures on environmental protection have grown significantly during the time period 1995-2009. Since 2000, developments have been cyclic, with one peak in 2002 and another peak in 2006. The peak in 2006 coincides with a reduction in Central Government expenditure and with the introduction of the ecological tax reform. The growth in environmental protection expenditure is well correlated with total budget expenditure and in contrast to the central budget, local budget expenditures on environmental protection have declined over the past few years. This decline continued in 2009. Environmental protection expenditure decreased at a similar pace as the Local Government expenditure between 2008 and 2009. The significant correlation between Local Government budget expenditure and expenditures on environmental protection is probably related to Local Government responsibility for waste management and waste water treatment. To some degree these activities are financed by tariffs and when incomes decrease so do expenditures.

The recent financial crisis is the most severe, but not the only economic crisis that has hit Estonia since independence. The available time series covers the economic crises of 1998, which resulted in negative growth records in 1999. Table 1 shows

annual change in GDP, annual percentage change of expenditure on environmental protection during the time period 1996-2009.

The year-to-year changes in expenditures on environmental protection have fluctuated significantly during the time period under study. When comparing expenditures on environmental protection during times of crisis it is possible to detect differences between the developments in 1998-1999 and those in 2007-2008. The Central Government expenditures on environmental protection were more sensitive to declining GDP during the previous economic crisis than during the recent financial crisis. In addition, Central Government expenditure on environmental protection continued to contract in 2000 when the economy had recovered. It is difficult to predict the timing of recovery from the current crisis, but preliminary data on 2009 and the state budget of 2010 suggest further expansion of expenditure to the Ministry of Environment. According to the Ministry of Finance, growing expenditures are based on increases in EU funding (Ministry of Finance 2010). The direction of the development of Local Government expenditures on environmental protection has, on the other hand, been sensitive to budget cuts during the two crises.

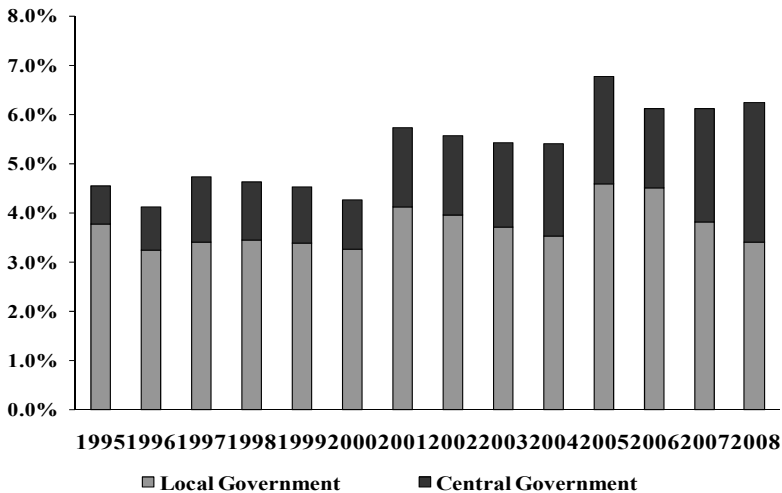
**Table 1.** Annual percentage change of GDP, annual percentage change of expenditure on environmental protection at Central and Local Government in constant prices.

	GDP	Expenditure on environmental protection	
		Central Government	Local Government
1996	5.7%	27.9%	-14.3%
1997	11.7%	42.6%	13.9%
1998	6.7%	1.5%	4.5%
1999	-0.3%	-1.6%	-4.4%
2000	10.0%	-13.3%	-6.0%
2001	7.5%	64.4%	60.7%
2002	7.9%	13.1%	7.0%
2003	7.6%	11.9%	-6.6%
2004	7.2%	10.9%	2.1%
2005	9.4%	26.7%	40.3%
2006	10.0%	-16.4%	7.1%
2007	7.2%	53.1%	-5.8%
2008	-3.6%	34.7%	-2.4%
2009*	-14.2%	1.8%	-15.9%

Source: Authors' calculations, Statistics Estonia, Bank of Estonia and Ministry of Finance. Preliminary data\*.

Looking at a possible link between GDP growth and change in environmental protection expenditures suggests that impacts differ between Central and Local Governments. In six years out of fourteen, the direction of the year-to-year changes in expenditure on environmental protection differs for the two levels of government. The Central Government expenditures on environmental protection have grown more than GDP during ten years, while the same is true for Local Government expenditure only during four years. However, those years that GDP has grown at least 9 percent there has been a two digit growth in environmental expenditure in both levels of government during three single years: 1997, 2001 and 2005. On the other hand, a high level of economic growth does not seem necessary for growing expenditure on environmental protection (see Central Government expenditure on environmental protection in 2006).

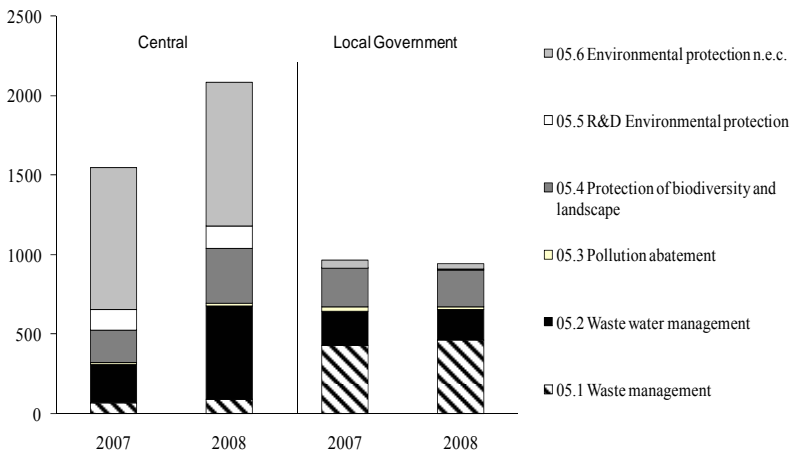
The different trends in expenditure on environmental protection between the central and local levels since 1995 can also be detected by looking at the environmental protection shares of budget expenditure (see Figure 3). While environmental protection expenditures have grown significantly as a share of Central Government expenditures from about 1 percent in 1995 to 2.8 percent in 2008, Local Government budget expenditures on environmental protection have been on a constant level of about 4 percent during the whole time period 1995-2008.



**Figure 3.** Environmental expenditure as percentage of total expenditures of local and central budget expenditures, 1995-2008. (Authors’ calculations and Statistics Estonia)

#### 4.1. Environmental protection expenditure by domain

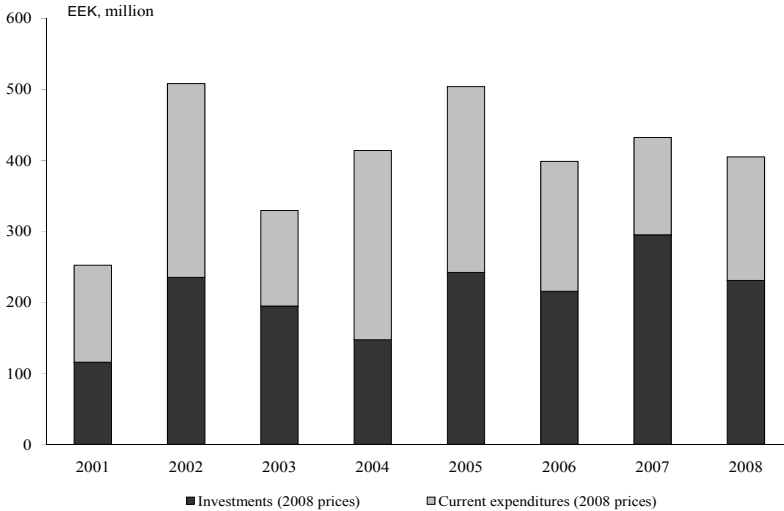
Government expenditures on environmental protection can be followed up by domain. While Local Governments made small adjustments, including cuts in waste water management, and pollution abatement expenditures in 2008, the Central Government increased its expenditures on waste water management and on protection of biodiversity and landscape. During the previous economic crisis, Central Government expenditure declined on waste management, waste water management and pollution abatement. Local Governments reduced all environmental protection spending except expenditures on waste management between 1998 and 1999.



**Figure 4.** Environmental expenditure by function, local and central budget expenditures, 2007-2008. Constant prices (price level 2008), million EEK. (Authors' calculations and Statistics Estonia)

#### 4.2. Investments

The available data on investments cover only Local Governments and show that spending has grown over time, but do not reveal any specific trend in terms of investments or current expenditures. During the time period 2001-2008, between 40 and 60 percent of Local Government expenditures on environmental protection concerns investments. From the beginning of 2000s until the end of the decade the focus has shifted from a dominance of waste water investments to an increasing share of waste management investments.



**Figure 5.** Local Government budget expenditures on environmental protection SEIREE method (prices 2008), million EEK. (Authors’ calculations and Statistics Estonia)

### 4.3. Foreign Aid

There is no comprehensive data set covering foreign aid payments to environmental protection expenditure in Estonia. Generally foreign aid only includes investments. According to gross estimates, foreign aid has made up the lion part of government investments into waste water treatment and to waste management. The share of foreign aid in the State Investment Programme on environmental investments varied between 50 and 60 percent during the time period 2002-2004 (Statistikaamet different years). In 2005-2008, foreign aid made up 40-50 percent of environmental investments in the state sector (Keskkonnaülevaade 2009). According to this source, foreign aid increased from about 600 million EEK in 2007 to about 700 million EEK in 2008. At constant prices, this corresponds to an increase of about 35 percent. Expenditures for co-financing environmental investments more than doubled – from 143 to 395 million EEK between 2007 and 2008. Since this source includes investments into the water supply system it does not exactly correspond to the earlier data set. The indication though is that foreign aid probably was an important driving force of the observed increase in environmental protection expenditure between 2007 and 2008.

In an overview about the use of environmental charges in Local Governments, Salu collected information about EU funding for environmental protection purposes (Salu 2009). The results indicate that between 4 and 16 percent of environmental protection expenditures of Local Governments were financed by various EU funds during the time period 2001-2007. However, Salu’s data did not cover LIFE and



INTERREG programmes. Data for recent years and developments during the financial crisis period have not been possible to access.

## **5. Conclusions**

Data on public environmental expenditure show that the recent financial crisis has decreased Local Government spending on environmental protection, while this is not the case of the Central Government. Between 2007 and 2008, Central Government expenditure increased by more than 30 percent while Local Governments cut down their expenditure by 2.4 percent. Preliminary data indicate that this tendency has continued in 2009. When comparing expenditures on environmental protection during times of crisis it is possible to detect differences between the developments in 1998-1999 and those in 2007-2008. Public expenditures on environmental protection during the previous financial crisis were much more sensitive to declining GDP than during the recent crisis.

Another finding is that environmental spending of Local Governments is closely correlated to total budget expenditure. The expenditures on environmental protection have been on a constant level of the total budget of about 4 percent during the time period 1995-2008. The level environmental spending of the Central Government is not equally sensitive to total budget expenditures and their share of total Central Government expenditures grew from about 1 percent in 1995 to 2.8 percent in 2008.

In the 2000s two important changes have affected environmental funding in Estonia. Accession to the EU in 2004 has made EU funding available for environmental protection. In addition, the ecological tax reform has increased the revenues of environmental charges earmarked for environmental purposes.

The environmental policy aims of Estonia as a small member state of the European Union are closely interlinked with the respective ambitions of the EU, having been fixed in EU directives and other regulations. The European Union has decisively committed to ensuring environment protective development.

The ecological tax reform that shifts tax burden from negative taxes for welfare (e.g. employment related taxes) to positive taxes for welfare (e.g. taxes on activities that damage the environment, such as exploitation of natural resources or pollution) is necessary to contribute to solving environment related problems. At the same time, a long-term change in taxation presumes relatively stable income from the environment related tax base.

Estonia has in general fulfilled the environment related tax base stability condition due to the framework of environmental taxes and charges that are periodically adjusted. Environmental taxes and charges, according to law earmarked for financing environmental expenditure (a certain share of pollution and resources taxes goes to the Estonian Environmental Investment Fund), have allowed a relative independence of environmental spending from macroeconomic conjuncture. For

example, the environmental tax rates were raised 20 percent in 2009 on request of the Green Party, despite the economic recession.

Both central government and local sector expenditure on environmental protection in Estonia have regularly increased over the period discussed in the paper and have stayed relatively stable and independent from the fluctuations in the gross domestic product. Particularly remarkable has been the increase in environmental expenditure since 2007, which can be explained by opening of the EU Cohesion Fund resources for the budget period 2007-2013. Remarkable finance of environmental activities (above all sewage and waste disposal) from EU structural funds also explains the growth of government sector environmental expenditure in the period when the gross domestic product declined.

To sum up, the growth and stability of environmental expenditure in Estonia are based on a carefully thought out and regularly adjusted system of environmental taxes and charges, and the allocation of the tax proceeds for environmental expenditure is provided by law. Local and central government sector expenditures on the environment are increased by a significant amount of foreign aid from the EU structural funds, which are used mainly for water supply and waste disposal related environmental investments, as well as for nature protection expenditure. As a co-effect of various measures, Estonia has managed to preserve stability of environmental expenditure.

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# THE NEED OF MUNICIPAL FISCAL EQUALIZATION REFORM IN ESTONIA<sup>1</sup>

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## Abstract

Estonian municipalities have to perform a broad range, while their fiscal resources are often limited in comparison to functions and large disparities in fiscal capacity prevail among them. Moreover, the power to regulate fiscal affairs is mostly in the hands of the central government. Municipalities do not possess satisfactory development planning perspectives. In particular municipalities in the North-East region and South Estonia have experienced considerable fiscal stress. We discuss how a strict application of the connexity principle can protect municipalities from the fiscal bottleneck. We also recommend the introduction of the principle of parallelism and investigate its effects on the down-flow grant system in Estonia. The procedure of determining the total sum of block grants needs to be changed. In most cases a high degree of parallelism applied when providing the unconditional grant via the equalization fund improves the fiscal stability and predictability of Estonian municipalities.

**Keywords:** fiscal equalization, municipal finance, connexity, principles of parallelism, Estonia

**JEL Classification:** H27, H70, H77, R10

## 1. Introduction

After a phase of transformation leading to a functioning private sector economy and the separate establishment of a public sector, a period of consolidation for the public sector is needed in new market economies. Estonia comprises a central government and municipalities as the sub-national jurisdictions.<sup>3</sup> In part as a consequence of rather unbalanced regional development, the fiscal capacity gap among municipalities has gradually increased in this country during the last decade.

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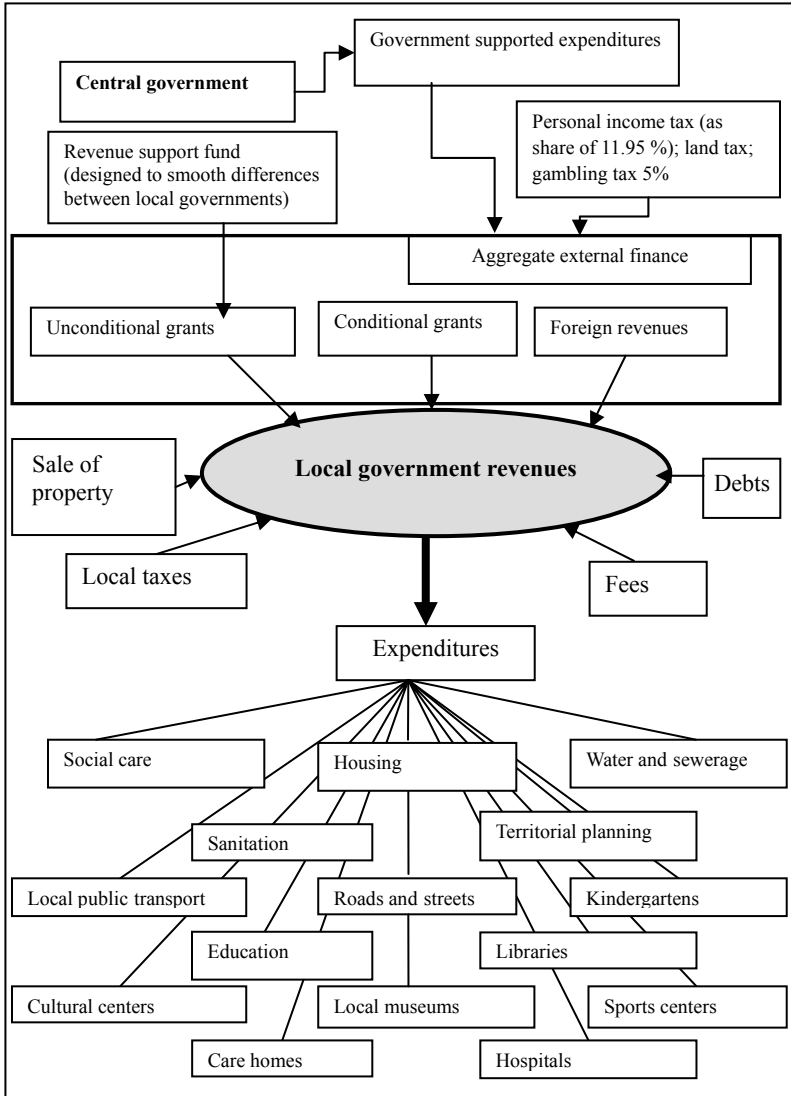
<sup>3</sup> In Estonia, the municipalities consist of the cities (towns) and rural municipalities. In some cases the towns and their rural hinterlands form a mixed town-rural municipality.

In Estonia all municipalities have to perform a broad range of functions (see Figure 1), even though their fiscal resources are often seriously limited. In order to provide them with better chances in a fierce regional competition process, a more equitable financial endowment appears to be desirable as an initial condition for further local economic development. In addition new task requirements have to be met within the framework of the European Union, which in many cases are related to the minimum provision of infrastructure services for which the municipalities are responsible according to the Estonian constitution. Moreover, this fact bears some conflict potentials because the power to regulate fiscal affairs (concerning e.g. conditional grants and/or the size of the equalization funds for unconditional grants) is mostly in the hands of the central government, while the regulatory competence of the municipalities has remained rather weak. Therefore, among other issues, a well-functioning fiscal equalization system should be developed to encourage the local efforts to achieve fiscal balance, to improve fiscal autonomy and to support the public activities of municipalities. In particular, a more stable and predictable vertical equalization system appears to be urgently necessary in Estonia.

This study primarily aims at dealing with the following research topics:

- (1) How has the existing Estonian vertical equalization system developed? What are its regional implications, strengths and weaknesses?
- (2) Should the connexity principle and the principle of parallelism be chosen as the basis of reform?
- (3) How should the block grants (unconditional grants) be determined considering fiscal need and fiscal capacity indicators, and how could the principle of parallelism be introduced in this context?
- (4) What are the effects on revenue changes that are led by the implementation of the parallelism for municipalities?
- (5) Can we expect more balanced fiscal development of municipalities when applying the reform proposal?

This paper is structured as follows. After this introductory part, the first question is tackled in the second section. Information about the characteristics and problems of Estonian fiscal equalization is provided there as well. The application of basic principles as the reform recommendations and results will be discussed in the third section. The final section briefly summarizes the major findings of the paper and discusses the anticipated consequences of the reform and concludes.



**Figure 1.** Functions and finance sources of municipalities in Estonia. (Reiljan, Ramcke, Ukrainski 2006)

## 2. Estonian Fiscal Equalization System

In Europe the parliament of a country generally has the obligation to provide the country's municipalities with sufficient financial resources to be used at their discretion within the framework of their powers. In addition, the need to protect financially weak local authorities calls for the fiscal equalization procedures which, however, do not diminish the discretionary powers of local authorities to perform their tasks of self-administration. In Estonia, local government's responsibility areas are determined by the Local Governments Organization Act (KOKS, RT I 1993, 37, 558). Yet, the functions of local governments are not always explicitly described. According to a survey conducted by the Ministry of Internal Affairs, local government responsibilities have already been regulated in the mid-1990s by almost 450 different laws and legal acts that had assigned over 400 different tasks.

The main functions of Estonian local governments are explained in a systematic way in Reiljan et al. (2006). Estonian local government functions are relatively similar across counties (see Figure 1) but their fiscal strength greatly differs from one municipality to another. The share of *tax revenues* of all municipal revenues<sup>4</sup> comprises approximately 47% of the total revenue of Estonian municipalities. Harju County leads the ranking with the share higher than 55%, followed by Tartu County representing the share equal to the Estonian average. In South Estonia, the value only amounts to 32 to 34%. In approximately half of all counties, tax revenues make up around 41 to 43% of total municipal and town revenues. The major source of the Estonian municipal tax revenue is personal income tax.<sup>5</sup> The disparities between the share of per capita personal income tax receipts in municipal budgets in different Estonian counties and its Estonian average have become more apparent during the period 1997-2006. In Harju County, the share of per capita income tax receipt was around 36% higher than the Estonian average in the period of 1997-2002, while its excess amounted to 31% of the Estonian average for the period 2003-2006. The economic recession in Ida-Virumaa led to a drop of income tax receipts level from 73% in the period 1997-2006 to 66% of the state average during the period 2003-2006. The counties in the eastern and southern parts of Estonia have experienced the lowest income tax receipts per inhabitant. The income tax share of all municipal revenues differs between the counties but its level presently reaches around 35 to

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<sup>4</sup> This relation is used to describe the fiscal autonomy (De Mello 2000).

<sup>5</sup> Until 2002, 56% of all income tax collected was given to the municipalities and 44% to the central government. During last years, the major tax policy objective was to reduce direct taxes and replace them by indirect taxes in Estonia. The personal income tax rate has been gradually reduced from 26% to 21% (from 2004 to 2009). Consequently the municipal share of income tax amounted to 11.4% of gross income in 2004, while the share grew to 11.9% in 2009. All tax allowances, e.g. for interest rates, costs for education and private retirement savings, are made from the central government's portion of income tax, which was 14.6% of gross income in 2004 and 9.1% in 2009. Because of the fiscal problems related to the central government budget the reduction of personal income tax rate was stopped in February 2009. As a consequence of central government budget crisis the share of municipalities was reduced to 11.4% by parliament, whereas the central government's share increased to 9.6%.

38% in the majority of Estonian counties. Analogously the share of other taxes<sup>6</sup> of all municipal revenues also differs from one county to another.

The share of *self-revenues* (including shared taxes, sales, rents and interests received) of total municipal revenues also varies considerably in Estonia. For example, its share comprises approximately 80% in Harju County, whereas in South Estonia the share has remained at the 41 to 43% level. In most counties, the share makes up 50 to 55% of their total revenues. The regional dispersion of municipal self-revenues, total tax revenues and income tax revenue (per inhabitant) decreased in years 2003-2008 in comparison to years 1997-2002 (see Table 1).

**Table 1.** Regional dispersion of municipal self-revenues, tax revenues and personal income tax receipts per inhabitant compared to the national average for the periods 1997-2002 and 2003-2008

	Self-revenue 1997- 2002	Self-revenue 2003- 2008	Tax revenue 1997- 2002	Tax revenue 2003- 2008	Personal income tax revenue 1997-2002	Personal income tax revenue 2003-2008
National average dispersion*	28.38	24.04	26.92	23.80	27.83	22.89

\* Measured in terms of deviations from national average weighed by population share of counties.

Source: Authors' calculations.

The share of *state budget grants* of total municipal revenues increased remarkably, from 25% in 1997-2002 to 35% in 2003-2008. Since the equalization fund resources (with the share of approx. 7%) remained stable, this fact in turn indicates that the share of conditional grants grew also steadily, from 18% to 28% in municipal total expenditures. State budget grants are of the greatest importance for municipal budgets in South Estonia, shown by the share amounted to 56-58% in 2003-2008. In Harju County, grants from the state budget made up a substantially lower share of total municipal expenditure, reaching approximately 10% in the period 1997-2002 and 20% in 2003-2008. In the latter period the conditional grants<sup>7</sup> contributed to the increase in the relative revenue level by more than 14% compared to the national

<sup>6</sup> Municipalities in Estonia also collect land tax and they have the right to enforce its rate between 1 to 2.5% on the land value basis. Many municipalities use the right to waive land tax on residential land owned by pensioners for their own use. Land tax in most cases makes up around 2 to 4% of total municipal revenues. Moreover Estonian municipalities have the right to establish local taxes, e.g. gambling tax, land tax, local sales tax, municipal boat tax, advertisement tax, tax for closing of streets, etc. Local taxes on average amount to less than 1% of municipal budgets in Estonia.

<sup>7</sup> The majority is given to municipalities to cover specific conditional tasks – paying comprehensive school teachers' salaries, buying textbooks and making investments, paying social aid, (partially) covering school lunches and supporting the living environment on small islands (see below).



average in five counties, while the drop in Harju County accounted for around the similar extent. The significance of conditional grants on the relative revenue level in rural municipalities and towns in Pärnu and Ida-Viru counties has been quite low.

The share of *unconditional grants (block grants)* of the total volume of central government grants to municipalities dropped from 28% in 1997-2002 to 21% in 2003-2008. The share only rose in Hiiu County (from 18% to more than 25% between these two periods). Despite some reduction, equalization grants accounted for 35% of total grants in Ida-Viru County and 30-31% in counties in South Estonia. The *equalization fund* has been playing a remarkable role<sup>8</sup> for the local finance of more than 90% of all municipalities. Regionally, the importance of the equalization fund varies remarkably. About 17% of total revenues in rural municipalities in counties in East and South Estonia are presently endowed with the equalization fund provisions. The per capita unconditional revenues after the equalization currently vary by 24% on average, with some exceptional cases like 100% in Hiiu County and 76% in Ida-Viru and Valga counties. The effect of equalization fund provisions on unconditional budgetary municipal resources of counties compared to the national average ranges from 24 to 27% in southern Estonia. The impact of the equalization fund on income growth is also remarkable in counties located in eastern Estonia. The *loan capacity* as the relationship between contracted loans and self-revenues has fallen in the majority (around 60%) of counties and risen in the rest share of counties during the last ten years. Many municipalities finance their expenditures, especially investments, by borrowing.

For the fiscal equalization of Estonian municipalities and coverage of expenditure needs with revenues, the central government plays a leading role. According to §154 of the Estonian Constitution, the municipalities which operate independently according to the law, decide and organise all elements of life in the local area. The same paragraph describes the basis for financing these functions as follows: “municipalities can be obligated to fulfil tasks only via law or in agreement with the municipality. Expenses connected with tasks designated to the municipality by law will be financed from the state budget”. So it is clear that the Estonian Constitution does not provide financial autonomy through an independent tax base for the municipalities. The §160 of the Estonian Constitution notes, “...the law will resolve management issues in the municipality and the supervision of its activities” (Eesti Vabariigi põhiseadus 1992).

In the Law of Municipal Financial Management currently adopted by parliament, the Ministry of Finance follows the approach that says the state can intervene in municipal activities, including the prescription of ways how local issues should be

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<sup>8</sup> Deciding over the size of the equalization fund could be seen as a financial instrument for increasing the administrative power of the central government. Less than 10% of all local governments have sufficient self-revenues and they are not dependent on the central government's balancing support. The question arises whether such an equalization amount does not stimulate a municipal dependent mentality and weakens their own attempts for raising their own revenue (for instance supporting entrepreneurship development etc.).

managed (eletuskiri kohaliku omavalitsuse üksuse finantsjuhtimise seaduse eelnõu juurdeseletu 2008). The Ministry of Finance also concludes that the European Charter of Local Self-Government does not exclude the option of control over the rationale of municipal activities, when this is balanced with the importance of interests that need to be protected. Paragraph §9 of the State Budget Law defines the relationship between the state budget and municipal budgets, supporting the ideas given in the Constitution and specifies: “grants from the state budget are passed to the municipal budget via (1) the equalization budget fund; or (2) specific purpose-oriented (conditional) grants”. The equalization funds provide the municipalities with block grants (Riigieelarve seadus 1999).

Paragraph §5 on “Revenues of Budget” of the Law of Rural Municipal and Town Budgets provides a list of municipal revenue sources on the basis of their economic content (Valla ja linnaeelarve seadus 1993): (1) taxes; (2) sales of goods and services (including user charges); (3) (one-time) sales of material and immaterial assets; (4) income from assets; (5) financial supports including foreign aids; and (6) other revenues including fines. The state budget as the source of revenues for municipalities and towns is related to the fifth item of the above list, because remarkable supports can originate only from the state budget in most cases. Paragraph §8 of the same law establishes the options for contracting a loan: rural municipalities and towns can borrow, use capital rent, issue bonds and contract other liabilities.<sup>9</sup>

Conditional grants have primarily been provided in the fields such as salaries for teachers, family doctors, the social tax and unemployment insurance tax connected to those salaries; investments and expenditure connected with the public responsibilities of municipalities according to the law. The objective of is budgetary balance – state budget grants are made in order to “complement budget revenues”.<sup>10</sup> Following §9, there is a support fund in the state budget to cover revenue deficits in rural municipal and town budgets.

The mechanism for verifying the need for budgetary support for rural municipalities and towns given in §4 of this law and in §9 of the State Budget Law seems at first glance to aim at balancing the interests of the central government and the municipalities: the necessary sum to increase local budget revenues will be determined by negotiations between a state institution appointed by the central government and the municipalities or their unions. However, in the case that an agreement is not reached, the size of that sum is determined by the government in the state budget. Paragraph §9 of the State Budget Law says that “the division of resources in the municipalities budget support fund is carried out according to a procedure and in amounts specified by the government”. Uniform criteria for the allocation of (unconditional) equalization fund and conditional grants among

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<sup>9</sup> In the law there are fixed strict restrictions for local borrowings.

<sup>10</sup>“Funding provided in order to increase the local income together with other state budget grants and tax revenues should ensure that the town or rural municipality fulfils its responsibilities as set by the law” (§4 of Valla- ja linnaeelarve seadus 1994).

municipalities have been set by the Ministry of Finance and these are adjusted to the current economic situation every year when preparing the state budget.

Unions of municipalities are weak institutions with only a few officials, and cannot analyse or dispute the rules governing municipal budget supplements or the calculation methods developed by ministries with hundreds of civil servants. Currently, there is no founded method to assess the expenditures connected with tasks legally designated to the municipalities. There is no basis for assessing the different opinions during the negotiations between the central government and the municipal representatives. The specification of investment support has been totally left to the free political choice of the parliament and the central government, which in turn means that the municipalities are directly dependent on the central government's decision. The municipal fiscal autonomy is rather restricted in Estonia.

Further restrictions of fiscal autonomy stem from the potential for the central government to intervene in the performance of local activities, the tendency to include the debts of municipal enterprise in the volume of debts allowed to a municipality and the formulation of need indicators for block grants. In Estonia, several "expenditure needs" criteria are applied: (i) the number of children in two different age groups, (ii) the number of people in the workforce age, (iii) the number of pension-aged people, and to a lesser extent, (iv) the number of people in palliative care as well as (v) the total length of local roads (streets) expressed in kilometres. The choice of such need indicators are mainly under the control of the Ministry of Finance thus increasing dependence of municipalities on the central government. The central government can assist municipalities by increasing the personal income tax rate. However, this policy does not help municipalities under fiscal stress much, since the personal income tax base in the economically distressed areas tends to be narrow. The fiscal conditions of municipal development in Estonia are to a large extent fixed by the fiscal equalization policy of the central government.

Estonian municipalities are generally characterised as being insufficiently funded, having a dependant mentality, struggling to obtain a larger share of the state budget grants and lacking in motivation to find alternative measures for revenue growth (Ulst 2000). In the fast economic growth phase between 2001 and 2007 the fiscal situation of the municipalities gradually improved, but during the current economic and financial crisis the central government of Estonia introduced the shortening of municipal support funds and even cuts of local participation in tax receipts (see Figure 1) to safeguard the central government budget.

A similar situation occurred during the year 2009. The fiscal stress of central government that stems from the economic crises and an extended program of expenditures due to promises to voters lead to a cut of grants by reduction of expenditure indicators shown in table 2 for 2009 and 2010.

At present information and research concerning the 'actual' expenditure needs of municipalities lack in Estonia which can be applied as a basis for equalization purposes when granting the down-flow unconditional transfers. Only a calculation

of normative expenditure based on general characteristics of a municipality exists. However, to specify conditional grants, actual expenditure needs of municipalities should ideally be considered when accounting the size of a conditional grant.

A comparison of municipal fiscal data of EU member states suggests that the situation in Estonia does not much differ from that in other European countries. In particular, two indicators are of interest for the comparison: (a) the financial means available to perform municipal tasks expressed by municipal budget expenditure in relation to country's GDP and (b) the fiscal position in relation to higher governments indicated by municipal expenditure as a percentage of total government sector expenditure. In 2007 the proportion of Estonian GDP (= 8.4%) that the municipalities can use was a quarter less compared to the average value for the EU27 (11.2%).<sup>11</sup> At the same time, in Estonia the share of municipal expenditures of total government expenditures was at the EU average level (= 26.1% compared to the EU27 average of 24.5% in 2007). In Scandinavian countries the share of local government expenditures as a percentage of total government expenditures amounted from 40 to 63%. Compared to other new EU member states Estonia achieves the same ranking with the Czech Republic.

Therefore, the main weakness related to the fiscal stress in Estonia does not primarily concern the size of municipal expenditures – although this could be higher because of the needs for local infrastructure – but the fiscal equalization, the autonomy of municipalities and the regional dispersion of expenditures seem to be in a more serious situation. To reduce these regional divergences, to increase and protect the fiscal autonomy of municipalities, and also to decrease local government dependencies on political constellations in the central government, an improvement of the fiscal equalization system in Estonia appears to be necessary.

### **3. Guiding Principles for Changing Fiscal Equalization**

#### **3.1. The Connexity Principle**

One group of principles that has to be introduced to stabilize the autonomy and competences of municipalities relates to the so-called connexity principle. This principle states that an imputation of a new function or a reallocation of functions from the central government to the municipalities is only allowed if the central government provides the municipalities with the necessary means to perform the function successfully (Zimmermann 1999). In some EU member countries the downward shift of public tasks from a higher government to a municipal level has quite often taken place while leaving the fiscal burden to the municipalities. In addition, the assignments of public activities and their finance formulated in constitutions have also often been unclear in some countries including Estonia. Although the subsidiarity principle has been widely acknowledged as a mechanism to protect the lower-level government and its activities, solely municipal tasks have

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<sup>11</sup> Often there are more than two government levels in the larger countries, and when financing the public activities, the relationships between different government tiers must be resolved within a country (see Lenk 2008).

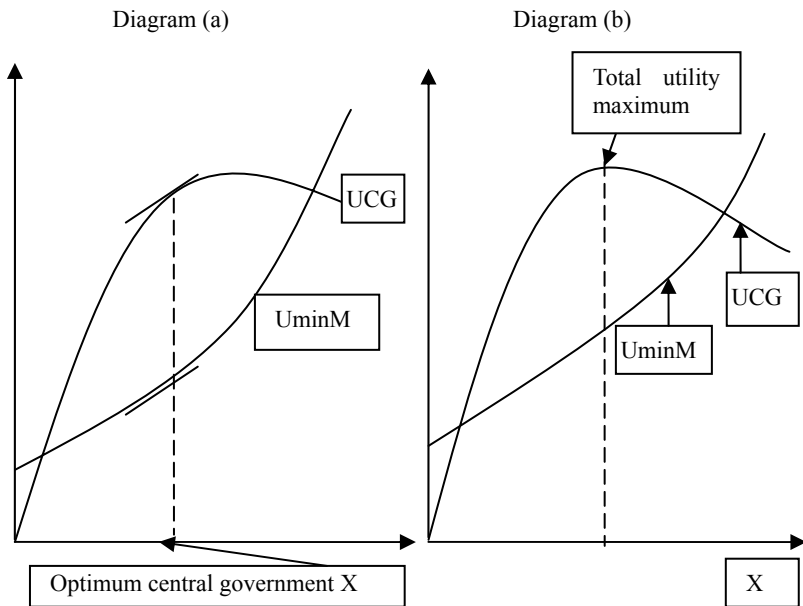
been defined in this context, while the discussion about the ways of safeguarding the municipal fiscal autonomy to finance the assigned local activities has often been lacking.

In some state constitutions of the German Länder the connexity principle is fixed. Consequently the states shifting the tasks to the municipalities should cover the administration costs of these tasks. But it is still controversial to what extent the municipalities should get compensated financially. Sometimes difficulties also arise because municipalities might be unprotected by the federal government which is the case in Germany. In this country municipalities can bring the related disputes only to their own state court. Only in cooperation with the state constitutional court can a case be brought to the federal constitutional court as well. In a rather few exceptional cases the matter can be treated and discussed before a European court. Or – if a connexity principle is formulated under the present conditions in Estonia – the central government has legal possibilities to influence the volume and allocation of municipal expenses and their finance.

Repeatedly, if the connexity principle applies, the central government should take over the administrative costs of the tasks transferred to the local governments. In this context another question arises about the ways how to identify these costs. As municipalities have the organizational autonomy, they are able to determine these costs through the selection of cost assessment, distribution, and calculation methods. Therefore, they can influence the cost estimation process, which would lead to the determination of higher costs that should be then compensated by the central government. Another possibility to be applied would be to assign standard costs. But to what types of municipality should these standard costs refer? It is also questionable whether the municipalities may perform the task transferred to them (as their own activity) in an adequate way. Otherwise the task fulfilment is just an administrative act executed for the central government. Therefore, doubts will emerge with respect to the appropriate costs to be compensated.

A debate on fair costs is likely to end up with a standard cost formulation. In this theoretical framework a vertical principal-agent game between municipalities (as a group or individual municipalities) and the state ministry of finance (as representative of the central government) will take place. There might also be a Nash solution between the negotiating partners, or a powerful central government leaves the municipalities at their minimum utility that is just high enough to execute the local function assigned. This is shown in the Diagram (a) of Figure 2 with the curve  $UCG$  showing total utility of the central government (if it carries out the public activity alone) and the curve  $U_{min}M$  demonstrating the minimum utility of a municipality that gets higher with the level of local service activities  $X$ . The net utility of central government is just the difference between the value of  $UCG$  and  $U_{min}M$  of a service volume  $X$ . The best task performance that the central government can achieve is the point where marginal total utility equals marginal minimum utility of a municipality (Gravelle and Rees 1992).

The standard cost in the sense of central government should be determined in such a way that this solution is achieved. There is a danger that financial means given to the municipalities turn out to be rather small. As a consequence, other self-administrative tasks of the municipalities get hindered or become unfeasible. Another solution would be to maximize the total utility (see the Diagram (b) of Figure 2). In this case the solution will be an activity level where the marginal total benefit becomes zero. With a powerful central government the municipalities can still be kept on their minimum level path, however, the activity level (i.e. the task performance) as the maximum of total utility outcome is higher than that in the case of maximizing total utility minus the minimum utility of the municipalities – see Diagram (a) of Figure 2. Yet the gains between the central government and the municipalities have to be distributed through the definition of standard costs and payments to cover them. In the case of negotiations where the municipalities possess more power, a Nash solution maximizing the product of differences between utility and minimum utility of both partners will be achieved.<sup>12</sup>



**Figure 2.** Vertical principal-agent game between a model municipality and the central government. (Authors' conception)

If risks are considered when deriving a solution, one may better turn to the traditional principle-agent models (Gravelle, Rees 1992). If the central government

<sup>12</sup>  $(UCG - U_{minCG}) * (UM - U_{minM}) \rightarrow \max$ , where UM denotes the utility of a municipality (see also Friedrich, Gwiazda and Nam 2004).

takes risks with respect to the activity results of the municipalities while having information about the amount of local activities, a constant payment just for performance of tasks is the best compensation scheme for the central government. If the activities of the municipalities cannot be detected properly the payment of central government should increase as the activity levels grow.

We argued here in terms of the utility. However, the utility can be expressed differently according to individual goals (such as health, education, environment, transportation, safety, etc.), economic goals like employment, social goals, etc. (Eichhorn, Friedrich 1976). The models should be modified with respect to these various goals to be achieved. For example, the utility can be expressed by employment as a central government goal and ensuring minimum employment in a community as the local goal. There may also be a bundle of goals including political ones where the result depends on different mixes of the goals as well leading to quite different compensations. An indicator of social welfare like net-benefit may be used as well, encountering the difficulty that a nationwide social welfare differs from the local welfare of the citizens of a municipality.

The financial means to compensate municipalities' expenditures related to their activities should ideally be transferred through conditional grants. Funding these functions by block grants, which all Estonian municipalities do not receive, should be limited. Some municipalities would be excluded from the compensation according to the connexity principle.<sup>13</sup> Other communities might minimize the performance of the new or transferred tasks in order to improve the services of pure self-administration by the unconditioned grant.

The character of public activities to be transferred should be determined and described in terms of certain appropriate criteria. A basic research program should be developed to identify such criteria, also referring to some organizational indicators of management capacities of such municipalities, and including the potentials of other types of local institutions such as cross-municipal associations like the FOCJ (Functional Overlapping competing Jurisdiction) to perform such municipal functions (Friedrich, Reiljan 2008). Towns endowed with some special functions in regional and urban planning with regard to environment, tourist centres, water protection, industries, transportation, etc. might be included in the criteria list.

When realizing the connexity concept, some sub-principles related to its legal stipulation should also be kept in mind (Zimmermann 1999; Blankart, Borck 2004;

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<sup>13</sup> The inclusion of 'people in palliative care' to the expenditure need indicators in Estonia since 2006 is related to the fact that the responsibility for this task was handed over from the central government to the municipalities and the equalization fund was increased. Two problems emerged, however. Firstly, for those municipalities not receiving a share of the equalization fund, their legitimate right to obtain extra financial means for an additional task is being violated. Secondly, resources intended to fulfill a certain task cannot be connected with the equalization fund principle.

Friedrich, Gwiazda, Nam 2004). First of all, the connexity principle should be formulated in detail in the constitution and adequately considered in laws related to the intergovernmental fiscal relations between the different government tiers. Its consideration should be then enforced through the cases and decisions of the constitutional court of Estonia. A specification of the connexity principle has to deal with EU tasks or central government tasks that are under the direct control of the EU. It might be stipulated that the EU itself or the central government has to compensate municipalities. The compensation scheme for task transfers and fiscal assistances should also consider the subsidization schemes laid down in laws or general decrees. These measures could also be accompanied by strengthening municipalities' political power by providing a wider scope of local decision making competences in negotiations concerning the vertical public task transfers (Friedrich, Gwiazda, Nam 2004).

### **3.2. The Principle of Parallelism**

The vertical fiscal relation between central government and municipalities is a crucial issue in Estonia. The amount of financial grants addressed to the individual municipalities depends on the total sum of money devoted to such intergovernmental transfers. This is called the equalization fund in Estonia. There should be a law defining the conditions for the content and size of the equalization funds. This has to express general rules of equalization funds formation whereas individual conditions could be fixed in a yearly fiscal equalization law. That means that the financial sources for this purpose should be stated as a percentage share of specified revenues of the central government, and in addition concerning public debts incurred by the central government. The relationship between block grants and conditional grants should leave a minimum share for block grants. However, the volume of the equalization fund should be in line with the principle of parallelism.

We suggest the implementation of Saxon style principle of parallelism between the central government and the municipalities in Estonia. It says that the development of disposable municipal revenues should be in parallel with the central government's disposable revenue. In order to safeguard the finance of self-administration in municipalities there should be a parallel development of own resources of central government and of municipalities. Politicians are obliged to consider such a parallelism when they determine the equalization funds for block grants. Exemptions from this principle should only be allowed according to the specifications in the law concerning war, epidemics, deep economic crises, natural disasters, serious demographic difficulties, etc. A crucial problem to be solved is the definition of relevant own disposable revenues. To define disposable revenues one may turn to the cash flow that is at the disposal of central government or at the disposal of municipalities. Such a cash flow which is used in Germany to measure the fiscal possibilities and situation of municipalities refers to all revenues minus the inevitable expenses of the municipality. This indicator is named "free top (*freie Spitze*)". For the central government, an additional question also emerges, whether down-flow grants to municipalities become part of the inevitable expenditures of the central government or not. As they are not available to the central government they



should be deducted. The central government of Estonia receives tax revenues from own taxes, shared taxes, payments from the EU, revenues from fees, sanctions, borrowings, sales of state property, dividends of central state enterprises, 25% of customs duties and other revenues. Yet the customs revenues are exclusively transmitted to the EU. Service fees are formed primarily according to the cost coverage and benefit principle. Since they mostly do not increase the financial scope of the central government, they should be excluded as well. Profits received from the Estonian central bank should be included (see Friedrich, Ramke 2007).

Again for the municipalities, tax revenues consist of their own resources as well as revenues from concessions. Dividends of municipal enterprises can be included in the own resource criteria, too. Payments of sanctions to the municipalities increase also the own fiscal resources. Unlike the conditional grants, the block, unconditional grants increase the own financial revenues. Revenues from fees, public debt and property sale should be excluded as already mentioned above. Donations by private individuals that are not related to the additional municipal expenses can be added, too. If they are linked to additional expenses, e.g. construction or renewal of a building to host an art collection, the net fiscal inflow may also be added.

In Estonia a formula for the intergovernmental fiscal equalization exists already. The formula for calculating the amount of the down-flow subsidy ( $T_n$ ) aimed at supporting the achievement of local governments balance can be expressed as the difference between the normative revenue and the expenditure levels:

$$T_n = (ak - an) * 0.9$$

where:

- $an$  means the normative level of revenues from personal income tax, land tax and charges for the use of natural resources that go to the budget of a local government unit in a given budget year<sup>14</sup>;
- $ak$  denotes the level of normatively calculated demand for payments (costs) of a municipal budget in a given fiscal year<sup>15</sup>; and
- $0.9$  indicates that block grants have to cover 90% of the difference between the normative revenues and normative expenditures.

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<sup>14</sup> The normative municipal revenue level (i.e. the capacity indicator  $an$ ) is the product of the following three local revenue data: (1) personal income tax receipts for the last three years, which is multiplied by the income tax accounting growth rate coefficient (i.e. two thirds of the average coefficient of income tax growth for the last two years); (2) accounting land tax sum, using the land tax rate of 1.25% (the municipality can establish the land tax rate within a range between 1 to 2.5%); and (3) prognosis of received charges for the use of natural resources.

<sup>15</sup> The normative level of municipal budget expenditures (i.e. the needs indicator  $ak$ ) is calculated by multiplying cost formation indicators with the cost coefficient connected with the indicator unit. As a cost formation basis the following indicators are viewed: (1) the number of 0-6 years old children; (2) the number of 7-18 years old children; (3) the number of 19-64 years old workforce; (4) the number of 65 years old and older; (5) the length of roads (streets in km); and (6) the number of people in palliative care.

The calculation of the normative expenditure demand in municipalities involves a process of harmonizing two dimensions. On the one side, the forecasted level of municipal revenue from taxes and charges on the use of natural resources is found using the above mentioned self-revenue sources. On the other side, negotiations between the central government and the municipalities result in a political decision reflected in the State Budget Law about the size of equalization fund which is designed to help reduce municipal and town budget deficits in the corresponding budget year.

For the individual municipalities the calculated normative revenues are firstly compared to the normative expenditure needs, and then the negative results (i.e. the revenue deficits) are added together for all municipalities suffering from the fiscal stress. The total sum of municipal revenue deficits will be then multiplied by the factor 0.9 and the outcome of this computation should be the same as the sum of the equalization fund politically set. Formally expressed, the revenue deficits for covering the normative costs of all rural municipalities and towns are compensated via the central government grants by exactly 90%.

Table 2 depicts a thorough modification of the expenditure coefficients in 2004: those for the indicators like '7-18 years old children', '65 years old and older' and 'volume of roads' increased while those for others declined. Since 2005 expenditure coefficients increased gradually for all the need indicators. When calculating the growth rate of the expenditure coefficient, the normative municipal revenue growth has been taken into account so that the equalization fund would cover exactly 90% of the normative revenue deficit.<sup>16</sup>

Once again one should note that this is solely an equation applied for the entire sum of equalization fund among municipalities and it does not deal with the actual expenditure demand and revenue surplus or the deficit assessment problem. Less than 10% of all municipalities – mainly from Harju County (including the capital Tallinn) and Ida-Viru County (rural municipalities with high receipts from oil shale mining) – have their normative revenues higher than their normative expenditure needs. Those municipalities are left out of the division of the equalization fund.

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<sup>16</sup> When using the equalization fund to cover 90% of the municipal or town normative revenue deficit, the task of unifying the financing for public sector services is fulfilled quite well.

Assume that there are two municipalities and the normative revenues of the first municipality cover 90% of the normative expenditure demand whereas the coverage share amounts to 50% for the second municipality. By the given 90% equalization coefficient, the first one gets 9% compensation from the equalization fund and the other gets 45% of the normative expenditure demand. After such an adjustment, the coverage rate of the normative expenditures increases to 99% for the first municipality and to 95% for the second.

**Table 2.** Expenditure coefficients per expenditure indicator unit used for municipal normative expenditure level assessment (in thousands of kroons)

Expenditure indicators	Expenditure indicator expenditure coefficients (in thousands of kroons)									
	2003	2004	2005	2006	2007	2008	2009*	2009**	2010	
0-6 year old	13.228	8.422	9.473	10.727	13.146	15.282	17.391	16.149	16.52	
7-18 year old	2.231	6.698	7.533	8.530	10.454	12.152	13.829	12.842	13.137	
19-64 year old	4.973	2.818	3.170	3.590	4.330	5.033	5.728	5.319	5.441	
65 years old and elder	3.302	4.094	4.605	5.214	6.290	7.312	8.321	7.726	7.904	
volume of roads (streets)	4.264	29.103	32.734	37.065	44.710	51.973	59.145	54.921	56.184	
people in palliative care			-	7.000	8.444	9.816	11.170	10.372	10.372	

\* Expenditure coefficients in regular central government budget enforced in December of 2008.

\*\* Expenditure coefficients in central government "crisis budget" enforced in February 2009.

Source: Ministry of finance adjustment fund calculations 2003-2010, collected by authors.

The parallelism has not yet been considered in Estonian fiscal equalization system because: (1) the total sum of block grants determined annually has been the result of political decision of parliament about the state budget; and (2) the central government has changed the relations of the expenditure coefficients and, by doing so, also the expenditure level assessment of the individual municipalities.

Friedrich *et al.* (2004) have shown how in Saxony the principle of parallelism is integrated into the model of vertical fiscal equalization between the state and its municipalities. Analogously, the concept of parallelism concerns the municipalities' disposable income  $EG_t$  and the provided intergovernmental transfers (by the central government)  $SZ_t$ . The disposable revenue by the central government is  $EL_t$ . From this disposable income we deduct the down-flow grants from the central government to municipalities  $SZ_t$ . The size of the intergovernmental transfers is fixed in the period of zero ( $t = 0$ ) at a certain percentage share of the disposable income of the central government (see also Nam, Parsche, Steinherr 2001).

$$\frac{EG_t + SZ_t}{EG_{t-1} + SZ_{t-1}} = \frac{EL_t - SZ_t}{EL_{t-1} - SZ_{t-1}} \quad (1)$$

The size of parallelism can be expressed by

$$(EG_0 + SZ_0)/(EL_0 - SZ_0) \quad (2)$$

The rearrangement of equation (1) leads to

$$SZ_t = EL_t \cdot \left( \frac{EG_{t-1} + SZ_{t-1}}{EG_{t-1} + EL_{t-1}} \right) - EG_t \cdot \left( \frac{EL_{t-1} - SZ_{t-1}}{EG_{t-1} + EL_{t-1}} \right) \quad (3)$$

and analogously

$$SZ_t = EL_t \cdot \left( \frac{EG_0 + SZ_0}{EL_0 + EG_0} \right) - EG_t \cdot \left( \frac{EL_0 - SZ_0}{EL_0 + EG_0} \right) \quad (4)$$

If equation 4 is used to account the block grants for Estonian municipalities we achieve the results in Table 3.

The first attempt refers to the year 1997 as a base year. Column (3) of Table 3 shows the actual block grants and column (9) the block grants under the parallelism. The results reveal that under the parallelism conditions of 1997, the block grants paid would have been lower than the actual ones. However, since 2002 the block grants under the parallelism would have been considerably higher than the actually paid

ones. In 2008 the economic recession tended to affect the municipalities seriously. As shown in column (10), similar results are also obtained if the conditions of 2002 are used as reference for the parallelism. Under the parallelism both levels of governments are gaining from a prosperous economic development and *vice versa*. Until 2009 the yearly actual total block grants  $SZ_t$  were determined in Estonia as a result of parliament decision about the central government budget. Under the prevailing conditions a paternalistic central government can protect the municipalities but also expand its influence on the costs of municipalities. As table 3 shows sometimes the municipalities can be better off if central government fixes the block grants. However, the parallelism solution gives the municipalities a larger scope of autonomy to perform their own tasks if block grants and referring tasks are strictly separated from the conditional grants: The latter ones should be paid only to finance the transferred local tasks and to support some self-administration tasks which seem to be important from the central government's point of view.

The parallelism can also be integrated into the Estonian block grant assignment system as well. The block grants of a municipality  $i$  at year  $t$  amount to

$$SZ_{it} = (ak_{it} - an_{it}) * 0.9, \text{ if } ak_{it} > an_{it} \text{ and } 0 \text{ if } ak_{it} < an_{it} \quad (5)$$

For the total sum of block grants must hold:

$$SZ_t = (\sum_j ak_{jt} - \sum_j an_{jt}) * 0.9 \quad (6)$$

Therefore

$$SZ_t / 0.9 + \sum_j an_{jt} = \sum_j ak_{jt} \quad (7)$$

For the municipality  $i$  we obtain:

$$SZ_{it} = (SZ_t / 0.9 + \sum_j^{n-i} an_{jt} - \sum_j ak_{jt} - an_{it}) * 0.9 \quad (8)$$

We may introduce the parallelism according to equation (4):

$$SZ_{it} = 0.9 * [\{EL_t * (EG_0 + SZ_0) / (EL_0 + EG_0) - EG_t * (EL_0 - SZ_0) / (EL_0 + EG_0)\} / 0.9 + \sum_j^{n-i} an_{jt} - \sum_j ak_{jt} - an_{it}] \quad (9)$$

**Table 3.** Calculations of the parallelism for block grants in Estonia

	EL – Central government disposable revenues (million kr) (1)	EG – Local government disposable revenues (million kr) (2)	SZ Block grants sum (million kr) (3)	EL + EG (4)	EG + SZ (5)	EL – SZ (6)	(EG+SZ) / (EL+EG) (7)	(EL-SZ) / (EL+EG) (8)	SZ parallelism 1997 (million kr) (9)	SZ parallelism 2002 (million kr) (10)
1997	<b>13660</b>	<b>3441.4</b>	<b>704.79</b>	<b>17102</b>	<b>4146.2</b>	<b>12955</b>	<b>0.2424</b>	<b>0.7576</b>		
1998	14952	3956.2	695.69	18908	4651.9	14256	0.246	0.754	627.9	
1999	14679	4155.1	736.8	18834	4891.9	13942	0.2597	0.7403	411.08	
2000	16342	4213.3	866.5	20555	5079.8	15475	0.2471	0.7529	770.16	
2001	18018	4636.5	951.8	22654	5588.3	17066	0.2467	0.7533	855.9	
<b>2002</b>	<b>21018</b>	<b>5246.8</b>	<b>1153.3</b>	<b>26265</b>	<b>6400.1</b>	<b>19865</b>	<b>0.2437</b>	<b>0.7563</b>	1121	
2003	23965	5595.2	1150.4	29560	6745.6	22814	0.2282	0.7718	1571.5	1607.9
2004	26402	6309.3	987.83	32712	7297.1	25414	0.2231	0.7769	1621.5	1661.8
2005	30492	7144.6	1000.5	37636	8145.1	29491	0.2164	0.7836	1980.2	2026.5
2006	37268	8777.8	1143.8	46046	9921.6	36124	0.2155	0.7845	2385.9	2442.6
2007	46098	10974	<b>1430</b>	57072	12404	44668	0.2173	0.7827	2862.5	2932.8
2008	42737	12837	<b>1347.2</b>	55574	14184	41390	0.2552	0.7448	636.73	705.17

Note: 1997 and 2002 are reference years for the parallelism.

Source: Authors' calculations.

As is the case with the existing system, the cost coefficient and the total fund sum for block grants are determined in this context. The relation of cost coefficients – not their absolute values – should be fixed and the block grants funds should underlie the parallelism. Then the amount of block grants for a municipality is determined by its own indicator structure, the total block grant funds, the need indicators of other municipalities, the sum of all fiscal indicators and its own fiscal capacity indicator. The cost coefficients vary, but the relation between them remains unchanged. Factor 0.9 is given. Therefore, all municipalities in financial need get the same percentage of normative budget deficit equalized.

#### **4. Consequences for Fiscal Equalization in Estonia**

There are several principal implications of the parallelism as a measure to strengthen the fiscal autonomy of municipalities. The parallelism is based on the idea that the assignment of tasks between central government and municipalities should be stable or is expected to be stable. Estonia has to overcome difficulties as the public sector is still in a transformation process. The wish to provide the municipalities with a high autonomy degree conflicts with the practical experience in the country where politicians like to lead and manage its economy and public sector in terms of *ad hoc* intervention. Therefore, some changes in task performance of municipalities are caused by the fiscal interference of the central government. This would be reduced if a certain level of stable parallelism constant exists. One also has to admit that a small country has to cope more often with political, economic and social crises, epidemics, etc. and reactions to them that cannot be much controlled because the causes of such developments are originated abroad.

Moreover, there are political, economic and public management goal conflicts among the central government and the municipalities. A mechanism must be formulated for checking and changing the parallelism. A solution might concern a corridor of change by stipulating the upper and lower levels in the constitution. A negotiation procedure might be installed that leads to a Nash solution in a commission where Estonian municipalities have half of the seats and a voting power which equals that of the central government. The commission has to find a solution within a specified time scope. A referee solution should be foreseen if the commission does not come to terms. For constitutionally fixed (rather rare) cases an emergency procedure may be installed. If such institutional solutions are not available, a parallelism constant might be found for a year where the fiscal stress for central government and municipalities was relatively low. In other words, for that year the own revenues for central government and for municipalities should be determined as the so-called benchmarks.

A further problem implies surrounding the ways to fix the specified grants. They should follow the connexity principle and assist the municipalities with respect to investment and municipality tasks which should have the priorities for the entire public sector. However, they should not sweep out the block grants and by this way skip the parallelism. In addition total minimum amounts of block grants should be fixed. A similar institutional arrangement as stated above might be helpful also in

this case. In this way public tasks for which the central government and Estonian municipalities have to perform together can be considered, which include, for example, regional planning, large infrastructure provision etc.

Furthermore, the conditional grants for tasks related to the connexity principle or the assistance of municipalities to perform nationwide important tasks should be fixed at a minimum referring to a base year. It could be a special percentage of all grants of that base year. This amount may grow according to the growth rate of the central government budget. The equalization funds should be determined according to the condition shown in equation (4) after fixing the own revenues and the block grants in a base year. A certain level of parallelism constant can also be introduced in a more normative way as choosing normative own revenues and block grants to get a more favourable solution for the municipalities. Through the implementation of the parallelism those municipalities which are suffering from serious fiscal stress – especially those located in eastern and southern Estonia – would experience significant gains, when the economic situation improves.

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# LIQUIDITY PROBLEMS AND POLICY IMPLICATIONS DURING THE RECENT FINANCIAL CRISIS IN THE BALTIC-SCANDINAVIAN REGION: EX ANTE EMPIRICAL STUDY

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## Abstract

This article provides an empirical examination of the development and determinants of the liquidity position in the financial sector during the past financial crises in the Baltic-Scandinavian region. We look at fiscal and monetary policy implications of the liquidity problems arising in the crisis, using panel data from Datastream and IFS data collection. The results are consistent with the theoretical predictions for a small open economy with the expected sign of changes and developments in common economic indicators. The main finding is that the changes (and the speed of changes) of interest rates, GDP and money supply have occurred relatively fast, meaning that the rising area of the LM-curve has been shorter than theory would predict. Market reactions took place quickly and relatively simultaneously – there was no time for the slow restructuring, thus liquidity needs were higher than generally. The impact of crises on the liquidity position of the financial sector is also studied.

**Keywords:** financial crisis, policy implications, interest rates, liquidity position, stock regulating process, capital flows

**JEL Classification:** G01, G21

## 1. Introduction and the theoretical background

The purpose of this study is to explain how the situation of capital market and the relative structure of financial companies' assets (money supply) are related to the changes in main economic indicators. The study concentrates on the last financial crisis and the preceding period with data used from 1994 to 2009.

The research is related to the theoretical examination of ISLM model on specified areas<sup>1</sup> of the LM-curve, sequence of changes and lengths of phases of the curve. All that has an impact on rational decisions of capital market transactions, resulting in

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<sup>1</sup> LM-curve is probably steady and rising but it is efficient to treat three areas separately. Under the conditions of deep depression, economy can fall into liquidity trap - it is Keynes's area and the curve is quite horizontal. In the case of fast expansion and high interest rates, all money will be used for business transactions and LM-curve will become quite vertical - this is called classical area. The most important is a rising LM-curve when money is used for business transactions and money is also on speculative accounts (Gordon 1994).

the money market moving to the next theoretical equilibrium point. The theoretical sources of the hypothesis are supported by the Law of Say<sup>2</sup> and the Law of Verdon<sup>3</sup>.

One year after publishing the theory of Keynes, John Hicks wrote an article *Mr. Keynes and Classics: Suggested Interpretation*<sup>4</sup> in which he presented a simplified conclusion of Keynes's work. After elaboration by Alvin Hansen<sup>5</sup> and other authors, it became the model of Hicks (ISLM model), which in 1950 won popularity as "Keynesian" economic-theory. Like any other model it is also a simplified version of describing processes in real economy. A reason why this model is still used nowadays is because it is simple (Brown 1997). The main advantage may also lie in the fact that the model includes one of the basic corner-stones of economy, such as money (in this case money as a stock variable, not income as a flow variable), which can be determined when referring to the time of research.

Also the term called stock regulating process<sup>6</sup> is related with the theory of Keynes and the Law of Say, explaining how market economy can head lower than full employment equilibrium despite the fact that all production will be bought (Brown 1997). For developing the stock regulating process, savings and investments should be used, which by nature are also stocks and can be taken as stock variables.

For the management of stock it is important to consider the components of the economic indicators method worked out by Wisley Mitchell and Arthur Burns. According to the method, the US Department of Commerce has come up with a

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<sup>2</sup> According to the neo-classical school of thought, market mechanism is strong enough to overcome the external instabilities and take economy to the state of overall balance. This is a situation where demand equals supply and there is no incentive for a change. For such an opinion to be reasonable, neo-classical economic scientists had to assume that there are enough alternatives in the economy. The centre of neo-classical economic science was law of Say, according to which "supply creates itself demand". In certain markets there may be short-term problems but when prices are flexible enough, the prices of oversupplied products should fall and prices of products with over demand should rise. The essence of the Law of Say is that market economy cannot fall into extensive depression and that because supply creates demand and generally there is no saturation.

<sup>3</sup> Profitability often rises in booming periods. Since the economy is growing, enterprises are increasing their capacities, buying new capital and training new employees - all this increases profitability. Positive relationship between economic boom and profitability is known as the Law of Verdon (Brown 1997: 27)

<sup>4</sup> John Hicks, *Mr. Keynes and the Classics: Suggested Interpretation*, *Econometria*, 5 (April 1997), pp. 147-159.

<sup>5</sup> *A Guide to Keynes*. New York: McGraw-Hill, 1953.

<sup>6</sup> Stock regulating process takes place in the following manner. When companies are producing more than they sell, then stock will accumulate. When stock increases over the wanted level and there is no place where to realize it then an enterprise will stop activities in that direction and will fire employees related to that action (inputs). In the following period, an enterprise can realize at the expense of previously accumulated stock more than it produces in that period. If this process continues, inputs should be increased for the next period to increase production. There is an equilibrium when entrepreneurs realize just as much as they produce and the stock remains relatively the same.

selection of 12 leading economic indicators<sup>7</sup> and most of them are stock variables or indicators describing stock changes. But the standard for measuring the stock level is still money. The aspect of the importance of money has been emphasized by Brunner and Meltzer (1993).

Under the conditions of depression, economy can fall into liquidity trap which is the Keynes's area of the LM-curve when the curve is quite horizontal. The opposite of the situation is the vertical area of the LM-curve, which occurs in booming economy when all money is used for business transactions. In-between there should be a more realistic area of the LM-curve when the curve is rising, meaning that money is divided between bank accounts and business transactions. Theoretically, shifts from the vertical area to the horizontal area should take some time but empirical data shows that time for shifts can be significantly shorter during crisis.

The theoretical models illustrate how important it is to manage stocks in economy and how money is a standard for measuring the stocks with its characteristics like interest rates<sup>8</sup> and volume. Currently we still cannot say that the financial and economic crisis that has spread all over the world has ended. Thus, this paper acts as an *ex ante* study of the consequences of financial crisis for the money market, more precisely arising liquidity issues and policy implications of problems faced in the crisis.

We approach the problem from a LM-curve based theoretical background and take an indirect approach by studying economic indicators to see the shift between the booming area in the LM-curve and the crisis area. We study how the level of overnight interest rates has fluctuated in the viewed Baltic countries (Estonia, Latvia and Lithuania) as well as in the Scandinavian countries (Finland, Sweden and Denmark). In the LM-curve framework, interest rates are more easily observable than the demand and supply quantities at different interest rate levels. Thus, data availability problems dictate our indirect approach by looking at different relevant economic indicators and drawing mostly qualitatively explained conclusions from the time series and cross sectional differences of the economic indicators within the used sample.

The sample has been chosen since it enables to take a simultaneous look at three small open economies (namely the Baltic States) and see whether and how much can

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<sup>7</sup> Those 12 leading indicators are as follows: (1) average hours of work week in processing industry; (2) new requirements from employees for securing employment; (3) new orders for consumer goods at constant prices; (4) sales intensity; (5) starting a new business (net); (6) contracts and orders for factory equipment at constant prices; (7) new private property floor unit index; (8) stock of goods net change at constant prices; (9) change in price vulnerability; (10) Standard & Poors' stock price index for stocks price level of 500 companies; (11) M2 money supply; (12) amount of unpaid bills in business activity and change in consumption credit (Brown 1997).

<sup>8</sup> Actually there are many interest rates in economic theory: interests on state securities, corporate securities, fixed date deposits, claimed deposits, etc. There is also a difference between nominal and real interest rates. Interest rates can vary in terms of different dates.

the policy makers of those countries can influence the situation from a providing and improving the overall liquidity point of view. At the same time the Baltic States are greatly influenced by the European Union countries as data shows (see e.g. Table 1 and Table 2) especially by the neighboring Scandinavian countries. In the framework of liquidity and money market, the influence is evident due to a fact that most of the major banks in the Baltic States are owned by Scandinavian origin financial institutions.

Although our focus is on money market, we cannot neglect the importance of other economic indicators. From the policy makers' perspective, we have to look at the as complete economic picture as possible. Money market as a fundamental part of the capital market is influential in the investment decision process and is one of the main indicators of the discount rate. The most used value base in the management models in the investment decision process is NPV (Net Present Value), PI (Profitability Index), EP (Economic Profit), EVA<sup>TM</sup> (Economic Value Added) etc. These models are related on the basis of discounted future cash flows and this means that the value depends directly on the discount rate. Accordingly there is a fundamental influence on investment decisions and the assets structure of the companies.

Data used in the empirical analysis comes from two main sources which are Datastream and International Monetary Fund IFS data collection. We use the latest available data. In the case of seasonally unadjusted data, we use seasonal adjustment techniques. For better comparability, we use the average exchange rates in situations where comparing the magnitude of the series across countries is necessary. Data about interest rates comes from Datastream as well as most economic indicators. Data about reserves, foreign trade and investments, as well as data concerning the asset and liabilities structure of financial institutions comes from IFS databank. By assets we mean financial assets in classical terms. Depository institutions are used because commercial banks are the most important participants in money and capital markets in the Baltic States and the influence of other players in this field is still small (Kein 1999).

## **2. Anatomy of financial crises**

When studying the history of financial crises, there are typical characteristics present in the economy that precede the crisis and how economy tends to move out of the crisis. The current section gives a short overview of the anatomy of financial crises mostly based on the study of Reinhart and Rogoff (2009). Financial and economic crises tend to be preceded by fast economic expansion with increasing consumption and booming prices in different real and financial sectors. GDP reaches its largest decline one year after the start of the crisis. Unemployment is regarded as a lagging indicator and starts to decrease during the first or second year of the crisis, not before. There is not a clear trend concerning inflation but depending on the specific broader economic conditions, inflation can still be high during the start of the crisis and start declining thereafter as economic expansion turns into recession. Reinhart and Rogoff (2009) show that there is a very high co-movement in the share of countries having high inflation and defaulting on their sovereign debt. In current

crisis it does not concern the viewed Baltic States but otherwise both external and internal debt problems are common causes of the crisis. Kaminsky and Reinhart (1999) show that usually inflation during domestic debt crisis is clearly higher compared to external debt crisis. As currently rising levels of domestic debt were the drivers of pre-crisis economic growth in the Baltic States, relatively high level of inflation was more expected than it would have been in external (government) debt problems.

Experience from the past crises (Reinhart and Rogoff 2009) show that countries experiencing sudden large capital inflows are at high risk of experiencing a debt crisis. This can lead to over borrowing in good times, leaving countries vulnerable during the inevitable downturns. Banking crises lead to sharp declines in tax revenues. Other factors leading to higher deficits can include the operation of automatic fiscal stabilizers, countercyclical fiscal policy and higher interest payments due to elevated risk premiums and rating downgrades. Government debt rises by 86 percent during the three years following a banking crisis. Those indirect costs are usually larger than the usual bank bailout costs.

There is a high probability of current account balance being negative before the crises as higher consumption and import tend to overpass export. Either by devaluation of local currency or restructuring economy and production, exporting goods starts to pick up during crisis. Thus, weakening currency or devaluation necessity (in case of pegged currencies) are very common artifacts of economic and financial crises.

There are a number of common policy implications that help to avoid the worst outcomes during crisis. Namely, having a complete picture of government indebtedness is critical. Debt sustainability must be based on plausible scenarios for economic performance and is a must factor in the possibility of sudden stops in capital flows. The inflationary risks to monetary policy frameworks seem to be linked in important ways to the levels of domestic debt. Many governments have a temptation to inflate away domestic debt. Using stimulus packages has become widely spread during current crisis but such packages have not been widely used (with some exceptions) during past crises which makes the success and efficiency of such stimulus harder to predict. The following empirical sections try to shed light on the current crisis in the Baltic and Scandinavian countries.

### **3. Empirical study of the crisis**

#### **3.1. Interest rates**

When studying the interest rate co-movement of Baltic and Scandinavian countries, we can see that interest rates of Denmark, Sweden and Finland coincide greatly with Euro interest rates. Although Denmark and Sweden have not adopted Euro, their central banks have lowered the rates in quite a similar manner as the European Central Bank as can be seen from the overnight interest rate (see Appendix A) which follows closely the base rate of the country.

Interest rates of the Baltic States have behaved slightly differently during the crisis. During the period of 2000 to 2007 we can see more volatility especially in Latvian and Lithuanian rates. There has been a remarkable decrease in overnight rates after the end of 1997-1999 crises. As currencies of all Baltic States are principally pegged to euro, central banks of the countries do not have means to directly influence the rate by money supply. Basically policy makers cannot influence liquidity on that level. Still, implications of recent model of Brunnermeier and Pedersen (2009) suggest that central banks can help to mitigate market liquidity problems by easing funding or margin requirements. Even public statements that extra funding will be provided during liquidity dry-ups could help.

The dramatic increase (and also decoupling from Euro rates) of the overnight and also longer term interest rates in the Baltics clearly illustrates the situation where central banks are unable to provide expansive measures, local markets are more influenced by outflow of foreign investments, which has happened after the beginning of 2007. The speed in the change of interest rates has been dramatic. For example it took 20 days in September 1999 for Latvian overnight rate to rise from 3.5% to over 8% and less than 10 days in March 2007 to rise from around 2% to 8%. Such quick changes do not allow the economy to adjust to the changes in interest rates and shrinking money supply.

Appendix B illustrates the situation further. When Scandinavian countries as well as Euro area, on average, have been able to continue to hold more or less stable positive trend in money supply even after GDP levels have started to deteriorate, the same has not happened in the Baltics. Especially Latvia and Lithuania have faced even more abrupt decline in money supply than the dramatic fall in GDP figures. At least till the second half of 2009, Estonia has done a little better.

A classical policy makers approach is to start cutting interest rates in the case of economic downturn to stimulate economy. Another negative consequence is the loss of confidence in the financial system during the crisis<sup>9</sup>. Currently, cutting interest rates is exactly what has happened in the Euro area as well as in Sweden and Denmark, starting from 2008. Interest rates have dropped significantly moving in the same direction as the falling GDP, which we use as a primary proxy for assessing the state of the economy. The same has not been possible in Estonia, Latvia and Lithuania. Interest rates have moved in the opposite direction and thus it should not be too surprising that in addition to the shrinking economy, decreased money supply and increased interest rates have worsened the situation even further.

Although interest rates have been directly uncontrollable by policy makers in the Baltics, the high level of interest rates has partly been also caused by the lack of confidence of market participants in the perseverance of currency pegs and the banking system. It could be argued that injecting confidence in the market

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<sup>9</sup> See Allen and Gale (1998) for more detail who study the optimality of choice regulators and central banks have to make when dealing with the risks associated with crises to avoid bank-runs.

participants as well as preserving a sound economic climate (we mean conditions under which the central government is able to control the level of external public debt and its expenditures) could help to smooth the magnitude of negative speculations towards currencies. On the other hand, although stimulus packages have not been too widely used during the past crises in the world (Reinhart and Rogoff, 2009) (with the not too successful exception of Japan), decreased government expenditures and the lack of external financing options will be decreasing money supply. Thus, policy makers in pegged currency systems can have expansive means on the capital markets basically only when borrowing and spending has been conservative during good times, so that external financing and assurance of stability remain possible during the crisis when the confidence of financial markets has eroded. In crisis the outflow of funds occurs not only from small emerging economies but also from most other countries.

We also look at spreads between short-term (overnight as well as 6-month) interest rates and long-term interest rates (we use 10-year government bonds for that). Tightening of spreads during the crisis epicenter can be regarded as an expected result as short-term interest rates rise higher than long term government bond yields in all countries in the study. Thus changes in long-term interest rates are slightly smoother than in overnight rates. But compared to 10-year rates, short-term interest rates have a clearly stronger impact on current liquidity positions.

### **3.2. Inflation and real interest rates**

By the inflationary levels, Estonia and Lithuania have been in a better position than Latvia. Latvia hadn't seen lower than 5% inflation (we look at CPI) since the beginning of 2004 until the above 10% levels of 2007 and 2008 dropped below 5% in the second quarter of 2009 and have been decreasing since. Inflation rises also above 10% level also in Estonia and Lithuania in 2008. Before that it stayed around 5% level and was increasing since 2007. Pre-crisis years clearly indicate that the Baltics were facing a very high inflationary environment which in turns encouraged to invest (and seemingly for households also to further spend) as much as possible and real interest rates were negative due to the high inflation. In the light of providing liquidity, pre-crisis years attracted foreign inflows of money. When soaring interest rates and inflationary environment turned into deflationary, it discouraged investments as real interest rates were also expected to rise in the light of diminishing inflation (by the third quarter of 2009, only Estonia had shown negative CPI). Such an effect caused a situation where holding money on deposits with minimum risk was rewarded by high real interest rates and investing funds was discouraged by higher risk of investments in a shrinking economy. This caused a situation where more funds were waiting on the sidelines (read: were lying on deposit accounts) than invested into the economy facing outflow of foreign funds at the same time.



### 3.3. Economic growth

We look at GDP as the main indicator of economic health. To make the figures comparable, we calculate GDP for all countries in euro and adjust the time series for seasonality. As Swedish kronor has been the single most volatile currency against euro that has weakened nearly 20% against euro since the first half of 2008, it puts Swedish economic performance in a darker light than it would be measured in local currency.

**Table 1.** Correlation between changes in country GDP in EUR from 2000-2009

	<i>Denmark</i>	<i>Estonia</i>	<i>Euro Area</i>	<i>Finland</i>	<i>Latvia</i>	<i>Lithuania</i>
Denmark	1.000					
Estonia	0.880	1.000				
Euro Area	0.821	0.835	1.000			
Finland	0.891	0.896	0.911	1.000		
Latvia	0.848	0.810	0.906	0.867	1.000	
Lithuania	0.763	0.859	0.822	0.855	0.850	1.000
Sweden	0.804	0.794	0.666	0.838	0.707	0.746

In Table 1 we present the correlation between the GDP (measured in EUR) growth rates of the studied countries since 2000. Viewing longer periods would make the correlation between the Baltic States higher and using local currencies would increase the correlation between Sweden and the rest of the sample. We would assume significant influence by the Scandinavian countries on the Baltic States, as much of the financial sector in the Baltics is under control or direct influence of Scandinavian origin banks.

Indeed, correlation of GDP growth rates is quite significant in all cases. Finland has nearly 0.9 correlation with all Baltic countries, the highest figure with Estonia that is, considering geographical proximity, an expected result. Sweden again has higher correlation with its neighboring countries and slightly lower correlation with Latvia and Lithuania. Although we cannot show causality in those relationships, all countries do seem to have a higher correlation within the Baltic Sea region than with the average Euro area.

When studying the starting points of the economic downturn in the area, we look at time series of GDP in both Euro and local currency. Although Sweden showed quite a stable GDP growth in the fourth quarter of 2007 in local currency, weakening of the kronor decreased the growth to only 0.5% when all other countries (with a minor exception of slowing Denmark) were still near their previous period strong growth phases (especially Latvia and Lithuania). Already the next quarter meant a surprising turn into negative territory for Estonia and Denmark, Latvia followed a quarter later and all other countries in the fourth quarter of 2008. This effectively turned all hopes of soft landing for economy into an ineluctable global crisis that had already suffered significant setbacks earlier in autumn 2008 with the plummeting financial markets and unseen surge of volatility after Lehman Brothers was forced to declare bankruptcy.

As Sweden is the largest economy in the viewed sample, one might expect greater influence from there on the smaller neighboring countries. We can qualitatively argue that the influence of the Swedish financial sector worries was the most evident in Estonia and Latvia. Although Swedish GDP growth stayed quite stable till the fourth quarter of 2008 when looking at the figures in kronor, it was along with Estonia the leading country with slowing and turning negative when considering the framework of EU and looking at GDP figures in euro. We can also see (see Appendix A) that the stock market (which is considered one of the main leading indicators) started to fall first in Estonia and Sweden.

Correlations within countries (see Table 2) between money supply (either M2 or M3) and GDP are strong ranging between 0.82 for Latvia (0.84 for Finland) and 0.93 for Estonia (0.91 for Sweden). The correlation between money supply and interest rates has an expected negative sign (except for Latvia – data problems connected with the availability of money supply data) and falls in the range from -0.22 to -0.52.

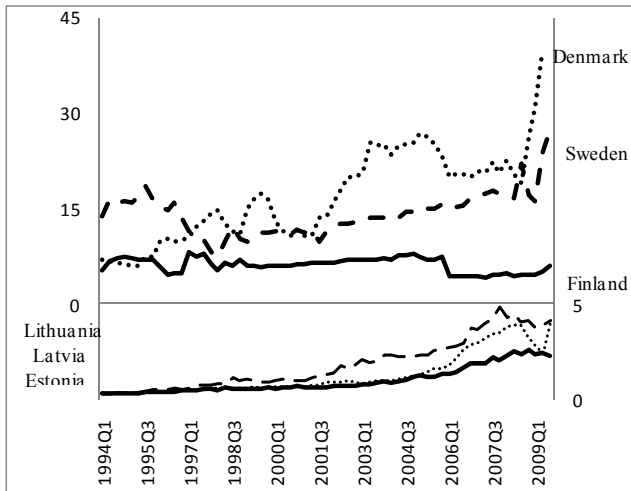
#### **3.4. Reserves, investment position and foreign trade**

The current crisis situation is well reflected also in the international reserves which reflect the monetary policy of central banks. For example the reserves of Denmark more than doubled in less than 6 months starting from Q3 2008 and jumped by 40% in June 2009 for Sweden. The changes have not been so drastic in Finland and in the Baltics with pegged currencies and limited ability to enforce monetary policy, but growing reserves are evident for the whole sample. When comparing international reserves to total depository financial institution assets, the changes in reserves are not as abrupt but can still indicate that piling up the reserves had negative effects on liquidity (and money supply) in economy. In Q2 2009 the reserves amount to approximately 6%, 4% and 2% of depository assets in Denmark, Sweden and Finland respectively, but 12%, 9% and 15% in Estonia, Latvia and Lithuania which have to hold larger reserves due to pegged currencies. Maintaining the reserve level turned out to be a challenge for Latvia due to outflow of foreign funds (Transition Report 2009).

Studying the investment position of the countries shows clearly that in all cases investments start to be pulled out from foreign countries (see Appendix C). This is similar for both direct and portfolio investments when domestic interest rates soar and money supply starts to decline along with the shrinking economy. Scandinavian countries have a larger amount of foreign portfolio investments which should be a clear indicator of more developed financial markets. Baltic countries tend to have less portfolio investments and are dominated by a very large share of direct investments.

When comparing Estonia, Latvia and Lithuania amongst each other, we can see that although Estonian economy is the smallest of those in absolute numbers, it has attracted both the highest number of direct and portfolio investments. In case of economic downturn, those investments start to seek the way out. In case of

disappearing liquidity, this is not an easy task and starts to greatly affect domestic economy<sup>10</sup>. Estonia is the most affected country by the outflow of investments as its dependence on it is the greatest (highest share of foreign investments per GDP in local economy).



**Figure 1.** Boosting of international reserves during crisis. Left vertical axis presents the figures in billion SDR for Scandinavian countries and right vertical axis in billion SDR for Baltic countries.

We can see a clear correlation between fallen stock market prices and decreased value and outflow of foreign portfolio investments. In the sample, it is largest for Finland and Estonia. Unfortunately we do not have data available for Sweden. For Euro area and Scandinavian countries the drop in foreign portfolio investments has been larger than for direct investments. At the same time they have also pulled out (or lost value) their own portfolio investments abroad. As the Baltic States are greatly influenced by those countries, plummeting stock indexes and almost ceased lending activity of foreign owned banks should not be a big surprise in retrospect.

Currently we can only qualitatively argue that the drop in direct foreign investments in Baltic economies can have a longer term negative effect. Generally portfolio investments are more mobile, meaning that they can move in and out of the economy faster than direct investments. The latest available data shows some promising signs for the Baltics as both Estonia and Latvia seem to show the first signs of stabilizing foreign direct investment level in the economy. Due to a high correlation between the Baltic countries, Lithuania can be expected to follow their

<sup>10</sup> See Masso, Varblane, Vahter (2008) and Vahter and Masso (2005) for more detailed study of spillover effects of inward and outward FDI.

lead. The amount of investments abroad is not very high for any of the Baltic countries which can be one of the reasons why foreign investments abroad have not lost relatively as much as Scandinavian countries. On the other hand, Scandinavian countries have been donors for inflow of investments into Baltic States and the fallen Baltic economies have negatively affected their investment values and decisions. Considering the size and correlation of the viewed Scandinavian economies, the drops in foreign investments are probably affected by pulling out portfolio investments from each other's economies and Baltic economies are negatively affected from the outflow of funds initiated by the Scandinavian side.

The inflow of funds to all Baltic States had more than tripled from 2004 till the end of 2007. As presented in the anatomy of crisis section of the paper, such a sudden large inflow of funds can lead to borrowing more than necessary, high inflation and thus can often cause trouble later when the inflow stops or reverses. This is one area where policy makers could theoretically have regulative means to discourage domestic borrowing from a certain level by higher capital requirements. As inflow of foreign investments during good times helps to boost the economy, motivation for policy makers to discourage such inflow is extremely low, resulting in a higher volatility in economy.

As expected, we can see an increasing current account deficit in all the Baltic States during times of booming economy (see Appendix D). At the same time capital account stayed positive. Thus Baltic States have followed a more classical and expected road to crisis than Scandinavian countries, where the changes in current or capital account have not been too noticeable. Both export and import have moved in sync with the GDP and faced significant drops in 2008. A clearly larger drop in imports compared to exports in the Baltics has been very harsh but had some sobering effects on the economies that had obtained their previous growth from consumer expenditure. The positive side of such a drop in imports is that trade balance starts to turn positive, which is necessary to restart the economy, as past crises have shown.

### **3.5. Government and household expenditure and investments**

We look at growth in gross fixed capital formation (GFCF), household and government expenditure compared to GDP growth, which show a high correlation with each other<sup>11</sup>. GFCF both increases and decreases with a larger magnitude than GDP. As could be expected, government expenditure is more rigid and does not adjust to GDP decline as easily as for GDP growth. Government expenditure is one of the few main economic levers that can be directly affected by policy makers' decisions. One of the main problems that should have been an early warning sign for the Baltic States is that starting from 2005 and 2006, household expenditure started to increase much more quickly than GDP. For previous periods as well as Scandinavian countries throughout the viewed period, such a problem didn't exist.

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<sup>11</sup> Data and figures are available upon request.

High domestic household expenditure growth in the Baltics was also one of the main sources of inflation during the pre crisis period.

### **3.6. Depository institutions' balance sheet structure**

We look at how the structure of depository institutions asset and liabilities structure has changed during the period of analysis. Well functioning financial institutions during crises is one of the most critical aspects for providing liquidity during the crisis, as disruptions in the banking system can have a harsh effect on the aggregate economic activity (see e.g. Bernanke 1983). As expected, Figure 2 shows an overall growth in the assets of banks till the second half of 2008 until which the negative effects did not reach the balance sheets of the banking system. After that point the Baltic States and Sweden (which has the most exposed risks towards the Baltics) have faced a slight drop in the assets which is at least partly explained by loan losses.

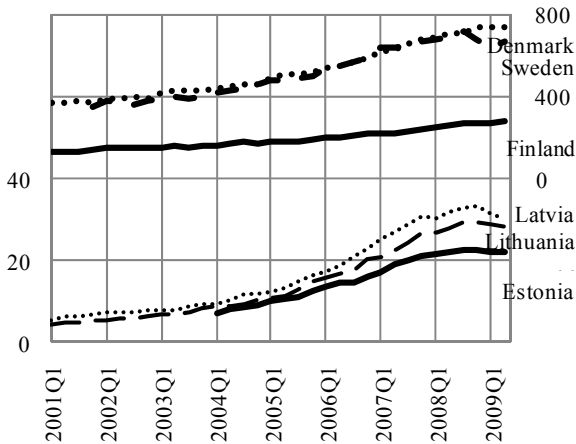
The trend in bank asset structure in the Baltics (see Appendix F), especially in Latvia and Lithuania is that claims on foreigners are decreasing and domestic exposure is rapidly growing. In that sense Denmark and Finland (see Appendix E) have been at quite a stable level but foreign exposure of Swedish banks has been clearly growing since 2004. At least part of that foreign exposure growth can be explained by financing Swedish owned banks in the Baltic States. Claims on the central government have become less and less important in time.

The liabilities side of the bank balance sheets clearly reflects the Baltic States reliance on inflow of foreign funds. Around 40% of liabilities in Estonia and Lithuania and 50% in Latvia are to nonresidents which are in majority loans from parent companies to local banks. In case of economic trouble, such funds can start fleeing the country making the liquidity position even harder which has been especially true for Latvia (see also Transition Report, 2009). Although the liabilities structure does not show a very clear decrease in liabilities to nonresidents during the crisis, we can still observe a slightly shrinking share of foreign money, on top of that assets and liabilities have started to decrease in general. That is empirical evidence that foreign money is flowing out more quickly than the decrease in assets.

A large share of liabilities to foreigners distorts the overall liquidity picture in the Baltics. Leaving the foreign liabilities aside, we can see a slight piling up of liquid assets on deposits searching refuge from real economy and securities investments which have been losing value since the beginning of the crisis. Such an effect is the most evident for Sweden, Finland and Estonia and also supports the picture presented about international reserves.

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**Figure 2.** Assets of depository financial institutions. Left vertical axis presents the figures in billions EUR for Scandinavian countries and right vertical axis in billion EUR for Baltic countries.

Another interesting aspect is the liabilities to central government. That does not play an important role in Estonia but has clearly increased in the other Baltic States and Denmark. This would be one place where government aid packaged to banks would be reflected. It is slightly surprising not to see any noticeable changes here for Sweden in the used data.

#### 4. Conclusions

Empirical data shows that changes in interest rates, GDP and money supply occurred relatively fast and simultaneously, so that it did not give economies much time to adjust. That caused a situation where interest rates in more fragile Baltic economies decoupled from Euro and Scandinavian area and soared to almost previous crisis' heights. This clearly illustrates the situation where central banks of open small economies are unable to provide expansive measures and local markets are more influenced by outflow of foreign investments which started happening after the beginning of 2007.

The correlation of GDP growth rates is quite significant in all cases which is positively connected with geographic proximity. All countries do seem to have higher correlation with the Baltic Sea region than with the average Euro area. Thus, the financial sector worries especially in Sweden, Estonia and Latvia closely influenced each other as Sweden and Estonia were the leading countries with

slowing and negative economic growth. High correlation of GDP and money supply meant that along with soaring interest rates, liquidity on the markets shrank significantly. After the inflow of investments to all Baltic States had more than tripled from 2004 till the end of 2007, the outflow of funds initiated by the Scandinavian side (seen from the data about investment position and consolidated balance sheets of depository institutions) and piling up of international reserves worsened the situation even further in the Baltics.

Experience from previous crises suggests that having a complete picture of government indebtedness is critical and inflating away domestic debt might not be a good idea. In the Baltic States central banks of the countries do not have clear monetary policy means to influence the money supply by interest rates but even public statements of providing extra funding when necessary could help to inject confidence in the financial markets during liquidity crises but only if necessary buffers exist. Buffers could be achieved by government controlling the level of external public debt and its expenditure also during good times. Policy makers in pegged currency systems such as the Baltic States can positively affect liquidity position basically only when borrowing and spending has been conservative enough during growing economy. That could improve the chances for external financing during crisis. Operating in a small and open economy can make policy makers' use of levers less effective due to high dependence on and correlation with larger neighboring economies.

As the economies of the studied region are still under stressed conditions, the current study reflects only an ex ante view, which could be complemented by a more thorough ex-post study that could take into consideration the whole economic cycle.

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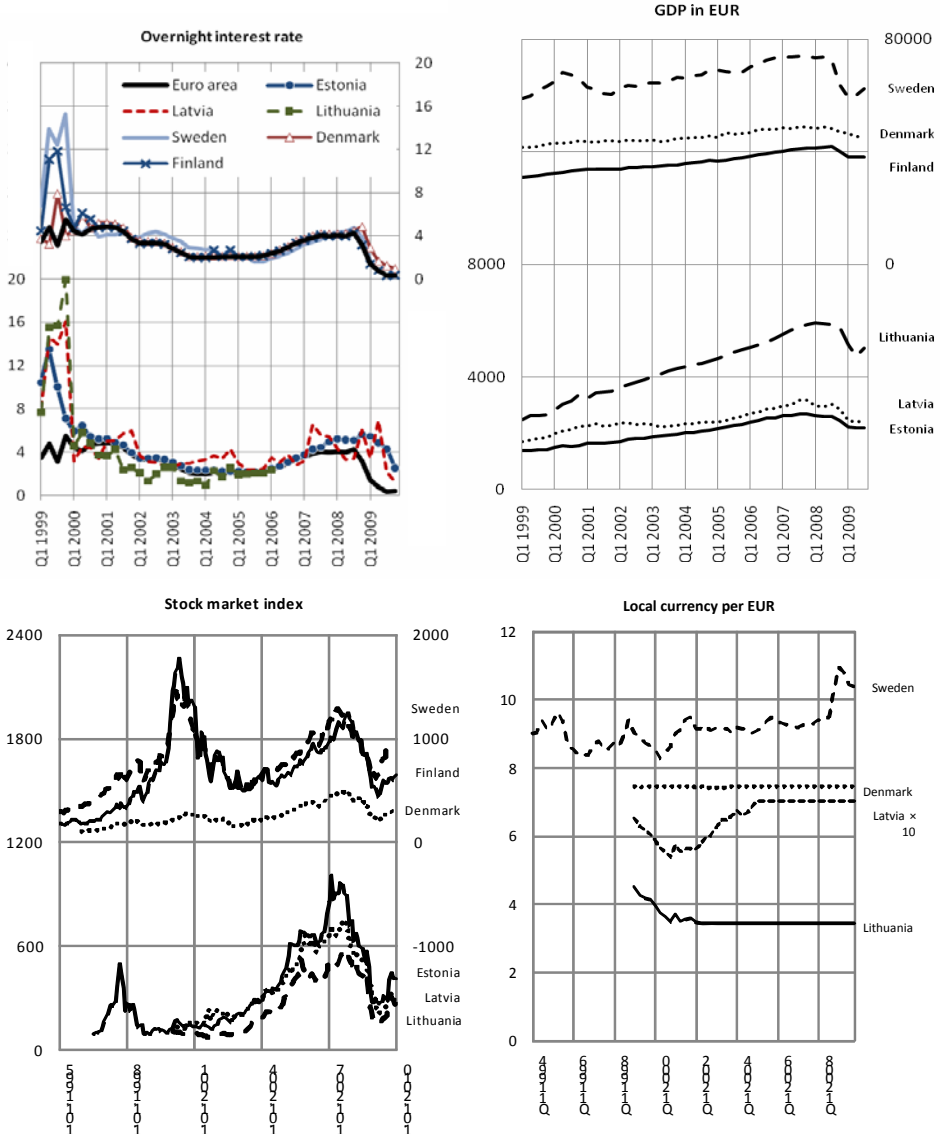
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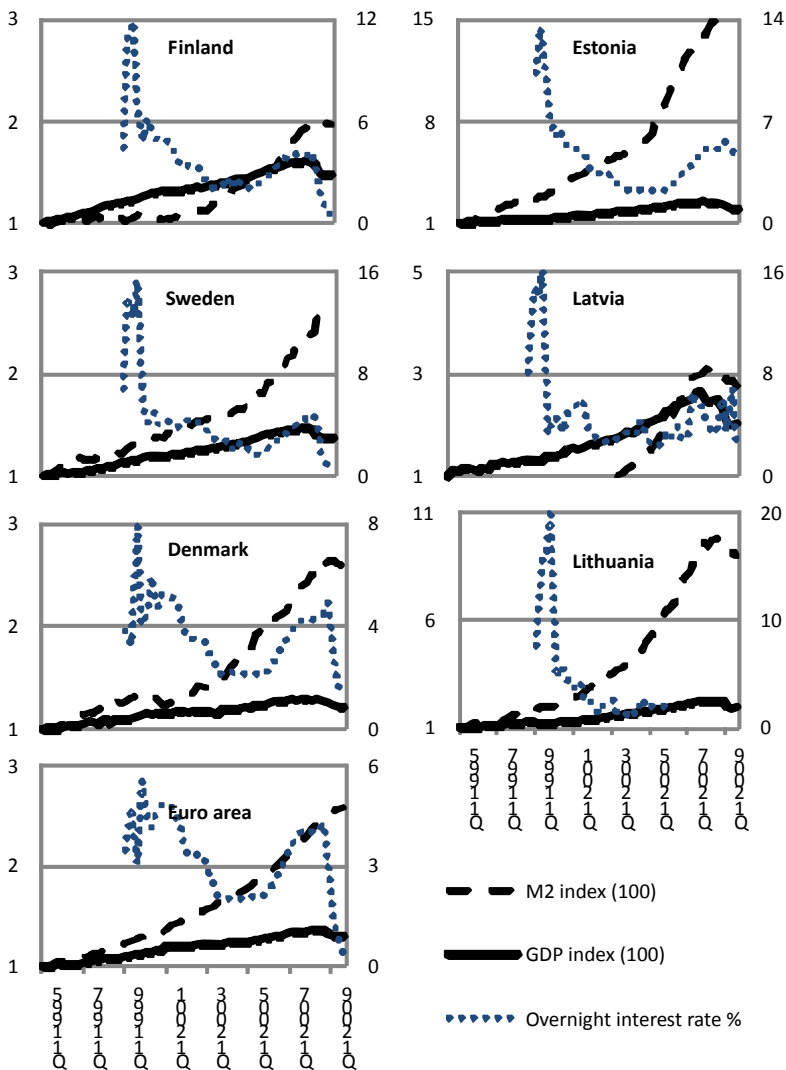
**Table 2.** Correlation matrix of Euro zone, Estonian, Latvian, Lithuanian, Finnish, Swedish and Danish GDP, money supply (M2 or M3) and average overnight interest rates (i) for the period Q1 1995 to Q3 2009

	EUR M2	EUR SKP	EUR i	SWE M3	SWE SKP	SWE i	LIT M2	LIT SKP	LIT i	DEN M2	DEN SKP	DEN i	FIN M3	FIN SKP	FIN i	LAT M2	LAT SKP	LAT i	EST M2	EST SKP	EST i
EUR i	-0.42	0.94																			
EUR SKP	-0.31	1.00																			
SWE i	0.61	-0.59	1.00																		
SWE M3	-0.36	0.91	-0.44	1.00																	
SWE SKP	-0.32	0.99	-0.55	0.91	1.00																
LIT i	0.55	-0.75	0.96	-0.61	-0.63	1.00															
LIT M2	-0.32	0.92	-0.45	0.98	0.93	-0.52	1.00														
LIT SKP	-0.31	0.96	-0.48	0.93	0.97	-0.58	0.97	1.00													
DEN i	0.75	-0.29	0.53	-0.23	-0.31	0.50	-0.25	-0.29	1.00												
DEN M2	-0.36	0.90	-0.42	0.98	0.91	-0.39	0.99	0.95	-0.25	1.00											
DEN SKP	-0.18	0.98	-0.50	0.87	0.99	-0.63	0.89	0.95	-0.21	0.87	1.00										
FIN i	0.67	-0.55	0.87	-0.45	-0.50	0.85	-0.43	-0.46	0.75	-0.42	-0.44	1.00									
FIN M3	-0.34	0.84	-0.41	0.97	0.85	-0.40	0.98	0.91	-0.23	0.99	0.80	-0.41	1.00								
FIN SKP	-0.25	0.99	-0.52	0.90	0.99	-0.66	0.92	0.97	-0.25	0.90	0.99	-0.47	0.84	1.00							
LAT i	0.42	-0.46	0.89	-0.24	-0.42	0.96	-0.28	-0.36	0.43	-0.23	-0.41	0.77	-0.22	-0.40	1.00						
LAT M2	0.50	0.96	0.34	0.93	0.90	0.64	0.99	0.91	0.71	0.97	0.79	0.44	0.94	0.91	0.47	1.00					
LAT SKP	-0.25	0.96	-0.48	0.90	0.98	-0.60	0.95	0.99	-0.26	0.92	0.96	-0.44	0.88	0.97	-0.37	0.82	1.00				
EST i	0.50	-0.48	0.78	-0.18	-0.44	0.81	-0.24	-0.37	0.57	-0.18	-0.43	0.81	-0.15	-0.41	0.78	0.92	-0.39	1.00			
EST M2	-0.31	0.92	-0.45	0.99	0.93	-0.57	1.00	0.96	-0.22	0.99	0.89	-0.43	0.97	0.92	-0.27	0.99	0.94	-0.22	1.00		
EST SKP	-0.31	0.97	-0.54	0.90	0.99	-0.64	0.94	0.99	-0.32	0.92	0.97	-0.50	0.86	0.98	-0.43	0.82	0.99	-0.46	0.93		

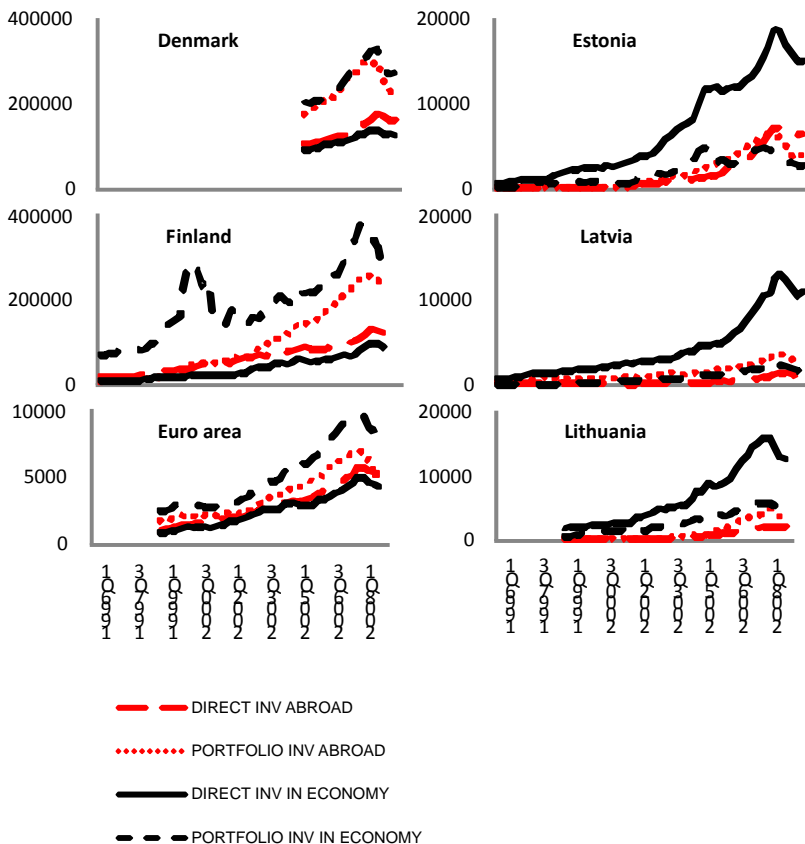
**Appendix A. Interest rates, GDP, stock market and local currency.** Bottom pane of the charts presents figures for the Baltic States and upper pane for the Scandinavian countries for overnight interest rates, GDP and stock market. GDP is presented in quarterly constant prices in million EUR. Latvian currency is presented in 10xLAT per EUR.



**Appendix B. Changes in interest rates, GDP and money supply before and during crisis.** Left vertical axis presents the changes in money supply and GDP. Money supply and GDP are indexed to their initial value at the starting point of the data. Right vertical axis presents the changes in overnight interest rates. Data covers the period from Q1 1995 to Q3 2009.

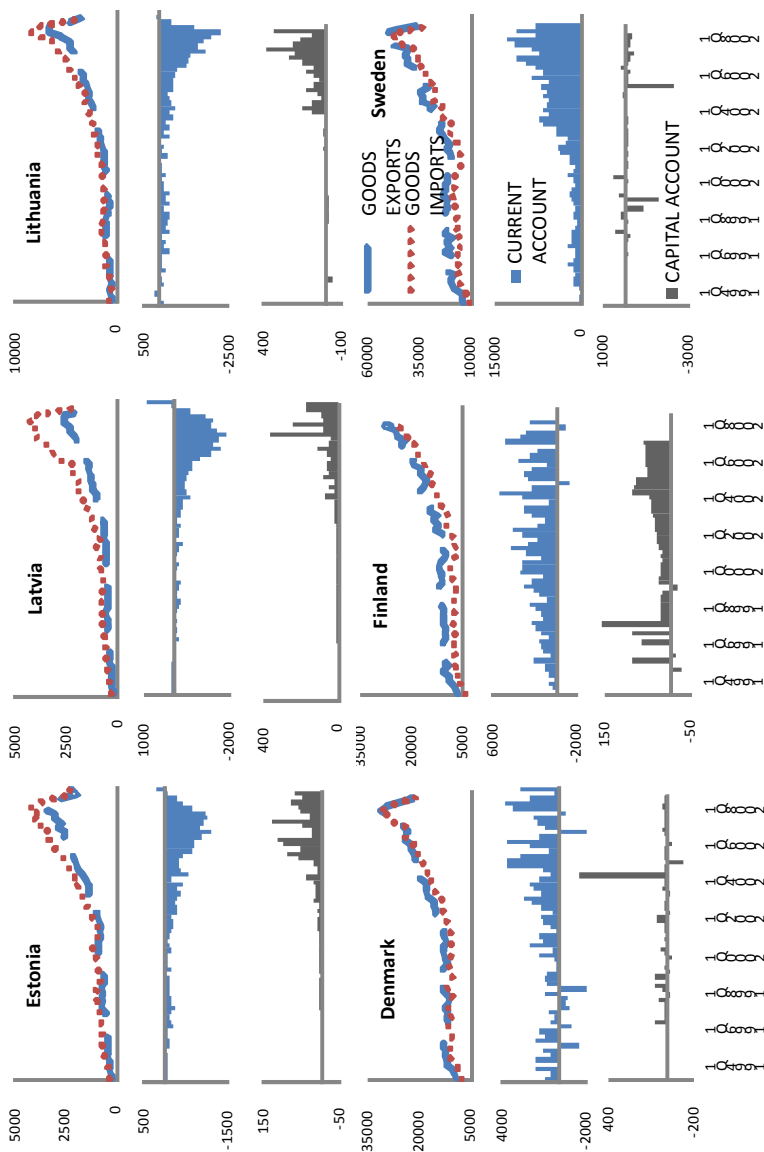


**Appendix C. Direct and portfolio investments in economy and abroad.** Data is presented in million USD from Q1 1996 to Q2 2009.

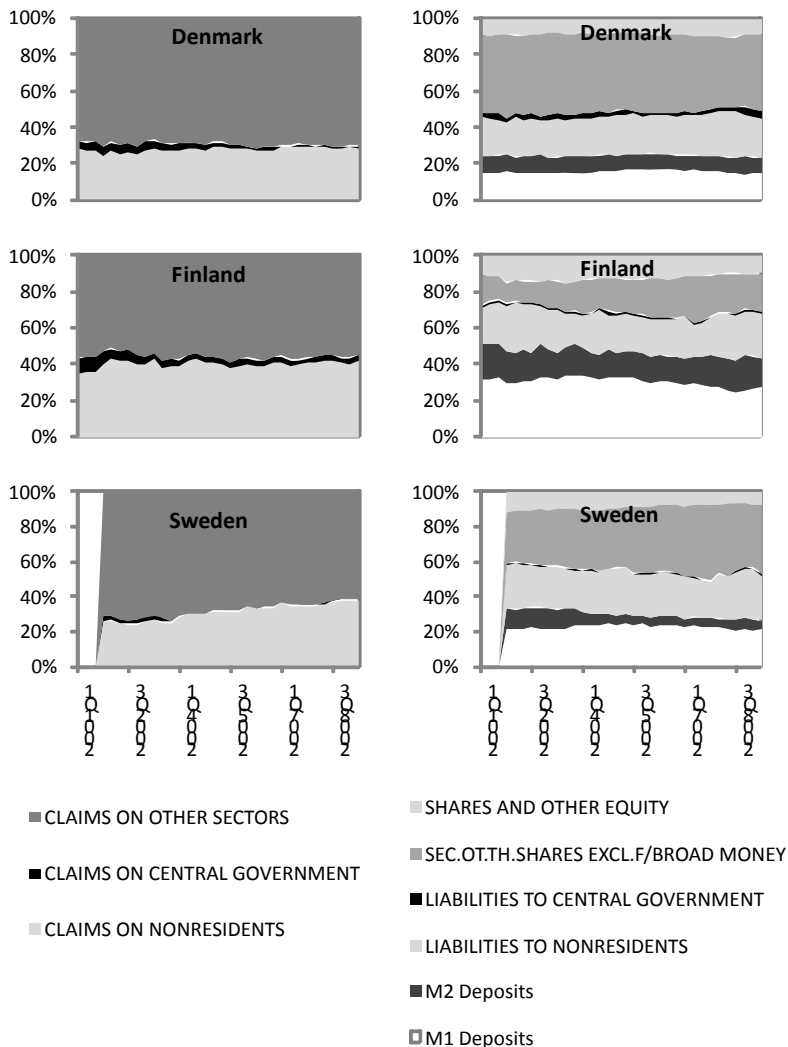


## Appendix D. Exports, imports, current account and capital account.

Data is presented in million USD from Q1 1994 to Q2 2009.

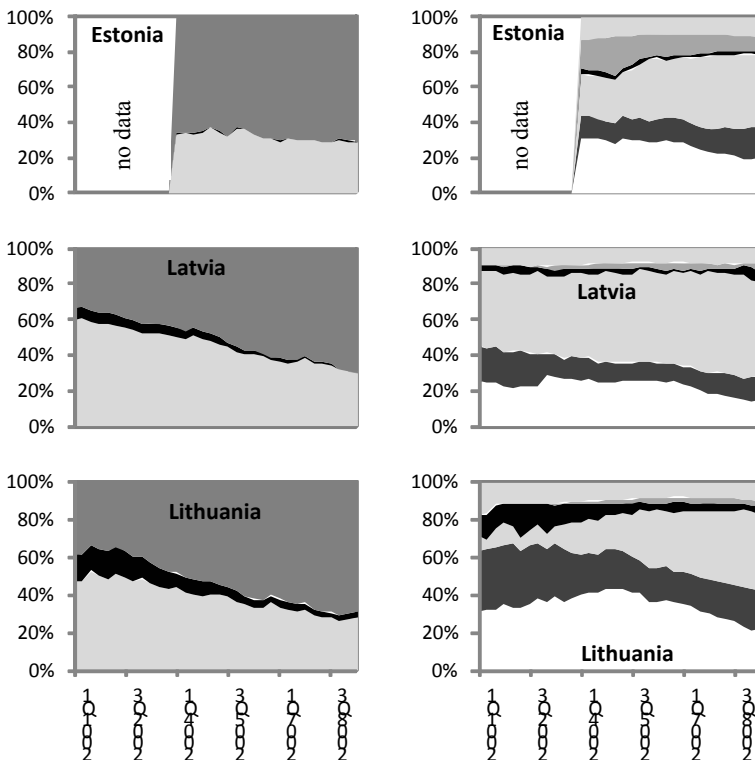


**Appendix E. Asset and liability structure of depository financial institutions in Denmark, Finland and Sweden.** Left pane presents the asset structure in the following order: claims on other sectors, claims on central government, claims on nonresidents. Right pane presents the liability structure in the following order: shares and other equity, other shares excl. from broad money, liabilities to central government, liabilities to nonresidents, M2 deposits, M1 deposits.



**Appendix F. Asset and liability structure of depository financial institutions in Estonia, Latvia and Lithuania.**

Left pane presents the asset structure in the following order: claims on other sectors, claims on central government, claims on nonresidents. Right pane presents the liability structure in the following order: shares and other equity, other shares excl. from broad money, liabilities to central government, liabilities to nonresidents, M2 deposits, M1 deposits.



- CLAIMS ON OTHER SECTORS
- CLAIMS ON CENTRAL GOVERNMENT
- CLAIMS ON NONRESIDENTS

- SHARES AND OTHER EQUITY
- SEC. OT. TH. SHARES EXCL. F./BROAD MONEY
- LIABILITIES TO CENTRAL GOVERNMENT
- LIABILITIES TO NONRESIDENTS
- M2 Deposits
- M1 Deposits

# STRATEGIES FOR ESTONIAN RURAL FAMILY ENTERPRISES

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## Abstract

The paper seeks to analyse family businesses in rural areas, family business strategies and re-registration of sole proprietors with the Centre of Registers and Information Systems (hereinafter Commercial Register) in 2009, and to provide an overview of entrepreneurship policies targeted at Estonian rural businesses. Layoffs have increased the number of unemployed; some of those who have lost employment opt for social assistance benefits, but some others decide to become entrepreneurs. Many enterprising people in Estonia have set up a family enterprise, mainly in the sphere of services, agriculture and tourism. The Estonian entrepreneurship policy supports enterprising people and approves of entrepreneurship as a promoter of national economic development. One of the most positive qualities of family enterprises is their short decision-making chain, which ensures rapid implementation of the strategy.

**Keywords:** family enterprise, family business, family firm, sole proprietor, strategy, entrepreneurship policy

**JEL Classification:** M10, M14, M19

## Introduction

The paper seeks to analyse family businesses in rural areas, family business strategies and re-registration of sole proprietors with the Centre of Registers and Information Systems (hereinafter Commercial Register) in 2009, and to provide an overview of entrepreneurship policies targeted at Estonian rural businesses. Layoffs have increased the number of unemployed; some of those who have lost employment opt for social assistance benefits, but some others decide to become entrepreneurs. Many enterprising people in Estonia have set up a family enterprise, mainly in the sphere of services, agriculture and tourism. The Estonian entrepreneurship policy until 2013 supports enterprising people and approves of entrepreneurship as a promoter of national economic development.

Family enterprises are characterised by that the family business is the main source of income for the family members. One of the most positive qualities of family enterprises is their short decision-making chain, which secures rapid implementation of the strategy. Factors influencing the activity and success of family enterprises are their mutual relationships and a detailed and well-considered strategy. A family business strategy is focused on activity and attends to what and when to do, and in which way specific activities should be carried out. A family business strategy setup must be planned in detail; all stages must have a specific content and have to be



carried out consistently. The planning process of a family business strategy never ends, the strategy must be consistently adjusted to changes (in the environment, competition etc). Family undertakings are convinced that with a strong family and proper management strategy they can ensure achievement of the objectives and earn profit.

Family entrepreneurship in Estonia is advanced in rural areas; family entrepreneurship has a substantial role in the economy. The author has conducted surveys of sole proprietors; entrepreneurs who have converted entrepreneurship form or quit entrepreneurship; rural undertakings; local governments; beef cattle and horse breeding family undertakings. The author has published many articles on the basis of the research findings with the wish to contribute to implementing Estonian entrepreneurship policies and cooperation between family enterprises. The author has underlined the importance of family enterprises in the Estonian entrepreneurship policy, especially in rural areas, identified bottlenecks of family enterprises, their main problems and suggested ways to solve these problems.

This paper provides a survey of the research conducted among rural family businesses. The paper seeks to study strategies of rural family businesses at the example of beef cattle and horse breeding family undertakings and re-registration of sole proprietors in the Commercial Register in 2009. Based on the objective, it was necessary to solve the following tasks: provide an overview of rural entrepreneurship policies and horse farming, development of family businesses and enterprises' strategies; analyse reasons of self proprietors for re-registering/ not registering in the Commercial Register, and for changing the entrepreneurship form; investigate the background of family undertakings, their motives while starting a business; study family enterprises' strategy; find problems that require solution in practice.

Family enterprises are convinced that with a strong family and a good strategy they can ensure achievement of the objectives and are able to earn profit. A survey conducted by the author in 2006...2009, 98% of the owners of family enterprises investigated by us are actively participating in management of their family business. 40% of the family enterprises have a properly formulated strategy to ensure sustainable development of the family business. Strategies have been made in writing, formulating a detailed vision, mission and objectives; long-term objectives are identified for the period of 5...10 years. Long-term objectives in the strategy of beef cattle breeding family enterprises were identified for up to five years (60%), those of horse breeding family enterprises for up to ten years (40%). Family entrepreneurship is more intensive in less developed regions (rural areas) where family businesses have a dominant role in the economy.

Most of the animal breeding family enterprises are focused on the Estonian market, but joint activity and exports would help to boost the economy. A possibility for family enterprises is cooperation, not only with cooperative societies but also with other family enterprises. Hence many family enterprises need to reformulate their strategy, which is a precondition for surviving. It is very hard to explain to family

entrepreneurs from older generations who are used to moving in a rut. In order to diversify family business they need many new skills: market evaluation, business administration, strategy development, customer service, teamwork, stress tolerance etc. Start-up entrepreneurs are in a better situation, they are more eager to learn, want to obtain knowledge and make the maximum use of opportunities for that: membership in cooperative societies, using consultation services and looking for contacts with family enterprises in the same area of activity. It is not enough to formulate a family business strategy; the strategy must be carried out successfully and purposefully.

In this research the author used a qualitative research method (in 2006, interviewed 24; in 2008 230 and in 2009 177 family enterprises, conducted interviews). Statistical data were taken from the databases of the Centre of Registers and Information Systems, of the Tax and Customs Board, Statistics Estonia, Bank of Estonia and of the Estonian Animal Recording Centre.

The paper is divided into six sections where the above-mentioned tasks have been dealt with. The first section provides an overview of rural entrepreneurship policies; the second section analyses registration and non-registration of sole proprietors with the Commercial Register in 2009, identifies the reasons; the third section provides a survey of family businesses and related problems that have been investigated earlier, clarifies the concept of family business; the fourth section describes development of horse breeding and provides results of analyses; the fifth section explains the concept of strategy; the sixth section outlines differences of a family business strategy from a non-family business strategy; presents solutions and results of analyses and finds problems that need to be solved in practice.

### **Rural entrepreneurship policy**

The Estonian entrepreneurship policy development plan until the year 2013 is related to development plans of many other spheres (rural life, tourism, education etc). Notwithstanding that there are development plans set down for the advancement of human environment in rural areas no attention has been focused on development of agriculture (especially animal breeding). Agricultural entrepreneurship has been an essential area of activity and source of income for Estonian people over time. Agriculture has played a significant role in supplying inhabitants with foodstuffs, in rural entrepreneurship and development of cultural landscapes. The economic position of the agricultural sector has, owing to the growth of direct aid and rural life development support, improved in recent years (Kirsipuu 2009c).

Agriculture is a traditional branch of economy in Estonia where enterprises' productivity and profitability per employee are remarkably lower than the respective indices in other European Union countries. The international competition position achieved by the Estonian economic sector is largely based on relatively cheap production inputs and is therefore weak: outlooks for the producers relying on a price advantage are fading. Successful survival in international competition depends

increasingly more on the skills of using new knowledge and approaches in business and in the situation where production costs are approaching the level of developed countries, productivity growth is the only way to keep up or improve the enterprises' international competitive position. Productivity in Estonian enterprises constitutes only 50.6% of the European Union average (Estonian...).

An objective of the European Union common agricultural policy is to raise the competitiveness of the agricultural sector, to ensure comprehensive development of rural areas (Common...). After joining the European Union, Estonia started to interfere in agricultural activity by applying subsidisation. In addition to direct aid there are many specific subsidies set out in the Estonian rural development plan. Notwithstanding the subsidies, the share of agriculture in the economy has fallen. For example, in 2004, agriculture and hunting contributed 2.4% of the gross domestic product, in 2008 only 1.5% (Eesti Statistika; Eesti Pank). The purchase prices that had risen after Estonia's accession to the European Union helped to increase production outputs, but by now in 2010 the purchase prices have fallen again and enterprises are looking for possibilities to keep existing production volumes, but the situation is growing more complicated every day. A way out might be joint activity, which could help make production acceptable for market demand.

Another possibility is for enterprises to join forces and form cooperative societies or join the existing ones. For example, dairy cattle breeders have joined into the Animal Breeders Association of Estonia, beef cattle breeders into the Estonian Beef Breeders Association, which in turn is a member of the Animal Breeders Association of Estonia. The association membership has enabled them to use better services, sell products at higher prices. Native cattle breeders have united into the Estonian Native Cattle Breeders Society; sport horse breeders into the Estonian Sport Horse Breeders' Society; trotter horse breeders into the Estonian Horse Racing Association; breeders of endangered horse species (Tori horse, Estonian native and Estonian Heavy Draught horse) and breeders of trackhenners and Arabian horses into the Estonian Horse Breeders Association; sheep breeders into the Estonian Sheep Breeders Association, etc.

The number of active commercial associations in agriculture has increased from year to year and in 2009 reached 67, including 9 selling animal products, 11 breeding farm animals, 30 dairy marketing firms (Registrite...). To support joint activity and encourage joint marketing the Ministry of Agriculture worked out a support measure under the Estonian Rural Life Development Plan 2007-2013 – "Support to establishing and developing producer groups" (Eesti maaelu...). They hope that the support measure will increase cooperative activity among enterprises operating in the field of agriculture. The support measure seeks to assist producers belonging to producer groups make production and products conform to the market requirements.

In 2009, the Estonian agricultural sector was negatively affected by the recession in the world economy and highly subsidised production of competitors. Agricultural production in European Union countries has been subsidised in greater degree and during longer periods, which gives them a long-term competitive advantage.

Farmers have made investments to ensure environmental cleanliness and production efficiency via long-term loan and leasing obligations. In 2010 they have difficulties with fulfilling these obligations, which in turn forces the farmers to cooperate. Within the first 9 months of 2009, farmers received loans for 635.7 million and leases for 660.2 million less than in the same period last year. They can only hope for state interference to support getting loans at reasonable conditions into the agricultural sector (Värnik 2010).

In order for the Estonian entrepreneurship policy development plan to work successfully it is necessary to value regional, local, saving and information society development. The entrepreneurship policy supports in every way development of responsible entrepreneurship so as to avoid that entrepreneurship growth and profitability wouldn't happen on account of other members of society or natural environment (Estonian...). It is important for rural areas to have business activity going on; business should start first in agriculture and after it has taken roots also other areas of activity would start growing in this region (Bourge 1994). Economic performance of agricultural enterprises depends on enterprises' work on making their economic activity more effective and on state activity in providing an economic policy framework for enterprises, while the enterprises need to develop intensive and extensive joint activity for the development of a system of common services and for designing an economic policy environment (Reiljan, Tamm 2005).

More attention than today was focused on development of rural areas during the occupation period. More wealthy farms (state and collective farms) turned a lot of attention to the economic and social development of rural life. Living conditions in rural areas were usually better than in towns; newly built urban type dwellings in the centres of wealthy collective farms had central water supply, sewerage, and central heating. Farms were repairing roads and streets, buses went to every village in the woods, workers and students could go to work or school and back home. Landscapes were designed and cultivated, networks of kindergartens and schools well developed. Newly built single-family houses were few, probably because of the wish to reduce costs of infrastructure development. By now the houses built during the period of occupation are mostly out of repair, people have moved to towns to look for employment, there are no proper road networks or bus connections any more. Many small country shops, post offices, kindergartens and primary schools have been closed down, and soon it will happen also to high schools.

In the opinion expressed by the European Economic and Social Committee, *The contribution of tourism to the socio-economic recovery of areas in decline*, they envisage diversification of the economic activity. A large number of complementary and diverse activities are needed, which in the future would form an economic foundation for the region. It is found that many participants, enterprises of different size, family enterprises and international corporations, enterprises with different social ambitions and different economic focuses have to be involved in tourism as well as in other spheres. The opinion was pointed out that reinforcement and development of the activity of sole proprietors is definitely a very important factor in order to improve the adaptation of the employees to new conditions. They are

convinced that it is a priority to preserve and create jobs: the biggest costs involved in the socio-economic decline of enterprises and sectors are caused by loss of jobs, and therefore the main objective of the initiatives for restoring these regions is to keep up, and, where possible, increase employment. Therefore, notwithstanding the temporary social protection schemes, a proposition is made, in order to encourage initiatives in the field of tourism, to promote investments that create new jobs, training and retraining, as well as the culture of being a sole proprietor, and social economics (Euroopa... 2006). Majority of the tourist farms located in Estonia are run by families. Family business has often started from the wide-ranging role of the head of household as an owner-executive, which he has started to share with his family members. For example, his brother has become a production manager in the same firm, wife an accountant, daughter a secretary, son a marketing and sales manager. Such an enterprise can operate very well unless a gap is created between family members and other employees, and if they would also stay open to what happens outside the family (Zernand 2005).

A survey conducted in the USA in 2008 demonstrated that the economic development of regions and family enterprises is closely connected: growth and survival probability of family enterprises in backward regions, where the economic growth is smaller, is much higher than in high economic growth regions. Family enterprises are more efficient, they have social capital, they are not dedicated to an economic purpose only, hence need less capital for investment (Chang *et al.* 2008). By author, it is the same in Estonia: family entrepreneurship is more intensive in less developed regions (rural areas) where family businesses have a dominant role in the economy. The author has conducted surveys of local governments and beef cattle breeding family businesses. The findings have been published in many articles, which attempt to contribute to implementing of the Estonian entrepreneurship policies and to encourage cooperation between family enterprises. The author has underlined the significance of family enterprises in the Estonian entrepreneurship policy, especially in rural areas, identified bottlenecks for family enterprises, their main problems and made suggestions and recommendations how to solve them.

### **Development of entrepreneurship**

No private entrepreneurship existed in the period when Estonia was annexed to the Soviet Union. Now that Estonia has been independent for nearly 20 years, the Estonian economy has recovered, the number of private enterprises has been increasing rapidly, enterprises' competitiveness and economic indices have improved. Compared to 2002, the number of enterprises has increased 92.5% (Table 1).

The most numerous among registered are sole proprietors and private limited companies, which accounted for 94.1% of the companies as of 01.01.2010 (Table 1). Until the year 2009, sole proprietors could register their activity either with the Tax and Customs Board or with the Commercial Register. Official statistics covered only data of those registered in the Commercial Register. To avoid confusion the Estonian Government decided that all sole proprietors shall reregister themselves with the

Commercial Register during 2009. Unfortunately the information on registration did not reach all those concerned. It would have been more reasonable to register them automatically.

**Table 1.** Companies and Sole proprietors registered in the Commercial Register in 2002-2010

	02.01. 2002	01.01. 2004	01.01. 2006	01.01. 2008	01.01. 2009	1.01. 2010
Sole proprietors	19 443*	21464*	21 671*	19601*	17788*	32187**
Private limited companies	43 266	54387	66 200	86480	92554	99308
Public limited companies	7 862	6743	5 945	5614	5344	5094
Commercial associations	933	855	695	649	624	612
Limited partnerships	468	630	708	810	932	1631
General partnerships	305	342	378	393	417	456
Branches of foreign companies	331	365	415	466	483	482
Societas Europaea	0	0	0	2	3	5
	72 608*	84 786*	96 012*	114 015*	118 142*	139776**

\* additionally ca 50,000 sole proprietors are registered with the Tax and Customs Board

\*\* additionally ca 30,000 sole proprietors have not reregistered themselves

Source: Prepared by the author on the basis of data from the Centre of Registers and Information Systems and of the Tax and Customs Board.

In 2009, many sole proprietors (ca 6 500) converted the form of entrepreneurship (mainly into private limited company). The motive they mentioned was that if you had to register with the Commercial Register, then as a private limited company rather than a sole proprietor; the second reason being the absence of 100% liability with personal assets (private limited company is liable for its obligations only within the limits of its shareholders' equity). Entrepreneurship form was converted most in the following sectors (Registrite... 2010):

- Administrative and support services (27.5%);
- Real estate activities (16.5%);
- Education and research (15.3%).

In agriculture and forestry (including fishing) 4% of the undertakings changed their company form, mainly those who had not been registered as farms. In 2009, approximately 14,000 sole proprietors reregistered themselves with the Commercial Register, mainly in the following fields of activity (Registrite... 2010):

- Other service activities (20.1%);
- Repair of commercial and motor vehicles (15.7%);
- Agriculture, forestry and fishing (13.1%);
- Education, scientific and technical activities (12.2%);
- Entertainment activities (8.8%).

Most of the enterprises operating in the field of agriculture and forestry, fishing and tourism are family enterprises. The Estonian cattle breeding enterprises are mostly family enterprises (Kirsipuu 2009a; Kirsipuu 2009c).

The number of working-age employed population in agriculture and forestry has been decreasing from year to year – compared to 2004, 27% and as of 2008, 25,300 people, according to Statistics Estonia (Eesti Statistika). Hence, development of the human environment in rural areas, particularly agriculture, should be intensified. Retraining and refresher courses should be provided for the unemployed workforce. Estonia spends on active labour market measures the least in Europe – 0.1% of gross domestic product; 90% of this comes from the European social funds. The share of those who participated in lifelong learning in Estonia in 2004...2007 was 7%, whereas in Sweden the share was 32.4%, in Denmark 29.2% and in Finland 23.4% (Taat 2009). The share of Estonian agriculture in employment decreased constantly over 1993...2003 – in 1993, agriculture and forestry contributed 7.8% of the gross domestic product, in 2003 only 2.3%; the share of those employed with agriculture was 4.3%, in 1993 – 12.5% (Reiljan, Tamm 2005).

Before Estonia joined the European Union and again now, there was a situation in the labour market in rural areas where it was possible to hire highly qualified workforce for minimum wages. The main reason before was that middle-aged and older people who had settled down in rural areas lacked mobility and opportunities to renew their qualification (Reiljan, Tamm 2005). In 2005–2008, young people were leaving for towns looking for other challenges. However, in 2009 they started to return to rural areas. Either to get peace and quiet, escape from town noise, or to help their parents, or because they could not pay for living in town and prefer settling down in the country. No jobs are waiting for those returning to the country, hence they need to start a business and it is taken for granted in rural areas that they start a family business.

Fast growth of tourist farms would contribute to making rural areas more attractive. Tourist farms offer active recreation, opportunities to take part in family business and so-called “put hands into the soil”. 20% of the beef cattle breeding family enterprises have a tourist farm as an ancillary activity. Tourists can spend time on beef cattle pastures and feed or drive cattle from one paddock to another (Kirsipuu 2009b). Growth of enterprises is thought to be limited by external factors rather than by inability of owners or reluctance to expand the market, for example, the prescribed European Union quota for suckle cows and agreed prices at meat processing plants (Kirsipuu 2009b). Family enterprises which expand activities see expansion opportunities in ancillary areas of activity (tourism, accommodation, catering, veterinary services, retail trade, repair shops etc).

### **Family entrepreneurship**

The Estonian legislation does not provide for the terms “family enterprise” or “family firm” and the respective statistics. A family enterprise is an undertaking where at least two members of the same family control, are directly related and own

most of the business (Zernand 2005). A family enterprise differs from ordinary undertakings first and foremost by the functions of personal and business relationships of family members. A member of a good family enterprise has to successfully combine three roles: the ones of a family member, manager and owner. The enterprises established at home are family-focused; spouses have started the business together. In case of success, children or some relatives are also engaged in more serious work. Later, dedication brings children's families into the business as well. Such family-focused enterprises display serious dedication, as they secure firmly for themselves clients-family acquaintances and survive difficult periods caused by the external environment (Zernand 2005). According to the Estonian legislation, an undertaking is a natural person who offers goods or services for charge in his or her own name where the sale of goods or provision of services is his or her permanent activity, or a company provided by law (Äriseadustik 2010). The Estonian legislation lacks the legal notion of "family entrepreneur" or "family business". The author's opinion is that a family enterprise is an undertaking where members of the family of the undertaker take part in; family members are spouses, children, parents, siblings, aunts-uncles and their spouses. It is of no significance whether the conjugal relations are official or not, only cohabiting counts. At the same time, they say that when the relationship has broken down it is not possible to implement the enterprise's strategy successfully – it would cause tensions and more problems (Kirsipuu 2009b).

Estonia's close neighbours in Finland have studied family entrepreneurship thoroughly. In 2001, 86% of the undertakings in Finland were such that owned over 50% of the family business. 65% of the undertakings regarded their firm as a family enterprise; 30% were both owners and workers. In 2001, 800,000 people were involved in family business in Finland. Average age of the members of family enterprises is growing older – 60,000 entrepreneurs were older than 65 years (Quo... 2003). The issue of combining family and work has risen to agenda in Finland again. Special attention has been paid to combining wage labour and family (Römer-Paakkanen 2002), women's role in the family (Rautamäki 2007), involvement of children in business (Tormakangas 2005), the problem of successors (Hautala 2006). To assist the family in family business many women have quit wage labour, preferring combination of family and work (Halttunen 2004). Questions have been brought up: family business, or family, or business – what to choose. It has been found that a family is more homogeneous and steady if all members worked for a common purpose (Juutilainen 2005). The studies demonstrated that until there are no children in the family, family members like to do business outside the family business; however, when children are born, they prefer to stay with the family and take part in common family business. Knowledge and skills are communicated to children (Littunen 2001). If children do not wish to take part in family business, the issue of succession arises. Whom to leave the firm to, whom to appoint manager etc (Kakkonen 2006)? Whether to terminate business or bring a person from outside into the family business? They are afraid that conflicts may arise from different understanding of work and free time (Niemela 2003).

Some reasons why critical situations arise in a family enterprise are (Quo... 2003):



- offspring have a conflict with older generation who cannot stay away from management;
- manager brought from outside does not reckon with family interests;
- single undertakers have not enough time to let the offspring know the labyrinth of business;
- young generation has wanted to make cardinal changes based on what they were taught at school, which the previous generation does not like.

The author has since 2002 conducted surveys with entrepreneurs in different spheres of activity to identify the reasons why they choose entrepreneurship, participation of their family in business, strategy setup, management, organisational culture etc. In the first years, the author conducted surveys with sole proprietors, as in many countries self-employed people have been esteemed. Any kind of entrepreneurship, but particularly sole proprietorship, demands from the entrepreneur a lot of energy, money and time. Before starting as an entrepreneur one has to decide what are the risks they are willing to take. A start-up entrepreneur must weigh his/her suitability and ability to manage an enterprise and be convinced that he is able to act as an entrepreneur. It happens often that enterprise brings a loss and entrepreneurs lose their property. Sole proprietors can be divided into three groups (Kirsipuu 2004):

- those who are entrepreneurs because they could not find acceptable paid employment;
- forced entrepreneurs who actually work for wages;
- those who want to be entrepreneurs.

The research conducted in 2004 identified that vary many sole proprietors have all their family involved in the business: spouse, children, parents, siblings (Kirsipuu 2004). A survey conducted by the author in 2006 with the above-named entrepreneurs demonstrated that 88.8% are active entrepreneurs, and 75.5% of them in turn have their family involved in business (Kirsipuu 2007). Most of the entrepreneurs used their family both directly and in some hidden way. Therefore the author decided to focus attention not only on sole proprietors but also on family enterprises. Many sole proprietors have converted their form of entrepreneurship and started to operate as a company (general or limited partnership, private limited company).

A pilot study on setting up, operating of family firms and their development problems was carried out in 2006 among 53 family firms (Kaseorg, Siimon 2007). They found that family enterprises, knowing their specific features, need to make right choices and the primary precondition for their successful development is to define them organisationally and legally. The study confirmed that it is important to create a family entrepreneurship information system, to generalise and share experiences, and conduct in-depth research into family entrepreneurship. In 2007, a case study was conducted which again identified the need for an in-depth study (Kaseorg, Siimon 2008). Kaseorg and Raudsaar (2008) reached a conclusion that the most important problems for family firms are connected with business environment and management. At the same time, the author points out that additionally, family

enterprises need to pay particular attention to business strategies and strategic management in order to ensure survival, especially in the current economic situation. Family enterprises need to be apt to changes, and a precondition for this is a correctly prepared strategy in writing.

Cooperation has a specific role in the economic environment. Success achieved with joint activity will ensure successful management of family enterprises also for the next generations; family members, a consultant or an external expert can be used as advisers (Syme 1999). Advice should be definitely used in case the family firm is transferred to a non-family member (Hautala 2006). The connection between family firms' learning and entrepreneurship activity has been studied lately and it has been found that learning is a value added for the family enterprise and would help family undertakings to create social networks (Juutilainen 2005). Mutual cooperation is important not only within the family firm but also between family firms; networks need to be established so as to help create and preserve knowledge and values in the family firms (Niemela 2003). Participation in networks will ensure cooperation capacity between the family firms and will increase growth of competitiveness within the networks (Niemela 2003). Innovativeness and obtaining of knowledge on entrepreneurship will contribute to generation of networks, especially in rural areas (Vasques, Ernesto 2008), which would help to enliven rural life there. Of great significance in cooperation between family firms is cultural compatibility of different nations: in most of the countries owning a family firm is regarded as a competitive advantage (Brice 2005). At the same time, Brice (2005) admitted that specialists in family firms act similarly regardless of the different culture, and one should rather reckon with family traditions. Success in a family firm will be achieved with smooth cooperation (Sharma 2008); not all managers who are successful fit in a family firm, with their rigid management principles they may cause confusion and chaos there.

### **Horse breeding family enterprises**

The Estonian rural development plan 2007-2013 writes that Estonia is planning as a first priority to improve the competitiveness of agriculture and forestry, providing training and informing activities for entrepreneurs, to encourage start-up young agricultural producers as well as amateur farmers; to develop consultation systems and services; to promote modernisation of agricultural enterprises (incl. investment into development of agricultural micro-enterprises; investment into animal breeding facilities; investment into bioenergy generation); to improve the economic value of forests and give added value to forestry products; to give added value to agricultural products and non-wood forestry products; to develop new products, treatments and technologies in agriculture and food sector and in forestry (incl. sub-measure: cooperation for the development of new products, treatments and technologies in agriculture and food sector and in forestry); agricultural and forestry infrastructure (Eesti maaelu...)

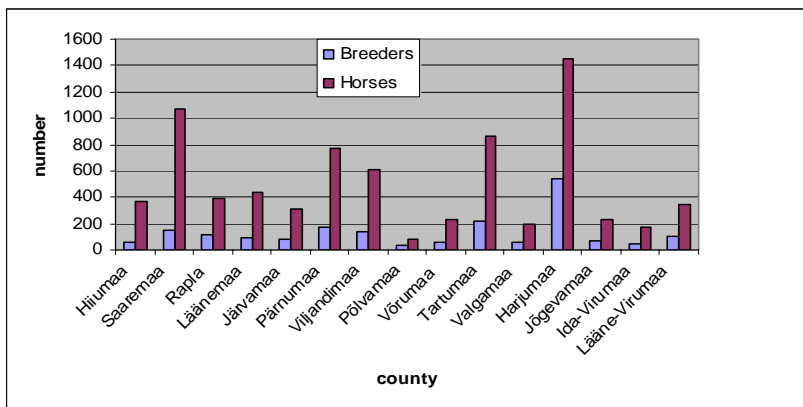
However, horse breeding has been neglected in all development plans. The Estonian rural development plan provides a pasture subsidy and benefits for endangered horse

breed breeders and to cooperative societies for keeping stud-books and from 2010 year also for conducting performance testing. But no attention has been paid so far to Estonian horse farming. Horse has been counted as a farm animal only since 01.01.2009 (Loomakaitseadus). Until then, horse was regarded as a pet, although it did not belong to the category of pets either. Such was the situation not only in Estonia but also in other European Union countries. Therefore, the European Commission decided to focus more attention to horse breeding and first of all from animal health aspect. In 2008, the European Commission adopted a regulation which came into force on 01.07.2009. The regulation is being implemented in all Member States.

Nearly all so-called European Union old member states have paid a lot of attention to horse breeding. For example, horse breeding has great agricultural significance in Sweden, there are ca 300,000 horses, including ca 100,000 in agricultural family enterprises. There are more than 6000 horse breeders in Sweden, ca 2,000 of them are family undertakings. The number of cattle in Sweden has been decreasing in recent years, but that of horses has been increasing, as there are many semi-natural pastures for horses. The Swedish entrepreneurship policy until 2013 focuses a lot of attention to horse breeding, in order to revive rural life. The objectives are to promote horse breeding as a branch of production, to create for enterprises engaged in horse breeding the best conditions in legislation and to educate farmers in horse breeding. Swedes find that just horse breeding can boost entrepreneurship, reduce unemployment and increase employment in rural areas. Sweden has planned in the new entrepreneurship policy to enhance the importance of horse breeding from 2014, as horse breeding is most economical in terms of land use. Horses can be used for maintaining pastures as well as in sports successfully. They want to start subsidising those farmers who start breeding horses. Horse breeding is essential for both rural economy and for all society (Hedberg 2009).

In Finland 80% of the horses are in rural areas, 60% of them (ca 42,000 horses) in farm households. Horse farms are mostly family enterprises; horse breeding is their hobby, an ancillary activity or principal activity. 4000 are employed full time, 8000 part time with horse breeding in Finland, plus 4000 pensioners. A survey conducted in 2009 among 295 horse breeders showed that 35% of them are engaged in breeding; 21% are raising riding horses; 19% trotter horses; 25% are engaged in tourism, training etc. Reasons for selecting horse breeding as a family business are generation change (7%); good economic preconditions (14%) and 54% mentioned that it was a strategic choice (Thuneberg 2009).

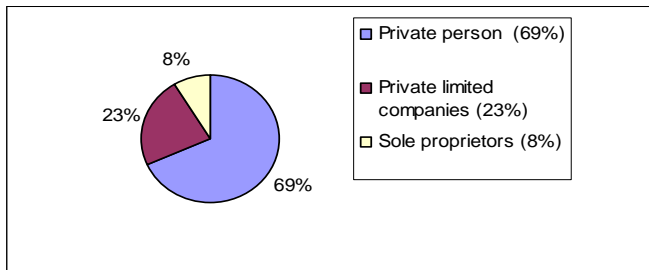
Horses and horse breeding in Estonia are rather a private hobby of breeders. As of September 2009 there were 1927 horse owners in Estonia, who had 7534 horses of different breed (Figure 1). Approximately 500 are active horse breeders. The largest proportion of horses (19.2%) is registered in Harju County (including Tallinn); horses registered in Tallinn are in fact located mostly in different stables across Estonia. As many horses as in Harju County are registered on islands (Saaremaa and Hiiumaa); Saaremaa 14.3%; Tartu County 11.5% and Pärnu County (10.3%). Horses are fewer in Põlva County and in Ida-Viru County (Figure 1).



**Figure 1.** Number of horses and horse owners across counties. (Prepared by the author on the basis of the database of the Animal Recording Centre)

As of 01 January 1939, there were 238,500 horses in Estonian farms, after World War II in 1946, 178,800 horses (Misiunas, Taagepera 1997). In the Soviet period, farms were nationalised, horses were expropriated from farmers and taken into horse rentals until the year 1949. After the horse rentals were closed out, horses were taken to collective farm stables. The number of horses started to decrease. Co-operative activity in Estonia persisted through the first years of the Soviet era; for example, there were 115 stallions at the mating stations of the agricultural cooperatives in 1948, but the cooperative activities were terminated in 1950 and the animals in cooperative societies were handed over to collective farms (Laansalu 2007). The author's grandfather worked in 1955...1978 as a stableman, his memories of horse breeding in that period are as follows: most of the farm work in 1955...1965 was done with horses; horses were very abundant in 1955; when tractors came, the number of horses started to decrease. When grandfather went to work at the collective farm, there were 6 stables with the total of 300 horses; in 1978, only one stable with 25 horses was left. Horses were chosen by endurance rather than breed qualities or competition results: those who could haul heavy loads longer remained. Other horses were written off, sent either to a meat-processing plant for sausage-making or to a fur animal farm for feed. When farmers' private productions were established, some horses were given to the collective farmers' households, but not more than one horse per household. In 1985, there were still 10,700 horses in Estonia, but in 1990 only 8,600 (Tekkel 2007). Still, several farms managed to continue horse breeding activity through the occupation period in order to preserve Tori, Estonian Native and Estonian Heavy Draught horse. For example, in 1984, there were 61 horse breeding farms in Estonia with a total of 1633 over three year old mares and 817 breeding mares (Agarmaa 1985). Several farms were engaged in breeding sport horses and riding sport; in 1987, there were 40 riding clubs in Estonia with 550 horses (Peterson 1989).

The author conducted a survey among 500 horse breeders to find out whether horse breeders regard themselves as family undertakings or not. Those who considered themselves family undertakings had to complete a questionnaire; the author conducted interviews with 20. The questionnaires were extensive; however, in this paper the author has discussed only issues concerning enterprise strategy. The results of the interviews and questionnaires on family enterprises' strategies were collected and summarised by the author. 177 horse breeders regarded themselves as family undertakings; unfortunately, only 31% of them have registered themselves as undertakings in horse breeding (Figure 2).



**Figure 2.** Horse breeding family businesses registered as undertakings. (Prepared by the author)

Reasons for not registering as an undertaking are:

- horse breeding is not esteemed in Estonia (20%);
- horse as a pet (20%);
- horse breeding is a hobby or ancillary activity (60%).

Horse breeding family undertakings have 3672 horses, on average 20 horses per breeder. Hence, this is a serious job rather than taking care of a pet. Most of the registered family undertakings owned stables, riding grounds and were engaged in the business of breeding and sports. 60% of the horse breeders had set up a company to provide, for instance, veterinary services, to engage in tourism, recreation, cattle breeding (including beef cattle breeding), forestry or agriculture. Horses are not hinted at in the company's activity. Across counties, horse breeding family undertakings are most numerous in Harju County (18.7%), Saaremaa (12.4%) and Tartu County (10.2%). The biggest horse breeding family enterprises are in Saaremaa (169 and 121 horses per herd).

Family undertakings are doing teamwork in their enterprise: someone's supervising implementation of the strategy, someone's responsible for financial affairs, someone's a manager and someone's attending the stables. In horse breeding wife is often more efficient, husband is attending the stables and is doing preparatory works. Family undertakings engaged in horse riding are using in addition to their family members also non-family workforce. 20% of them are using as extra workforce young people who are interested in horses. Before going to ride a horse,

one has to clean up the stall, comb and feed the horse; after training fix up the stall again and so every day. Undertakings needn't pay wages, while young people needn't pay for riding. There are enterprises who ask from young people a monthly fee for riding, but before riding they need to attend to horses. And there are enterprises who rent stalls in the stables, asking a fee for renting a stall, keeping and feeding horses whereas they needn't take care of horses as owners themselves want to do that.

### **Enterprise' strategy**

An enterprise's strategy shall contain all important functions of the enterprise and shall ensure that the decisions taken in the enterprise are compatible and represent a set of the main ways of achieving the long-term objectives and of operating principles, serving as a basis for steering development in that enterprise (Leimann *et al.* 2003). A strategy consists of ideas and activities for generating and determining the future (Macmillan 2001). Of great significance in implementing a management strategy is the organisational culture. Organisational culture is designed by owners of the enterprise. Organisational culture usually develops with the owners and the first employees and is hard to change. Implementing of new strategies is not always supported. "Organisational culture is expressed in value judgements, norms and principles of action, what the managers preach and observe, in ethical standards, official policies and procedures, traditions, in employees' behaviour and aspirations, in the legends told about what has happened in the organisation" (Leimann *et al.* 2003). An enterprise's strategy is a general action plan for the achievement of financial and strategic goals. An enterprise's strategy is usually formed of two components: taking the scheduled purposeful steps and reactions to unexpected changes (technological changes, steps taken by the government, changes in consumer conduct etc) and to competitors' conduct. "When reacting to changes the strategy is being fine-tuned" (Leimann *et al.* 2003). Enterprises need to prepare a strategic plan, where they identify their strategic vision and mission, goals and choice of strategy in order to define the short- and long-term objectives for enterprise's management and lay down the methods how to achieve these goals (Leimann *et al.* 2003). A strategy is needed in order to put up objectives; strategy is a question of how to take the enterprise from where it currently is to where they want to reach. Strategy is focused on activity, it deals with what to do, when to do and who should do it, hence strategic work will benefit only when specific steps are planned and implemented. The strategy planning process will not end; the strategy adjustment must go on continuously. An actual strategy for an enterprise will be a mix of strategies inherited from previous periods and reactions to changes in the operating environment (Leimann *et al.* 2003).

Especially now in 2010 that one cannot count on success in one area of activity, we need to pay special attention to different levels of strategy planning to diversify risks. Enterprises with diverse activities need to elaborate the strategy on four levels: general strategy of the enterprise; strategies for individual fields of activity; strategies for functional domains (marketing, financial, production strategy etc); a strategy for units within functional domains (Leimann *et al.* 2003). It should be

taken into consideration that a strategy with diversified activity would help establish a significant and lasting competitive advantage, and would assume a higher than average profitability in the respective field of activity. The best ways to achieve the competitive advantage must be found: develop products and services needed by consumers, which would help to differ from competitors; neutralise competitors' steps and find measures that would help to adjust to changing conditions in the environment and to components of the external environment. The following factors influence the development of an enterprise's strategy (Leimann *et al.* 2003):

- global, regional and national considerations;
- social and political considerations;
- attractiveness and competitive conditions of the area of activity;
- enterprise's resources and competitiveness;
- owners' personal ambitions, business philosophies and ethical convictions;
- organisational culture and ethical considerations.

In owner managed enterprises a strategy is often worked out informally. This is not put on paper but exists in owner's head and has been orally communicated to closest colleagues. 66% of the owners interviewed in 2008 had the plans in their head (Kirsipuu 2009b). The following factors influence strategy development in enterprises managed by owner (Leimann *et al.* 2003):

- owners and managers are often the same;
- individual's and enterprise's objectives coincide;
- the choice of goals is influenced in addition to business factors also by the entrepreneurs' lifestyle, age, health and family related considerations;
- there is often a wish to keep the enterprise independent.

Ownership and management unavoidably tend away from each other, owners start exerting influence to improve financial performance and growth (Leimann *et al.* 2003).

### **Family enterprise's strategy**

One cannot exactly delimit the boundaries between family and entrepreneurship; family is constantly participating in the entrepreneurship processes. Family is engaged in business also outside the working hours; they expect success only if all family is involved (Craig, Lindsay 2002). Every enterprise could benefit from carefully thought out objectives, mission, vision and strategy. Of primary importance for a sole proprietor and a company where the sole worker is its owner, and for a family undertaking is the knowledge of strategic management. However, most of the family undertakings follow first the rules established by themselves and their feelings and only when the family business is not growing as fast as they desire, they start thinking about strategy development. These family undertakings which can promptly reorient and change the strategy achieve success and prevent the family undertaking from failing. Family undertakings must carry out the strategies consistently, follow the deadlines and objectives and be open to changes, especially

to changes arising from the economic environment in order to promptly renew the strategy (Kirsipuu 2009b).

One cannot provide unambiguous guidelines for family undertakings. What may work well for one family undertaking, needn't work with the other. Every family undertaking needs to take such strategic decisions which are suitable for them only and take into consideration the abilities and specific qualities of their family undertaking. One should never hurry to imitate (Markides 2000). Owners of a family enterprise usually are from one family. However, if a family undertaking wants additional funding from outside, the provider of finance may become a co-owner. If the provider of additional funding is another family enterprise, the new family enterprise will be managed by both families and such a family undertaking can be called multi-family business (Gersick *et al.* 1997). On the basis of data at the disposal of the author it can be said that there are no multi-family enterprises in Estonia yet. The situation where there is a co-owner involves usually strategic innovations. Innovations prohibit undertakings to continue with the same operating habits and force them to start operating in a new way. Not only co-owners bring innovations, it happens also when they hire a new employee, or undergo training.

The family undertakings we interviewed have had no need for co-owners, but a few of them have started to think about it. They need additional finance, but risk capitalists do not wish to invest without acquiring a holding. 5% of the family undertakings were of the opinion that if the economic policy does not grow stable in the short term, they would be forced to ask for additional finance and are ready to take the finance provider into the family business. At the same time, they are of the opinion that then it will not be a traditional family enterprise any more. They do not support multi-family business, as family undertakings cannot be confident in the future that the co-owner's management will be acceptable for them and that just their offspring are those who will carry on the family business. Family undertakings are rather willing to "tighten the belt" and start planning new strategies that would help them come out of this situation as a winner, or then hold out in the existing one (Kirsipuu 2009b).

It takes time to implement a new strategy, but with joint efforts of the family it goes much faster and easily than between non-family members. Cooperation between family members is extremely important; cooperation helps to change the attitude of non-family employees. A good example is irresistible to imitate and a proper manager does not miss such an opportunity. If the family is committed to the new objectives, then employees of the family enterprise will do it also (Kirsipuu 2009b). Strategic management is different in family and non-family enterprises (Botts 2000; Kirsipuu 2009b). Different strategic management is important so as to ensure profit growth for the enterprise (Botts 2000); strategic processes in family enterprises are controlled by owners (Nordqvist 2005). Entrepreneur's ability to learn contributes to successful strategic management in family enterprises, increasing the value of entrepreneurial activity (Juutilainen 2005). A significant role in working out different strategies is played by mutual trust between owners of the family firm (Juutilainen 2005; Jones *et al.* 2008). While working out a family business strategy



one may not forget that attention should be paid to ownership transfer to the next generation (Raskas 1998). Conflicts disturb the strategic management of a family enterprise (Hume 1999). Managers of family firms need to rely on their intuition while implementing the strategies, making decisions and solving problems (Kakkonen 2006). Strategic management is easier to hand over in these family firms where parents hand over the management to children, where ownership, management and knowledge are handed over (Hautala 2006). In turning over management one must focus on the role of the family firm, management of a small family firm is decided by its owner, in the case of a larger management structure rather an elected managerial body is preferred (Burke 2007). If the owners trust a hired management who help the family enterprise diversify risks, increase economic success and orient in the economic situation, then the hired nonfamily executives help with their knowledge and experiences to diversify products and expand in the market (Jonese *et al.* 2008). Strategic management of family enterprises will go on more successfully, at the same rate or faster in those family firms where successors are males, as men are more venturesome (Koffi 2008). Management and organisational culture in family enterprises differ from those of small businesses, the difference being largely due to the strong family traditions (Miller *et al.* 2007).

Family enterprises are convinced that with a strong family and a good strategy they can ensure achievement of the objectives and are able to earn profit. A survey conducted by the author in 2006...2009 98% of the owners of family enterprises investigated by us are actively participating in management of their family business. 40% of the family enterprises have a properly formulated strategy to ensure sustainable development of the family business. Strategies have been made in writing, formulating a detailed vision, mission and objectives; long-term objectives are identified for the period of 5...10 years. Long-term objectives in the strategy of beef cattle breeding family enterprises were identified for up to five years (60%), those of horse breeding family enterprises for up to ten years (40%).

Beef cattle breeding and horse breeding are both long processes, especially horse breeding; the value of a horse is assessed usually only when the horse is three-four years old. By that time the horse has passed the performance tests, has participated in various competitions (including foals championships). By that time the character, behaviour and performance abilities have been developed. It is clear whether the horse can be used for sports, breeding, as a working horse or a pet.

All those family enterprises which have made a family business strategy follow this strategy, correct every year the objectives and improve the methods in order to carry out the long-term objectives. Those who have more than 60 horses in the herd and horses are not free range horses, have prepared in addition to a family business strategy also strategic plans for management. 58% of the beef cattle and 32% of the horse breeders have a proper planning system, which helps them implement the family business strategy (Table 2).

Beef breeding family enterprises (25%) sell in the European Union mostly organic beef and live animals, horse breeding family enterprises (60%) mainly young horses.

Horse breeding family enterprises export to non-European Union countries also young horses. 86% of the family enterprises have a strategy, 40% have a strategy in writing. All of them are carefully following the strategy and abide by the short-term objectives (Table 2).

**Table 2.** Survey of the presence of a strategy in family enterprises

Family business indicator	Beef cattle breeder	Horse breeder	Total
Number	230	177	407
Registered as an undertaking (%)	100	31	70
Only principal activity (%)	45	20	36
Secondary activity (%)	55	60	57
Range of activity in the European Union (%)	25	60	40
Activity in other countries (%)	0	20	9
Owner and management coincide (%)	97	100	98
Strategy is formulated in writing (%)	24	60	40
Strategy is in the head of owner (%)	66	20	46
Strategy is missing (%)	10	20	14
Planning system has been created (%)	58	32	46
Correct mission and vision (%)	24	60	46

Source: Prepared by the author.

The family undertakings interviewed by us:

- were positively minded and wished that their family business continued to operate;
- had a concrete strategy, they had a clear vision for the expansion and improvement of their family business;
- attached importance to the family business strategy, vision and mission;
- had prepared specific methods to achieve the objectives set up in the strategy;
- regarded joining in joint activities as the only right option;
- found that it is necessary to start an ancillary activity and, if possible, several ones, to diversify risks;
- were sure that their activity won't cease.

All family undertakings without an exception wished:

- More direct aids from the state; 'softer' criteria for getting and using the aids (for example, when an ear tag has got lost not to lower the aid or forfeit the right to aid award);
- Higher prices for products and livestock;
- State aids for selling live animals, support to cattle farmers for participation in fairs and competitions;
- A common network to go to the European market with products and livestock.

The main problems are:

- Insufficient resources of finance;
- Insufficient subsidisation;
- Insufficient cooperation between family undertakings;
- Shortage of skilled workforce who want to work;
- Lack of time for self-education and participation in joint activity;
- Bad infrastructure in rural areas (road maintenance, especially in winter).

Family enterprises in rural areas want in order to be sustainable and competitive, assistance from the state for funding. A common wish of beef cattle breeders is a properly working supply chain, so as to provide access to new markets for selling both meat and livestock. A common wish of horse breeders is that greater importance would be attached to horse breeding, which in turn would involve development of this area of activity. Family enterprises are more vulnerable, reserves for surviving critical periods are almost missing. They often depend only on one area of activity.

In the current economic situation, family enterprises need to pay more attention to family business strategies in order to be able to continue family business. They cannot take up a wait-and-see attitude but have to start immediately planning a family business strategy, so as to take right decisions and start looking for new challenges. Those family enterprises which have not made a concrete strategy have lower stress tolerance and decision-making ability. Effective implementation of a strategy is always more complicated than strategy development, since the implementation of a strategy depends on efficient management. Implementation of a strategy often involves changes in the structure of family enterprises, some business processes need to be organised differently in order to achieve more effective results. For example, if to use a milking robot in cattle of 1000 head, the labour costs will decrease immediately – only one employee can be employed instead of previous 5. Most of the animal breeding family enterprises are focused on the Estonian market, but joint activity and exports would help to boost the economy. A possibility for family enterprises is cooperation, not only with cooperative societies but also with other family enterprises.

Hence many family enterprises need to reformulate their strategy, which is a precondition for surviving. It is very hard to explain to family entrepreneurs from older generations who are used to moving in a rut. In order to diversify family business they need many new skills: market evaluation, business administration, strategy development, customer service, teamwork, stress tolerance etc. Start-up entrepreneurs are in a better situation, they are more eager to learn, want to obtain knowledge and make the maximum use of opportunities for that: membership in cooperative societies, using consultation services and looking for contacts with family enterprises in the same area of activity. It is not enough to formulate a family business strategy; the strategy must be carried out successfully and purposefully.

Family enterprises need to pay specific attention to the family business strategy and strategic management in order to survive, especially in the current economic situation. Family enterprises must be ready for changes and a properly formulated strategy in writing would ensure that they are ready for that.

## **Conclusions**

The number of working-age people employed in agriculture and forestry has been decreasing from year to year; hence the human environment in rural areas needs to be enlivened, first of all development of agriculture. Working age people have started to return to rural areas – either to get peace and quiet, get away from urban noise, or to help parents, or because they could not pay for living in town and prefer settling down in the country. No jobs are waiting for those returning to the country, hence they need to start a business and it is taken for granted in rural areas that it is a family business. The Estonian legislation does not provide for the terms “family enterprise” or “family business”. The author takes that a family enterprise is an undertaking where members of the family of the undertaker take part in; family members are spouses, children, parents, siblings, aunts-uncles and their spouses. It is of no significance whether the conjugal relations are official or not, only cohabiting counts. Family enterprise is characterised by that family business is the main source of income for the family members. Family undertakings have often had to decide whether to choose family or business, entrepreneurs in rural areas have found that a family enterprise is the best option.

Family enterprises need to pay specific attention to family business strategies and strategic management in order to survive, especially in the present economic situation. Family enterprises must be ready for changes, and a properly formulated strategy in writing would contribute to them being ready indeed. Especially now that one cannot rely on success only in one field of activity, so as to diversify risks special attention should be focused on different levels of strategy planning. Many family enterprises have, in order to diversify risks, expanded their activity with strategies to other activities, for example, veterinary services, tourism, recreation, cattle breeding and poultry farming, forestry or agriculture. Strategies in a owner managed family enterprise are often worked out informally, they are not written down, but exist only in the owner’s head and have been orally communicated to family members and closest colleagues. Still, most of the family enterprises follow first the rules established by themselves and their feelings and only when the family business is not growing fast enough they start thinking about strategy development. These family enterprises which can promptly reorient themselves and amend the strategy achieve success and prevent the family enterprise from failing.

Most of the rural area family enterprises are focused on the Estonian market, but joint activity and export help to boost the economy. An opportunity for family enterprises is cooperation, not only with cooperative societies but also with other family enterprises. Hence many family enterprises need to refocus their strategy, a change which is a precondition for survival. Implementation of a strategy often involves changes in the structure of family enterprises, some business processes

must be organised in a different way to achieve more effective results. To diversify the family business they need many new skills in addition to those they already have: market knowledge, business administration, strategy development, customer service, teamwork, stress tolerance etc. Start-up family undertakings are more eager to learn and open, want to obtain knowledge and take the maximum from all opportunities: are members in cooperative societies; use consultation services and look for contacts with family enterprises in the same area of activity.

One cannot provide unambiguous instructions for family enterprises. What may work well for one family business, needn't work with the other. Every family enterprise needs to take such strategic decisions which are suitable for them only and take into consideration the abilities and specific qualities of their family business. Family undertakings are convinced that with a strong family and proper strategy they can ensure achievement of the objectives and earn profit. 98% of the owners of family enterprises investigated by us are actively participating in management of the family business. 40% of the family enterprises have properly formulated a strategy to ensure sustainable development of the family business. Strategies have been made in writing by formulating a specific vision, mission and objectives. All those family enterprises which have a family business strategy follow this strategy, annually modify the objectives and improve the methods in order to ensure better fulfilment of the short-term objectives. 58% of the beef cattle and 32% of the horse breeding family enterprises have a proper planning system, which helps them implement the family business strategy. Family undertakings wish, in order to be sustainable and competitive, financial assistance from the state.

The research confirmed that in-depth research is needed to map the position of family enterprises in the market, to analyse specific qualities of the organisation of family enterprises, to identify what kind of support and advice services family enterprises need in order to prevent problems that might arise with a generation change.

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# IMPACT OF CO<sub>2</sub> TRADE ON ELECTRICITY PRODUCERS DEPENDING ON THE USE OF DIFFERENT ENERGY SOURCES IN ESTONIA

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## Abstract

The aim of this paper is to identify the main circumstances related to the Estonian energy sector and economy and the facts which are important for development of the research conducted by the author and for clarification of the main viewpoints. The paper provides the principal facts on the first (2005-2007) and second (2008-2012) period of CO<sub>2</sub> (carbon dioxide) trade in Estonia; describes electricity production in Estonia on the basis of the electricity development plan effective in the reference year 2007 and proceeding from that – calculations of CO<sub>2</sub> emissions by kind of fuel used. The paper will touch upon the main legislative provisions concerning renewable energy support, which essentially influence the development of renewable energy generation and indirectly the CO<sub>2</sub> trade. Analogously with the reference year 2007 methods of calculation, CO<sub>2</sub> emissions have been calculated for 2020. The electricity production prognosis for the year 2020 is based on the interpretation of the electricity sector development plan. Computation according to the CO<sub>2</sub> calculation methodology shows that the CO<sub>2</sub> emission amount will be ca 5.7 Mt (million tonnes) in 2020. In 2020 compared to 2007, the domestic consumption of electricity is estimated to grow: in 2007 the domestic consumption of electricity was ca 8200 GWh, in 2020 it is estimated to be ca 10480 GWh, i.e. the growth is ca 22%. Decrease in the emission amount of CO<sub>2</sub> will be gained due to the expected use of different energy sources, compared to those used in 2007, in the designed power plants based on renewable energy sources or gas. The share of oil shale-based energy production will decrease from 83% to 44% resulting in a further reduction of CO<sub>2</sub> emissions from 12 Mt to 4 Mt. In view of the fact that, during consumption, the CO<sub>2</sub> emissions comprise nearly 60% of the gross consumption of electricity production, the research reveals that raising consumer awareness of the use of various energy saving equipment and the promotion of economical lifestyle involve a remarkable potential for reducing the amount of CO<sub>2</sub> emission. To ensure competitiveness of electricity producers in the free market conditions, influenced by CO<sub>2</sub> emission allowance trading, construction of the power plants in compliance with national regulations must be ensured with the help of support schemes, state aid, tax policies and legislative measures. Since the quota trade rules which will apply after the year 2012 are not distinctly clear yet, thus this topic will be developed further in the articles to come.

**Keywords:** CO<sub>2</sub> trade, energy sources, electricity production, Estonia

**JEL Classification:** Q410

## Introduction

Estonia has, together with other countries across the world, opted for a sustainable path of development where national welfare growth is based on the achievement of balance between the economical use of natural resources and the environment.

The European Union (EU) Directive 2003/87/EC of 13 October 2003 has established a scheme for greenhouse gas (GHG) emission allowance trading with the purpose to:

- Induce society to use resources more effectively and encourage innovations;
- Increase awareness of CO<sub>2</sub> (carbon dioxide) damage from fossil fuel combustion and their cost to society;
- Improve fulfilment of the obligations taken under the Kyoto Protocol for reducing greenhouse gas emissions.

CO<sub>2</sub> quota trade is a symbiosis of power engineering and financial world, which is important for all energy producers and other industries involved in the quota trade. Via energy prices, the CO<sub>2</sub> trade experts influence all enterprises which consume energy. This paper is one of the series prepared in the framework of the research “Impact of Greenhouse Gas Emission Allowance Trading on the Estonian Energy Sector”.

The main objectives of the research are:

- To describe the institutions involved in emission allowance trading, emissions trading registry, distribution and certification of emission quotas, and to identify the general economic mechanisms of the scheme and possible effects.
- To evaluate the impact of emissions trading on the economic performance of energy enterprises and their investments.
- Energy enterprises’ strategy for emissions trading (marginal cost curve, price of pollution quotas, organisation of emissions trading in practice, conducting of transactions, risk management).
- Trading in pollution quotas (quota market, price).
- To investigate the economic impact of the emissions trading international market on the energy sector.
- To examine the impacts of emissions trading via energy enterprises on the energy sector as a whole (utilisation of renewable energy, implementation of new combustion technologies).
- To study the economic impact of other flexible mechanisms laid down in the Kyoto Protocol (joint implementation, clean development mechanism) on emissions trading and energy sector.

The purpose of this paper is to identify the main circumstances related to the Estonian energy sector and economy and facts which are important for development of the research conducted by the author – *Impact of Greenhouse Gas Emission Allowance Trading on the Estonian Energy Sector*, and for clarification of the main viewpoints. The author of this study analyses the CO<sub>2</sub> air emissions from electricity generation on the basis of different fuel usage in the power production of Estonia by

applying a simple determination method intended for calculation of the carbon dioxide emissions into the ambient air. According to common knowledge, this analysis is novel for Estonia and such calculations have so far not been made for Estonia. Consequently, this gives a good opportunity for respective studies at the national level.

The main objectives of the paper are:

- To provide the principal facts on the first (2005-2007) and second (2008-2012) period of CO<sub>2</sub> (carbon dioxide) trade in Estonia.
- To describe electricity production in Estonia on the basis of the electricity development plan effective in the reference year 2007 and calculations of CO<sub>2</sub> emissions by kind of fuel.
- To touch upon the main legislative provisions concerning renewable energy support, which essentially influence the development of renewable energy generation and indirectly the CO<sub>2</sub> trade.
- To calculate CO<sub>2</sub> emissions for 2020 analogously with the reference year 2007 methods of calculation.
- To forecast electricity production for the year 2020 based on the interpretation of the electricity sector development plan.

Impacts of the European Union climate and energy package (will come into force in 2013) on the energy sector require further in-depth analysis and will not be discussed in this paper.

This paper seeks to identify the major energy sector and economy related circumstances and facts in Estonia that are important for further development and clarification of the research.

### **The EU GHG emissions trading scheme 2005-2007**

The first period of trading lasted from 2005 to 2007 (introduction) when the **CO<sub>2</sub> quota** (this analysis deals with the impact of CO<sub>2</sub> trade only) trading was mainly conducted only between EU Member States.

The GHG emissions quota trading scheme 2005-2007 was like a training stage. Their utility was limited as banking was missing between the first and second stages, and units were overpriced. Overpricing of the units led to that their price approached zero by the end of the period (Figure 1) because of a change in the demand-to-supply ratio as a result of active marketing activity of the industrial sector.



**Figure 1.** CO<sub>2</sub> trading opportunities for EGL (Elektrizitäts-Gesellschaft Laufenburg). (EGL 2008)

Figure 1 depicts the EUA (European Union Allowances) price fluctuations from December 2004 till April 2008. Sharp declines in May 2006 and in 2007 were caused by the situation in the market where, after the first certified emissions had been publicized, it turned out that there were actually more units available in the market than there was demand for them. In other words, until May-April 2006 when real emissions into the air in the first so-called trading year were identified, the ratio of the emission allowances available on the market to actual emissions was not yet known to the public (e.g. for 2005 the European Commission allocated the emission limit of 16,747,053 t/CO<sub>2</sub> to Estonia but the real emissions were 12, 621,824 t/CO<sub>2</sub>, or nearly 4 million tonnes of emission allowances were put on the market (Climate web 2010).

The so-called overabundance of vacant emission allowances on the market was indeed the cause which led to the decline that started in 2006 and lasted till the end of 2007 (when the so-called pre-Kyoto trading period in Europe came to an end).

### **The EU GHG emission allowance trading scheme 2008-2012**

By the start of the new trading period, or the so-called Kyoto first trading period in Europe (2008-2012), the European Commission had made extremely radical cut-back decisions in total emission allowances allocated to Member States (the so-called National Allocation Plan – NAP) to stabilise and prevent the situation which had dominated in the pre-Kyoto trading period. The results are shown in Figure 1, where the EUA price level is perceived to be more or less stable (which is the objective of the carbon dioxide market – real demand in the market determines the actual value of 1 tonne of CO<sub>2</sub>).

The CER (certified emission reduction) price development is affected by the fact that in the pre-Kyoto trading period operators had no right/opportunity to use emission units available in Kyoto flexibility mechanisms (flexible mechanisms are based on the following units: clean development mechanism – CDM: **CERs**, certified emission reductions; joint implementation mechanism – JI: **ERUs**, emission reduction units; emissions trading 2008-2012 – ET: **AAUs**, assigned amount units) for fulfilment of their obligations (the operator shall return to the State a number of allowances equal to the actual amount of emissions in the preceding year by 30 April of the year following the accounting year – the transaction takes place via a respective electronic register). In the Kyoto trading period, operators will have such a possibility within the limits allocated to each Member State (e.g. this percentage varies across European countries, but is on average between 10-20%). This means that when the EUAs allocated from NAP to an operator are not enough for the fulfilment of his obligations, he may buy from the market more Kyoto flexibility mechanism units within the nationally allocated limits.

For the 2008-2012 trading period, Estonia made a proposal to the European Commission (EC) for 24.4 million tonnes a year (122 million t/5 years). EC lowered the quotas to 12.7 million tonnes (63.5 million t/5y), i.e. by ca. 52%. 47 operators are involved in quota trading in Estonia, including 39 from energy production, 6 from mineral industry and 2 from paper and pulp industry. GHG emission allowance trading permits are issued by the Estonian Minister of the Environment pursuant to Regulation of the Government of Estonia No 257 of 20 December 2007, which establishes 1<sup>st</sup> January 2008 to 31<sup>st</sup> December 2012 as the period of GHG emission allowances from stationary sources of pollution. 11,678,257 tonnes are annually allocated to operators and 1,038,801 tonnes are annually kept in reserve for new operators entering the trading system.

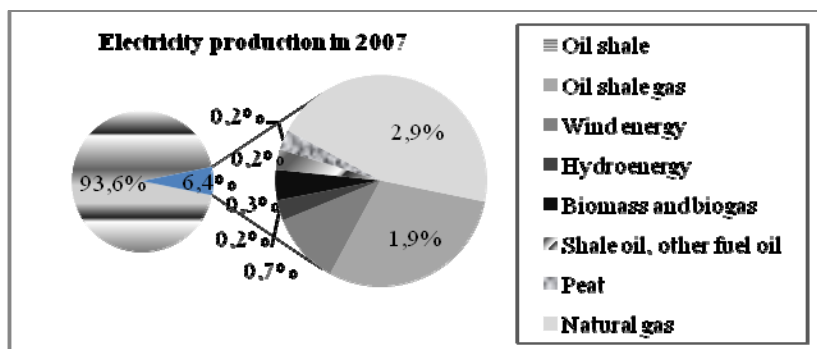
Estonia filed an action with the European Court against the European Commission (Judgement of the Court 2009), claiming that the Commission made grave mistakes in taking the decision and exceeded its authority. The Court agreed with Estonia and stated that the Commission had no authority to substitute in the assessment of NAP Estonia's data with its own, which among other things did not sufficiently take into consideration the Estonian energy policies and was not based on the correct GDP growth prognosis. Additionally, the Court verified a violation of the principle of good administration.

This court judgement means that the European Commission has to take new decisions regarding Estonia's pollution quotas. Estonia may not issue pollution permits until the European Commission has made a new decision. Considering the favourable situation in the previous so-called practicing period 2005-2007, according to which the reference year for the quota trading was 1990 and the reduction percentages for Estonia are governed by the Kyoto Protocol (Ratification of the Kyoto Protocol 2002), Estonia is facing a situation where in 2008-2012 it has to reduce emissions 8% against the 1990 levels. But, considering the actual situation of Estonia in the reference year (we were a part of the USSR and with a different economic structure) and our economic restructuring later, we are in a situation where

we have already achieved this target (National Inventory Report 2009). Several energy production enterprises used the favourable situation to improve their economic situation, for example, Eesti Energia AS (EE; 100% of shares owned by the Republic of Estonia), which in the 2006/07 financial year received approximately 95 M€ for selling emission quotas in the Nord Pool electricity exchange (EE's yearbook 2007/2008). In the financial year 2007/08, the impact of trading in emission quotas on economic performance reversed to -8.95 million EUR. Quotas were not sold in 2007 due to the lack of interest in the stock exchange, on the one hand; however, the significantly smaller than expected amount of quotas allocated to EE under the second NAP brought about a need to make additional expenditure for obtaining 2008 quotas. In the financial year 2007/08, EE was estimated to spend 8.95 million EUR (ca. 0.36 million tonnes CO<sub>2</sub>/25€/t) on buying quotas.

### Electricity production and CO<sub>2</sub> emission in Estonia in the reference year (2007)

According to the statistical overview Energy Balance 2007 prepared by Statistics Estonia (Energy balance 2007) (Figure 1, Table 2), Estonia produced **11402 GWh** of **oil shale**-based electricity, 350 GWh from natural gas, 235 GWh from oil shale gas, 22 GWh of hydro-energy, 91 GWh of wind energy, 36 GWh from other renewable energy sources and 22 GWh from peat.



**Figure 2.** Electricity output of 12188 GWh in 2007. (Development Plan of the Estonian Electricity Sector until 2018)

The reference year for energy production and consumption calculations is 2007, which is also the reference year for Development Plan of the Estonian Electricity Sector until 2018.

Estonia has always managed to cover its electricity demand and also exported electricity. According to the 2007 statistics, electricity production amounted to 12188 GWh (Table 1. Of this quantity, oil shale-based electricity accounted for 93.6%), which implies the amount of electricity measured at the power plant's turbine terminals. If to deduct from this power plant's own use (889 GWh), then the

amount transmitted via power networks to consumers is 11299 GWh. A part of it is consumed by local consumers and the other part is sold for exports (2765 GWh). After deducting network losses, domestic consumers consumed 7180 GWh in 2007.

**Table 1.** Electricity production and consumption in 2007 and CO<sub>2</sub> emission into the atmosphere

Consumer	Consumption (GWh)	CO <sub>2</sub> emissions from electricity production into the atmosphere (Mt)	Percentage of total consumption %
Consumption in Estonia	7180	<b>7.55</b>	<b>58.9</b>
Network losses	1354	<b>1.42</b>	<b>11.1</b>
Total consumption	8534	8.97	70.0
Export	2765	<b>2.91</b>	<b>22.7</b>
Network total	11299	11.87	92.7
Power plant's own use	889	<b>0.93</b>	<b>7.3</b>
<b>Gross production</b>	<b>12188</b>	12.81	100

Source: Statistics Estonia, author's calculations.

The quantity of CO<sub>2</sub> emissions into the ambient air from electricity generation and consumption in 2007 was found by calculating the physical indicators of various fuels used for electricity generation in Estonia and the specific CO<sub>2</sub> emissions from co-generation (1.05 ktCO<sub>2</sub>/GWh, Table 2).

CO<sub>2</sub> emissions have been calculated by using the determination method of carbon dioxide emissions into the ambient air (Välisõhku eralduva 2004). The special emissions of carbon from combustion of oil shale in Estonian power plants and from depositing shale ash are calculated by using the following formula:

$$(1) q_{c \text{ oil shale}} = 10 \left[ C^f + k(CO_2)_M^f \cdot 12/44 \right] / Q^f, \text{ tC/TJ}$$

where

Q<sup>f</sup> – calorific value of oil shale, MJ/kg;

C<sup>f</sup> – carbon content of oil shale, %;

(CO<sub>2</sub>)<sup>f</sup><sub>M</sub> – mineral carbon dioxide content of oil shale, %; (Ots 2004)

tC/TJ – tons of carbon to Tera Joule;

12/44 – C/CO<sub>2</sub> molecular mass ratio

k – product gained by multiplying the factors which take into account the extent of carbonate decomposition in oil shale combustion in boilers (k<sub>CO<sub>2</sub></sub>) and CO<sub>2</sub> binding in ash fields (k<sub>unbound</sub>) (in pulverised combustion k = 0.64, in fluidised bed combustion k = 0.40).

For calculating the real carbon emissions and carbon dioxide emission values, the actual amount of carbon content in the combusted fuel is multiplied by the value

characterising the oxidised part of carbon; the actual carbon emission value ( $Mc$ ) is calculated in gigagrams ( $GgC$ ) by using the following formula:

$$(2) \quad Mc = 10^{-3} \times B' \times q_c \times Kc$$

where

$B'$  – fuel consumption (TJ);

$q_c$  – specific carbon emission (tC/TJ);

$Kc$  – share of oxidised carbon.

The  $CO_2$  emission into the ambient air from combustion of a different kind of fuel ( $M_{CO_2}$ ) in gigagrams ( $GgCO_2$ ) is calculated by using the following formula:

$$(3) \quad M_{CO_2} = Mc \times 44/12$$

where

$Mc$  – carbon emission value ( $GgC$ ).

Total  $CO_2$  emission into the ambient air is calculated by summing up the  $CO_2$  emissions from combustion of all kinds of fuel.

$CO_2$  emission from combustion of oil shale in the co-generation regime (simultaneous production of electricity and heat) amounts to 12404 thousand tonnes (Table 2, second and fifth cells), while other fossil fuels emit into the atmosphere ca 3% compared to oil shale combustion. Wind energy, hydro-energy, nuclear energy, biomass and biogas as sources of energy are, according to the global agreement, regarded as sources not generating  $CO_2$ . Additional note: Estonia does not produce electricity on the basis of nuclear energy.

It is interesting that on the basis of data provided in Table 2, the lower scale of specific  $CO_2$  emissions includes also natural gas (fossil fuel). Natural gas burns more cleanly than other fossil fuels, such as oil shale and peat, and produces less carbon dioxide per unit of energy released. Is this the reason why Russia and the European Union have agreed upon building the Nord Stream gas pipeline? The underwater part of the pipeline starts from the Portovaya Bay near Vyborg and runs approximately 1200 km by the bottom of the Baltic Sea as far as to Greifswald in Germany.



**Table 2.** Electricity production in Estonia in 2007 on the basis of different fuels

Fuel used for electricity generation (thous. tonnes, million-m <sup>3</sup> )	Electricity production, (GWh (total))	Specific CO <sub>2</sub> emission for fuel (kg/MWh)	Electrical efficiency (total) $\eta$	Specific CO <sub>2</sub> emission per electricity production, kg/MWh
Oil shale	11402	359	0.33	1087.9
Peat	22	370	0.3	1233.3
Shale oil	30	276	0.3	920.0
Natural gas	350	201	0.35	574.3
Renewable sources	149			
Oil shale gas	235	201	0.32	628.1
	$\Sigma$ 12188			

Source: Statistics Estonia, author's calculations.

Oil shale-based electricity production efficiency has been calculated by taking into consideration that electricity is generated in fluidised bed combustion. We assume that the total efficiency of oil shale-based electricity is on average 33%. Shale gas as a product of *Eesti Energia Õlitööstus AS* is extracted in shale oil production and is burnt in pulverised combustion boilers at Narva Power Plants; thereby the efficiency is lower than in case of fluidised bed technology. *VKG Energia AS* is burning the gas generated in shale oil production in energetic boilers together with oil shale. The efficiencies of the co-generation regime of natural gas, peat, shale oil and fuel oil are, according to producers' information, between 0.3-0.35 or 30-35%.

Considering big reductions in the CO<sub>2</sub> quotas and the EU initiative for much more extensive use of renewable energy, the renewable energy generation is a rapidly growing sphere of activity. The main sources of renewable energy used in Estonia are wind and biomass and to a little extent also hydro and biogas.

The Electricity Sector Development Plan 2005-2015 established the objective to increase the share of renewable energy<sup>1</sup> (Renewable energy resources 2005) to 5.1% in total consumption by 2010 and to increase the share of electricity generated in combined plants of heat and electricity to 20% of total consumption by 2020 (European Renewable Energy Council 2009).

In 2007, renewable electricity accounted for 1.75% of total consumption. The potential output of new renewable electricity production projects that should be completed by 2010 will exceed the target (Kisel 2007).

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<sup>1</sup> Renewable energy resource or renewable source of energy is the energy resource that can be sustained indefinitely, e.g. waves, tides, solar energy, wind, geothermal energy, or which can be regenerated in the course of biological processes in the ecosystem (biomass and biofuel – timber, reed, energy forest, sugar cane etc) without their quantities being essentially reduced in a time span of human significance; is not subject to CO<sub>2</sub> emission trading scheme, the quota is 0.

## Support and subsidies for renewable energy

The cogeneration support schemes implemented in 2007 (Electricity Market Act 2003) to increase the share of electricity produced in combined heat and electricity plants to 20% of total consumption by the year 2020, have encouraged erecting of new cogeneration plants (in 2009 cogeneration plants were built in Tallinn and Tartu) and the share of cogeneration is increasing (a power plant is being erected at Pärnu and several small cogeneration plants are being planned in different regions of Estonia). The subsidisation<sup>2</sup> has sharply increased investors' and energy producers' interest in using biofuels.

With its resolution of 28<sup>th</sup> January 2010, the *Riigikogu* essentially amended the Electricity Market Act so that a producer has the right to receive support from the transmission network operator for the electricity supplied starting from 1<sup>st</sup> July 2010 if it is generated from biomass in efficient cogeneration regime, unless electricity from biomass is produced in the condensation regime.

The Republic of Estonia also promulgated (Decision No 621. 2010) the law amending the Electricity Market Act, which was passed by the *Riigikogu* on 28<sup>th</sup> January 2010. At the same time, the President sent the Chancellor of Justice a letter requesting that he should pay special attention to a provision of the aforementioned Act, which will abolish as of 1<sup>st</sup> May 2007 the support for operators who generate electricity from biomass in summer.

The President can only reject a law as a whole. This would mean that provisions which are in line with the Constitution and must be passed as soon as possible to open 35 per cent of the Estonian electricity market as of 1st April 2010 and to avoid threatening of the construction of an EU supported second submarine communications cable between Estonia and Finland, would also remain ineffective. The Chancellor of Justice has the right to contest single provisions of any law, if appropriate.

In 2009, the Minister of the Environment with his Regulation No.14 approved of the structural aid award measure for more extensive use of renewable energy sources for energy generation. The purpose of the aid was to increase the share of renewable energy sources in the energy balance and to reduce pollutant emissions from the energy generation system. This Regulation should increase producers' and investors' concern for the energy production development in different regions of Estonia and disperse energy concentration in the eastern region.

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<sup>2</sup> For example, peat fuel boiler houses operating in efficient co-production regime are paid for produced and net transmitted electricity according to the Estonian Electricity Market Act, which is 81 cents/kWh (Estonian currency, 1EUR=15.6466EEK), or receive subsidy 50 cents/kWh, correspondingly. For using wood fuel (as a renewable fuel), the subsidies are significantly higher: subsidy of 80 cents/kWh or electricity sold to the net for the price of 115 cents/kWh.

## **Main provisions and scenarios in the electricity sector development plan**

The Development Plan of the Estonian Electricity Sector (Development Plan of Estonian Electricity Sector 2009) underlines that oil shale is a strategic mineral resource for Estonia and electricity generation from oil shale is a characteristic of the Estonian energy sector – nearly 94% of electricity is produced from oil shale.

Considering the best scenario set out in the electricity sector development plan (Table 3), the capacity of co-generation plants must be increased to 300 MW (net capacity during peak hours 260 MW) by 2014; 2x300 MW oil shale fluidised bed combustion units (net capacity 270 MW) should be erected by the end of 2015; by 2012, desulphurisation and denitrification systems (net capacity of 4x150 MW) must be installed in four of the existing old 200 MW oil shale units; by 2013, the capacity of on-shore wind turbines must be increased to 400 MW (Table 3). The decisions concerning the investments in all these capacities shall be made before the end of 2010. For that purpose, application programme of the electricity development plan for 2009-2010 and prognosis up to year 2018 were approved by the Government of the Republic of Estonia. Since then the following has been done: 13<sup>th</sup> March, the Board of Eesti Energia AS (BEE) signed a contract with the company Alstom for the installation of desulphurisation system (4 units) for the Eesti Power Plant oil shale pulverized energy blocks; on 21<sup>st</sup> May 2009, BBE took a decision to construct 2x300 MW oil shale fluidised bed combustion units (the procurement process in progress); on 16<sup>th</sup> July 2009, the Baltic Republics' most powerful Wind Park (Aulepa) with the capacity of 39 MW was opened in Noarootsi Municipality; on 17<sup>th</sup> December, BBE approved of the construction of Waste to Energy Block (50 MW<sub>th</sub> and 17 MW<sub>e</sub>) at Iru Power Plant (in March 2010, a contract was signed with the enterprise CNIM) (Eesti Energia 2009).

The subsequent increase in the capacity of wind parks (included in the list of renewable energy sources and has a positive effect on the CO<sub>2</sub> trade balance) is most expedient on the sea, but this matter requires further studies. Production capacities must be constructed in the range of the capacity of wind turbines to balance the instability of the production of wind turbines and also to cover the consumption peaks. Partial closure of the units supplied with purification equipment in Narva Power Plants may be considered after putting the shale oil fired gas turbines into service presumably in 2018.

A need to increase the capacity of emergency reserves in 2016 is conditioned by the erection of the submarine cable Estlink 2 (with the estimated capacity of 600 MW).

Such an increase in transmission capacity is also a precondition for future integration of the Baltic Republics' energy market into the Nordic power exchange Nord Pool Spot. Moreover, the new link will increase the reliability of the Baltic energy systems, at the same time reducing their dependence on Russia. Advantages of the second cable between Estonia and Finland were analysed in a cross-regional study with the participation of Nordel, BALTSO and Polish regions, which was

completed in February 2009. The results show clearly that the cable will be socio-economically useful for the Baltic Sea region (Figure 3).



**Figure 3.** Integration of the Estonian electricity network into the neighbouring countries' network in 2010.

Capacities of the emergency power installations can be used also for ensuring the reserve capacity of nuclear power plants (in CO<sub>2</sub> trade nuclear installations are regarded as not emitting carbon dioxide). All gas turbine installations must be capable of using at least two types of fuel, preferably domestic resources and renewable sources of energy (author's remark).

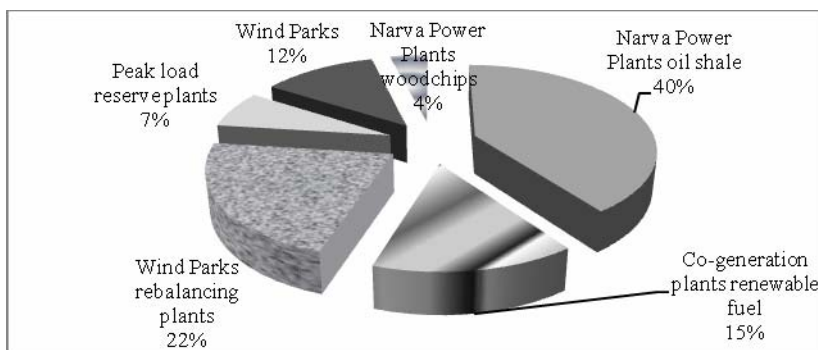
The electricity production of every power plant depends on the market situation in a particular year and therefore it is nearly impossible to predict the volume of their electricity production. Electricity market regulation must guarantee that the structure of production capacities in Estonia is diverse and we have sufficient production capacities in case it is not possible to buy electricity cheaper elsewhere. However, a justified question arises in the case of importing cheaper electricity (for example, from Russia) about the true existence of the so-called clean electricity certificate. In

a free market situation, electricity producers face an unequal competition situation in case of cheaper electricity inflow from third countries.

### Electricity production under free market conditions

On the basis of 2020 prognoses, the situation should change fundamentally (Table 4, Figure 4), i.e. the share of oil shale-based electricity generation will decrease to ca. 40%, whereas the share of renewable energy will increase to the approximate level of 31%.

The results gained by using the CO<sub>2</sub> calculation methodology show that the CO<sub>2</sub> emission amount will be ca. 5.7 Mt (million tonnes) in 2020. In 2020 compared to 2007, the domestic consumption of electricity is estimated to increase: in 2007 the domestic consumption of electricity was ca. 8200 GWh (Table 1, export and transmission losses excluded) and in 2020 it is estimated to be 10480 GWh, i.e. the growth is ca. 22% (Table 4). Decrease in the emission amount of CO<sub>2</sub> will be gained due to the expected use of different energy sources, compared to those used in 2007 (Figure 2), in the designed power plants based on renewable energy sources or gas (Figure 4). The share of oil shale-based energy production will decrease from 83% to 44% resulting in a further reduction of CO<sub>2</sub> emissions from ca. 12 Mt to 4 Mt.



**Figure 4.** Electricity production in Estonia in 2020. (Author's calculations)

**Table 3.** Electricity production development trends until 2020

Type of power plant	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Co-generation plants	150	200	220	240	260	260	260	260	260	260	260
Oil shale-based plants	1660	1660	1630	1630	1630	2170	1520	1520	920	920	920
–not renovated	1280	1280	640	640	640	640					
–fluidised bed	380	380	380	380	380	920	920	920	920	920	920
–with purification equipment			600	600	600	600	600	600			
On-shore wind farms*	150	200	200	400	400	400	400	400	400	400	400
Balancing units for wind power							200	200	500	500	500
–including oil shale-based gas turbines							200	200	500	500	500
Peak reserves**	100	100	100	100	100	300	300	300	300	300	300
Emergency reserves**				100	200	300	300	300	600	600	600
<b>Total guaranteed production capacity</b>	<b>1810</b>	<b>1960</b>	<b>2150</b>	<b>2470</b>	<b>2590</b>	<b>3230</b>	<b>2980</b>	<b>2980</b>	<b>2980</b>	<b>2980</b>	<b>2980</b>

\* The capacities are not taken into account in the total guaranteed production capacity

\*\*Capacities under 100 MW

Source: Development Plan of the Estonian Electricity Sector until 2018.

**Table 4.** Projected electricity production and CO<sub>2</sub> emission values in 2020

Type of power plant	Capacity	2020	Output	Division	Specific CO <sub>2</sub> emission t/GWh	CO <sub>2</sub> emission from electricity generation (Mt)
	MW	Working hours*	GWh	%		
Co-generation plants	260	6000	1560	14.9	0	
Oil shale based power plants	920	5000	4600	43.6		
-including oil shale 90%			4140	39.5	997,2	
-wood chips 10%			460	4.4	0	
On-shore wind farms**	400	3000	1200	11.5		
Off-shore wind farms**	500					
Balancing units for wind power	900	2600	2340	22.3	502,5	
Peak reserves	300	2600	780	7.4	502,5	
Emergency reserves	600					
<b>Total</b>	<b>2980</b>	<b>3517</b>	<b>10480</b>	<b>100</b>	<b>0</b>	<b>5.7</b>
Total renewable electricity	1160		3220	30.7		
Total oil shale			4140			
Total natural gas			3120		0	

\* Projected working hours of power plants.

\*\* The capacities are not taken into account in the total guaranteed production capacity.

Source: Author's calculations.

## Conclusions and discussion

In 2007 Estonia generated 12.2 thousand GWh or 12.2 TWh (terawatt-hours) of electricity, including 8.2 TWh for domestic consumption after deducting export losses. The domestic production projected for 2020 is ca. 10.5 TWh, which makes an annual growth of ca. 2.2%. The transmission network operator (now called Elering OÜ) has planned 1.8-3.5% for annual electricity production growth (Development Plan of the Estonian Electricity Sector 2009; Elering OÜ 2009), which is associated with the economic growth of 3-7%. Elering's plans coincide with the author's prognosis.

According to the National Allocation Plan 2008-2012, quotas are allocated to the energy enterprises participating in the CO<sub>2</sub> emission allowance trading scheme in the amount of 12.7 MtCO<sub>2</sub> annually. Hence, considering the 2.2% growth of electricity production, we are short of relevant quotas (12.8 MtCO<sub>2</sub>/y2007) which we need to obtain from the trade sector. In case the European Commission respects the judgement of the European Court to re-negotiate the quotas allocated to Estonia in a positive direction for Estonia (in which the author doubts), then Estonia will have excess carbon dioxide quotas (ca 12 Mt/y) and energy producers will have an opportunity to avail them to make energy generation more effective and consumer friendly.

Considering the prognosis that electricity exports will remain on the level of 2007 (Table 1), i.e. ca 3 MtCO<sub>2</sub>, the CO<sub>2</sub> emission values in 2020<sup>1</sup> would be ca 9 MtCO<sub>2</sub>, i.e. ca 30% less than in 2007.

On the basis of calculation results presented in Table 1 we can see that energy can be saved and CO<sub>2</sub> emissions reduced not only by reduction of the fossil fuel usage (for example, implementation of a different economic structure from year 1990 in Estonia, usage of different renewable fuels, etc.), but the relevant spheres where energy can be saved and CO<sub>2</sub> emissions reduced are: energy consumption (the CO<sub>2</sub> emission level ca. 60% of total production), electricity export (correspondingly ca 23%), a smaller effect of network losses (11%) and plant's own electricity use (7%). These intermediate stages concerning the whole power system should constitute the main study targets either when choosing energy efficient products, auditing one's home energy use, implementing energy smart plans when building a new home or saving on transportation costs.

From 2013 the European Union Energy and Climate Package (European Parliament 2010) will take effect. In the framework of this Package, the EU Heads of State and Government set a series of demanding climate and energy targets to be met by 2020 – reduction in EU greenhouse gas emissions of at least 20% below 1990 levels; 20% of EU energy consumption to come from renewable resources; 20% reduction in primary energy use compared with projected levels, to be achieved by improving

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<sup>3</sup> As the quota trading rules for the period after 2012 are not clear yet, this topic will be developed further in the next market analyses and studies.



energy efficiency. This subject is not analyzed in this paper, but will be elaborated in future research.

In order to implement the best scenario described in the Development Plan of the Estonian Electricity Sector until 2018, so as to ensure the competitiveness of electricity producers in the free market conditions influenced by the CO<sub>2</sub> emission allowance trading, the erection of power plants (Development Plan of the Estonian Electricity Sector 2009) must be ensured under national regulations with the help of support schemes, state aid, tax policies and legislative measures. The CO<sub>2</sub> quota allocation policies after 2012 require further in-depth analysis and will be discussed in the next articles.

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# A POLICY FOR DEVELOPMENT OF PROJECT MANAGEMENT

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## Abstract

The share of temporary tasks and activities organised through projects and/or programmes is increasing in modern societies and also in businesses, non-profit and public organisations. To manage an increasing load of projects and programmes, the majority of organisations employ more skilled project management professionals and develop their project management capabilities. Against that background, most governments globally have not paid much attention to the development of project management. In other words, the project management capability (or maturity) has not been a macro-level or policy concern. The article explores the importance of project management capabilities and the need for suitable policies, and outlines a policy for the development of project management.

**Keywords:** economic policy, entrepreneurship, project management, projectification and programmification, project orientation, entrepreneurial orientation

**JEL Classification:** D78, E61, G38, I28, L26, L53

## Introduction

In contemporary societies we can observe an increasing share of temporary tasks and activities which are – or at least should be – organised and managed through projects and/or programmes. It means that projectification (or projectization, project orientation, etc.) is taking place everywhere – in businesses as well as in non-profit and public organisations, influencing all levels from a single individual to society as a whole. The increasing load of projects and/or programmes forces organisations to employ more skilled project management professionals and to develop their project management capabilities. Against that background it should be acknowledged that the overwhelming majority of governments globally have not paid much attention to the development of project management. In other words – the project management capability (or maturity) has not been recognised as a macro-level or policy concern.

The article has a dual objective: to explore the importance of project management capabilities and the need for suitable policies; and secondly, to outline a policy for the development of project management. The first section provides a brief overview of the essence and development of project management (as a practice field and an academic discipline). The second section relates project management to coherent disciplines. The third section unfolds the relevancy of project management and advocates the need for a suitable policy. The fourth section reviews entrepreneurship policy from the viewpoint of using it as a basis for project management policy. The last (fifth) section outlines a policy for the development of project management and presents main common points of these two policies.

## 1. The Essence and Development of Project Management

Project Management (hereinafter PM) is an ‘ancient’ phenomenon, used throughout the recorded human history and even before it. Understandably, there is not much evidence from pre-historic period, but Cleland and Ireland (2006) see three types of evidence – artefacts (like the Great Pyramids), cultural strategies (like the *Magna Carta*), and literature and documents. Moreover, they (*Ibid.*) rely on a widely used example of a pre-historic project – the building of the Ark by Noah.

Perhaps nobody doubts that the mankind has used PM for a very long time, but as (academic) discipline and profession, PM is surprisingly young. For instance, cited before Cleland and Ireland (2006) pointed out that only in 1950s PM was formally recognized as a discipline and in even early 1970s PM was regarded as ‘accidental profession’. In spite of that, the new profession was defined in the late 20<sup>th</sup> century.

As projects and PM have been used for thousands of years, it must not be surprising that common understandings and definitions have also changed. At the time, it may be surprising that up to now a variety of definitions is used both for project and PM. In-depth look and comparison of definitions does not fit the scope of this paper, but Cleland and Ireland (2006) point out that PM (in whatever form, even rudimentary) has been used to create change or deal with change in societies. The prior statement is important because it links PM to innovation since ancient times. Most scholars agree that contemporary PM came into being in 1950s. During these 50-60 years the discipline has evolved noticeably and is defined in PM literature.

Within the last decades PM has been promoted by professional associations. The leading global PM organisations are the Project Management Institute (PMI)<sup>1</sup> and the International Project Management Association (IPMA). There are also regional organisations (like the Australian Institute of Project Management – AIPM) and national professional bodies in most countries. Professional organisations define PM in specific documents, called Bodies of Knowledge (PMI) or Competence Baselines (IPMA) or just Competency Standards (like AIPM). These competency standards are valid for the members of particular association, especially for those who apply for professional certification.

It is generally accepted that the PM discipline has appreciably evolved and (despite a lack of solid evidence) it is often claimed that the use of projects as a form of work has increased (Cicmil *et al.* 2009). This process is also called ‘project orientation’ or ‘projectization’ and/or ‘projectification’.

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<sup>1</sup> Both PMI and IPMA are acting worldwide, but are different anyhow.

PMI ([www.pmi.org](http://www.pmi.org)) is more unified, consisting of chapters (currently more than 250 chapters in more than 70 countries/states), the headquarters are in Pennsylvania, USA.

IPMA ([www.ipma.ch](http://www.ipma.ch)) is an ‘umbrella’ for national associations (currently 50 associations in all continents), started in Europe and has spread to Americas, Asia, Africa and the Middle East.

Direct membership of IPMA is possible only when there is no national association.

AIPM ([www.aipm.com.au](http://www.aipm.com.au)) was independent until September 2009, when it joined IPMA.

The concept of project orientation by Gareis (2004) considers that companies are becoming more project-oriented. Gareis (2002) expanded this concept as well for societies<sup>2</sup>, because more projects and programmes are performed also in new social areas, such as (small) municipalities, associations, schools and even families. Gareis (2002, 2004) has also developed maturity models for project-oriented companies (or organisations) and societies and used these maturity models for benchmarking and assessment of the PM competences of various societies and companies.

Projectization is a relatively older phenomenon. Since the mid-1960s it has been often claimed that our society is becoming increasingly projecticised, i.e. organised in terms of time-limited sequences of (inter)action. This development, which has affected even personal lives of people, was caused by increased use of the project work form; and also by increasing tendency to view ongoing processes (or “business-as-usual”) as limited in time and scope. (Packendorff 2002) According to Ekstedt *et al.* (2005), projectization is a typical trend for neo-industrial organisations, which is playing a crucial role in many interesting developments – including the labour market, which might be affected by increasing projectization.

The term projectification appeared in the middle of 1990s in the article of C. Midler (1995), examining Renault’s journey towards project orientation. The concept of project orientation was taken from Gareis earlier (1989) publication ‘Management by project: the management approach for the future’. This heading indicates that this domain (project orientation, projectization / projectification) appears under different labels – ‘management by projects’ has (nearly) the same meaning.

Maylor *et al.* (2006) reviewed the evolution of projectification and introduced a new phenomenon ‘programmification’, standing for implementation of programmes and programme<sup>3</sup> portfolios as management mechanisms in organisations. They claimed that projectification has considerably extended the definition of project and noted that projectification has not been a panacea for individuals or organisations and its cost-benefit balance has to be critically assessed. Besides that, they adjusted the understanding of projectification, eliciting that its novelty was not in the trend of organising work through projects but in the organisational changes that accompanied this trend. Finally, they suggested that “... whilst project-level analysis is important and still has plenty of potential to explore, the multi-project level presents an area of great interest for both practitioners and scholars.” (*Ibid.*) Consequently, it represents a promising research agenda and this idea has already been developed further – like in the concept of “project business” by Artto & Kujala (2008).

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<sup>2</sup> Gareis (2002) uses a construct ‘project-oriented society’ (POS) for a society, which applies frequently projects and programmes, and provides project management-related education, research and marketing services.

<sup>3</sup> The cited source speaks about programme portfolios, but more customary term is project portfolios. By widely used definitions, programmes consist of projects, but it is not obligatory to combine (all) projects into programmes – some projects may be stand-alone, but these should be also counted into the project portfolio of an organization.

## 2. The Relations of Project Management

An important aspect regarding PM (including the relevancy of PM) has already been explored in the overview presented before. As Cleland and Ireland (2006) revealed, PM is used to create or deal with change in societies. This links PM to innovation since ancient times. The importance of innovation is definitely acknowledged in academic literature, as well as in policy documents (like CIP 2005), therefore longer discussion could be omitted here. Entrepreneurship and innovation, as well as pertinent policies are also tightly linked: this is evident in policy documents (CIP 2005) and in academic literature, for instance Drucker (1985) and Acs *et al.* (2009).

As there are inherent links between project management (PM) and innovation, and between innovation and entrepreneurship, one can assume that there is also a link between PM and entrepreneurship, but when looking at academic literature, these two fields seem to be not linked at all. However, there have been some essential developments during the recent years. Precisely, a new subtopic has emerged within the past years – PM in small and medium enterprises (hereinafter SMEs<sup>4</sup>). Until the very recent years, the PM literature almost entirely<sup>5</sup> focused on large organisations. The breakthrough was made by Rodney Turner, Ann Ledwith and John Kelly (2009) stating that “*SMEs do require less-bureaucratic versions of project management...*” and pointing out that there is a “*... need for further research into the nature of those ‘lite’ versions of project management designed for SMEs*” (*Ibid.*). Therefore we can say that PM and small business management are linked – somehow already during decades (a proof is the book (1984) of Kerzner and Thamhain), but considerable development is probable in the near future.

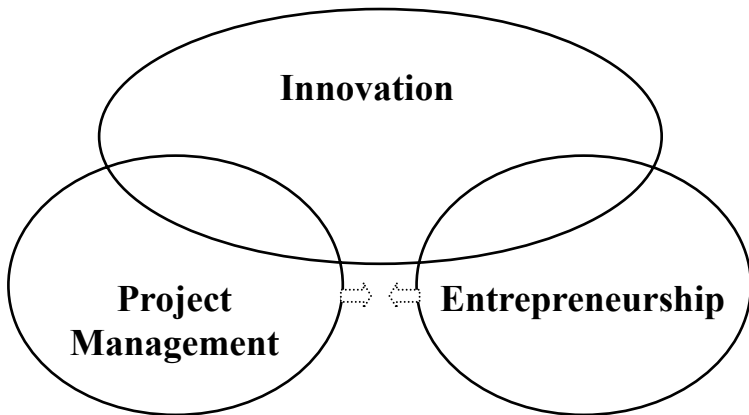
The link between PM and entrepreneurship may seem still open. So the question is – are small business management and entrepreneurship (exactly or at least nearly) the same or not? The mainstream answer could be yes (see Acs *et al.* 2009), even though some aspects are not yet unambiguously clear for small business management and entrepreneurship scholars. Furthermore, the situation is changing. The specificity of small organisations has not interested the researchers for a long time in the past, but developments can be seen in most fields in the last decades. For instance, strategic management, which was considered relevant only to large enterprises, has acquired a considerable position in small business literature (Birley 1994). In order to obviate long discussion, let us just elicit that only small (and perhaps also medium) business can be the really entrepreneurial ones; big organisations (even if they are fully private) are usually tangling in bureaucracy (Acs *et al.* 2009). In literature there are concepts like intrapreneurship, which could help to turn bigger organisations more entrepreneurial, but there are certain limits to apply them in practice.

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<sup>4</sup> The European Commission (2005) defines SMEs in following subcategories: medium – up to 250, small – up to 50 and micro – up to 10 employees. These subcategories have only upper limits: smalls can be counted into mediums, micros into smalls and mediums.

<sup>5</sup> A notable exception should be mentioned here – a book by Harold Kerzner and Hans Thamhain ‘Project Management for Small and Medium Sized Businesses’ (Wiley 1984).

Preceding brief discussion of interrelations of innovation, entrepreneurship and PM is shown (in a more visual way) in Figure 1. As seen on the figure, the role of a link between entrepreneurship and PM is (at least so far) realised by innovation.



**Figure 1.** Mutual Relations of Innovation, Entrepreneurship and Project Management.

Although there is not (yet) direct link between entrepreneurship and PM, the dashed arrows allude to possible rapprochement. However, there is still a distance (or empty space) between these professional fields, as well as between academic disciplines. The relations of entrepreneurship and PM deserve a special treatment, which does not fit into the scope of a conference paper; however, some parallels will appear in the brief survey of entrepreneurship policy and entrepreneurship, following later.

### **3. The Relevancy of Project Management**

In cited before article Turner *et al.* (2009) also emended the existing understandings of the relevance of PM. Relying on (actually commonly known) realities that SMEs play an important role in all national economies<sup>6</sup>, they claimed that PM can play a significant role in facilitating SMEs and their contribution. This claim is based on their finding that in average projects account for one third of the turnover of SMEs. Thus, projects in SME sector account for about one fifth of the economy. This is more than Western economies spend on large infrastructure projects, but regrettably, projects in SME sector deserved almost no attention in PM literature. In parallel, the topic of large infrastructure projects is quite popular in PM literature. (*Ibid.*) As their statement is based on a rather small sample – 280 companies, the generalisation of their results may be a somewhat doubtful, but nevertheless, their statement sounds credible – especially in contemporary projectified society.

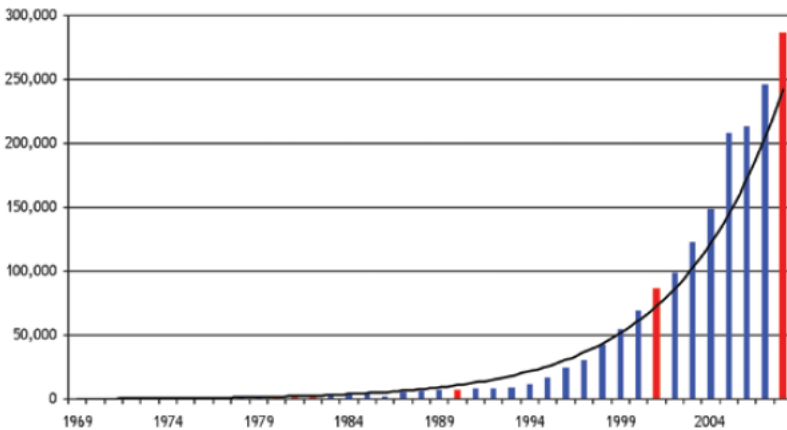
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<sup>6</sup> For instance, in EU the SMEs generate 56% of GDP and 70% of private sector employment.

An important contribution of Turner *et al.* (2008) is concretisation of total share of project-based activities in world economy. Taking into account the share of projects in SME sector and the share of new capital formation<sup>7</sup> (large infrastructure projects) they claimed that about one third (1/3) of the world economy is done via projects. It could be said even at least one third, because only SME sector projects give one fifth and adding another (even more than) one fifth by new capital formation, the sum is forty percent. Nevertheless, as the data about the share SME sector projects are from developed economies, it is correct to summarise them with the share of new capital formation in developed countries. In developing countries, where the share of new capital formation is bigger, the share SME sector projects may be lower.

Perceiving that the total share of project-based activities in the world economy is (at least) one third, it is astonishing that governments do not give much credit to PM. Turner *et al.* (2008) give also positive (in some measures) examples like China, UK and Australia, but most of countries do not really care much about PM. Besides the governments, the academic (management) community does not treat PM seriously. For example, no department in business schools in US has PM in its name and Journal of Management does not include PM in its list of key words. Because of all afore-mentioned, Turner *et al.* (*Ibid.*) called PM as ‘Cinderella subject’.

Despite of its ‘Cinderella-status’ regarding academic (management) community and governments, the popularity of PM as a practice field has grown at exponential rates during the recent decades. The exponential growth could be seen mainly in the membership of leading professional associations like PMI (see Figure 2).

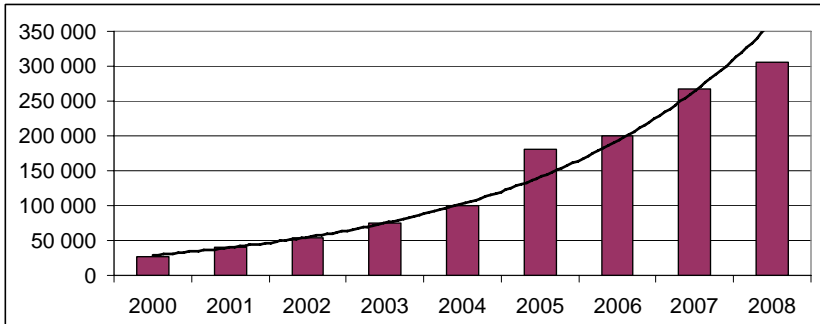


**Figure 2.** PMI Membership Growth in 1969-2008. (PMI 2009)

<sup>7</sup> Turner et al. (2008) stated that 22% of the global economy is spent on new capital formation, but there are differences by countries – in US & UK 16%, in India 24%, in China 38%.



Nearly the same (but more linear) trend could be seen in the total number of issued PMP<sup>8</sup> credentials, presented in Figure 3.



**Figure 3.** Total number of issued PMP credentials (2000-2008). (PMI 2009)

Spectacular growth of PM as a practice field can be explained by overall demand for workforce in project-oriented occupations, which have been growing faster than in other occupations. According to PMI (2009) this trend is continuous – in U.S from 2006 to 2016, employment in project-oriented occupations across all industries will grow an average of 1.5% while the average across all other occupations will be 1%. It is reasonable that even greater demand of project-oriented workers is expected in projectised industries, which account for nearly one-fourth of GDP of US. Besides, these industries are growing faster than the overall economy. From 2006 to 2016 in US the GDP of projectised industries will grow about 5.6%, compared to 3% for total GDP growth. The most remarkable tenor of PMI is probably in the statement that “... the current global economic situation (the global crisis or decline – AK) will not affect this long-range growth” (*Ibid.*).

Another proof for the increasing popularity of PM is the development of education and training. A perfect example could be China, where more than 100 master-level curricula in PM have been opened recently (PMI 2009). Similar developments are taking place globally, but despite of that, PMI is worried about the situation. Nearly any large company in US has already had difficulties in recruiting and retaining PM professionals. The situation will probably become worse because of the retirement of currently working PM professionals. It means that much more people should be educated and trained to overcome the critical shortage of PM professionals. (*Ibid.*)

Perhaps the presented reality is convincing that the governments all over the world should start paying attention to the development of PM or – in other words – there is a need for appropriate policy.

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<sup>8</sup> PMP (Project Management Professional) is the most popular credential (or qualification), issued by PMI (Project Management Institute) (PMP Credential Handbook 2009).

#### 4. Entrepreneurship Policy as a Basis for Project Management Policy

Like PM, the term entrepreneurship is also standing for a phenomenon and/or for an academic discipline. Characterising entrepreneurship in academic literature, we can see word(ing)s like eclectic (Verheul *et al.* 2001) or lacking a conceptual framework (Shane and Venkataraman 2000). This is certainly not usual for a ‘solid’ academic discipline and relying on that parallelism we can say that entrepreneurship is another ‘Cinderella subject’. Continuing with drafting parallels, it should be pointed out that entrepreneurship (or entrepreneurial behaviour) is also probably as old as mankind. At the time, some scholars are more positive about entrepreneurship. For instance, Davidsson (2003) perceives significant progress in entrepreneurship research and the ‘emerging field’ is promising, as Shane and Venkataraman (2000) pronounced.

The (new) entrepreneurship policy (or E-policy<sup>9</sup>) has grown out of traditional SME policy, but differs from its precursor by two important distinctions. Firstly, it focuses on enabling, rather than constraining of economic actors. Secondly, its orientation has changed, following the changed role of entrepreneurship in society. During the post-World War II era, the importance of entrepreneurship seemed to be fading, but nowadays entrepreneurship has been recognised as the driver of economic and social development. (Audretsch 2002) Compared to (traditional) SME policies, E-policies have a much broader focus. Whereas SME policies are mostly targeted at existing enterprises, E-policies include also potential entrepreneurs. It means that E-policies are more process-oriented, while SME policies are focused on organisational units on the enterprise-level. E-policies encompass multiple organisation units, ranging from individuals to enterprises, as well as clusters or networks, which might involve a sectoral and/or spatial dimension – a city or region, or even country. Nevertheless, Audretsch (*Ibid.*) considers it important to emphasise that SME policy still remains at the core of E-policy, but the latter tends to be more systematic.

Audretsch (2002) points out another distinguishing aspect. Traditional SME policies were implemented by ministries or specific government agencies, which exist in (almost) every country and by now there are well established policy instruments to promote SMEs, but there are no institutions for the promotion of entrepreneurship. E-policies cover a broad spectrum and belong to a number of ministries/agencies, from education to immigration, trade, etc. Thus, no agency exists (and probably can not exist) for a real E-policy.

Lundström and Stevenson (2001) also speak about evolution from SME policy to entrepreneurship policy and underline that the move to E-policy is quite recent. They also provide a historical overview on SME policies and point out that the forerunner of E-policy was born in the beginning of 1950s. It is noticeable that we can observe concurrences with the chronology of first courses in the field of entrepreneurship (eWeb 2006). These coincidences are probably not accidental and so we can say that entrepreneurship policy is as old as entrepreneurship (as academic discipline).

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<sup>9</sup> Abbreviation ‘E-policy’ was introduced by Lundström and Stevenson (2001), but because prefix E (or e) is widely used for ‘electronic’ (mail etc), this clarification is probably necessary.

In the path to E-policy, Lundström and Stevenson (2001) point out its basis – the efforts to increase the supply of entrepreneurs in the economy, what should lead to the creation of new firms. According to their view, governments develop the SME sector using a set of policies – Policy Mix, which change in content over time.

A traditional (SME policy) policy mix consists of four elements (*Ibid.*):

- 1) Ensuring efficient functioning of markets and institutions through the adjustment of legislation and regulations;
- 2) Provision of information and advice;
- 3) Provision of debt and equity financing;
- 4) Provision of tax incentives.

Moving to E-policy, the mix broadens to encompass another four elements (*Ibid.*):

- 5) Elimination of barriers to entry;
- 6) Promotion of entrepreneurship;
- 7) Entrepreneurship education;
- 8) Creation of new structures, products and services to meet the needs of new starters and under-represented target groups.

In addition they (*Ibid.*) mention that movement towards entrepreneurship policy will be associated with promotion of entrepreneurial culture.

Lundström and Stevenson (2001) also provide a typology of E-policy, but they have not built their on “an empty place”. For instance, they refer to Verheul *et al.* (2001), who outlined five types of policy intervention influencing entrepreneurial activity. The most important contribution of Lundström and Stevenson (2001) is unfolding a set of different E-policy orientations and organising them into a set of Entrepreneurship Policy Typologies. Briefly these typologies are (*Ibid.*):

- **SME Policy ‘Extension’** – new elements figure as ‘add-on’ to existing SME programmes and services, but entrepreneurship education and promotion of an entrepreneurship culture are not normally strategically addressed.
- **‘Niche’ Entrepreneurship Policy** – entrepreneurship efforts are formulated around specified population groups. There are two types of ‘niche’ policies:
  - 1) targeted on groups those are under-represented as business owners – women, youth, ethnic minorities, unemployed, etc;
  - 2) targeted on people with the highest potential for starting high-growth firms – researchers, etc., named also ‘techno-entrepreneurship policy’, because the focus is on R&D support, venture capital support, university-based incubators and incentives for graduates and researchers to build technology-based firms.
- **New Firm Creation Policy** – focusing on facilitating the business creation; could be devoted to encouraging start-ups among specific target groups like women, etc.
- **Holistic Entrepreneurship Policy** — cohesive approach, encompassing all of the policy objectives and measures and integrating other E-policy types.

Authoring this typology, Lundström and Stevenson (2001) point out a quite common problem related to such typologies – the real objects (the countries or governments

or policies) do not always fit in these types. In other words, in real life we may not find any country with purely one or another type of policy and rather we can find certain combinations and the situation (or “picture”) is probably changing over time.

According to Lundström and Stevenson (2001), all SME and E-policy measures are designed and implemented through different structures. It means that the architecture of these structures (or institutions) is also important. As Audretsch (2002) argued, there are no single institutions able to promote entrepreneurship or implement real E-policies, because they cover a wide spectrum, which should belong to a number of ministries or agencies. The findings of Lundström and Stevenson (2001) show that units, responsible for small business or entrepreneurship agenda, exist everywhere<sup>10</sup>, but differ in name, size, affiliation, mandate, responsibility scope, influence, etc. Irrespective the structural diversity, they (*Ibid.*) noted three prevailing structural approaches, each with its strengths, problems and challenges. Briefly, these three structural approaches are (*Ibid.*):

- ***Umbrella agencies with special authorities.*** Can effectively influence activities of other departments and target their actions on the SME sector, but (because the responsible agency has own programmes to manage) the management may take a lot of time. Over time, this could result in a more vertical than horizontal focus.
- ***Horizontal, multi-ministerial models.*** One ministry co-ordinates E-policy, but has a plenty of consensus and co-operation. The policy agenda tends to be transparent and coherent; usually is presented in one document that combines the objectives and measures being pursued by each co-operating ministry, but programme and service delivery is very much devolved to the regional or local level.
- ***Vertical or ‘silo’ models.*** Responsibility for different parts of E-policy is split among several departments, each responsible for its sector, region or objective, with minimal collaboration in an integrated manner. Policy objectives are crushed along bureaucracy and buried in documents of several government departments. Each department focuses on its own agenda, which does not support a coherent and integrated policy. Any entrepreneurship development activity tends to take place at the local or regional level with minimal national guiding frameworks.

It is easy to agree with Lundström and Stevenson (2001) that the vertical model has more disadvantages and the umbrella and horizontal models aim to overcome them. In addition they (*Ibid.*) note that there is still a lot of experimentation in search of the optimal structure, frequent attempts at restructuring and rationalizing, but structures are difficult to change and often governments end up with ‘more of the same’. Because a cohesive E-Policy is impacted by a number of policy areas, a horizontal approach makes sense, but strong central leadership is also needed. They noted that the more integrated E-policy becomes in agenda, the more horizontal is its approach.

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<sup>10</sup> Their research covered ten countries.

Regardless of structure, there are a series of challenges to overcome (*Ibid.*):

- managing the horizontality of policy issues across many government departments,
- coordinating the activity of different levels of government (from central to local),
- maintaining links between policymakers and entrepreneurs,
- maintaining links between research and policy and between policy development and local, programme delivery,
- maintaining linkages with the network of non-profit and private sector actors.

Last but not least, Lundström and Stevenson (2001) outline six major categories of action in an E-policy agenda:

- 1) regulatory environment for start-ups,
- 2) promotion of entrepreneurship,
- 3) entrepreneurship education,
- 4) small business support infrastructure,
- 5) target group strategies,
- 6) access to financing and seed capital.

For some categories (areas) they provide more detailed subdivisions. For instance, a comprehensive entrepreneurship education programme requires (*Ibid.*):

- inclusion of entrepreneurship as a component in national curriculum guidelines;
- development of curricula, teaching resources and teaching models that emphasize student-centred learning and 'hands-on' project-oriented activities;
- professional development of teachers;
- building of resource centres and networks for the exchange of best practice;
- business-education partnerships;
- entrepreneurial orientation of schools and administrations;
- building of community support;
- opportunities for students to experiment with venture projects and activities;
- student venture programmes and student business loans;
- significant budget allocations;
- commitment from both ministries (economic affairs and education).

Under the small business support infrastructure they point out some of the emerging innovations and approaches geared to reducing the barriers of new entrepreneurs to information, know-how, networks, expertise, advice on quality, etc. These are (*Ibid.*):

- one-stop shops;
- online portals;
- mentoring;
- incubators;
- target group enterprise centres;
- professional development for business advisers;
- orientation for all professional actors (beyond the business advising community);
- networks (some governments have specifically made this an E-policy issue).

In order to remain within the scope of a conference paper, in-depth examination of all these major categories (areas) will be omitted, but particular examination will go on in the next section, drafting a policy for Project Management.

### 5. Drafting a Policy for Project Management

This section will present the draft principles for the development of the Project Management Policy (hereinafter PM policy). It could be useful to start by examining the relevancy and applicability of six major categories of action in an E-policy agenda for the PM policy. This is presented in Table 1 and discussed afterwards.

**Table 1.** Relevance of major categories of E-policy for PM-policy

<b>E-policy categories</b>	<b>Relevance and applicability for PM-policy</b>
1) regulatory environment for start-ups	Low relevance. Advocates the need for less-bureaucratic versions of project management, suitable for SMEs, including for start-ups.
2) promotion of entrepreneurship	High relevance. Category of E-policy can be taken over to a full extent, but renaming it into “promotion of project management”.
3) entrepreneurship education	High relevance. It can be taken over to a full extent. It is related to previous item (also in E-policy). E-policy and PM-policy have a lot of common here, so can support each other and save resources.
4) small business support infrastructure	Medium-high relevance. Some innovations/approaches could be incorporated into PM-policy directly, but some should be adapted. Existing enterprise centres should also function as “PM Centres”.
5) target group strategies	Medium-low (but possibly growing) relevance: most E-policy target groups (youth, new graduates, women, minorities, immigrants, unemployed and people with disabilities, and fast-growth technology entrepreneurs) could be relevant for PM-policy.
6) access to financing and seed capital	Low relevance. Also advocates the need for ‘lite’ versions of project management, suitable for SMEs, including for start-ups.

The aim of regulatory environment for start-ups is to reduce the disproportionate administrative burden on small firms, and mainly in the start-up phase. Its relevance for PM policy is considered low but not zero. According to Turner *et al.* (2009), SMEs require less bureaucratic versions of project management (PM) and this matches the main idea of this E-policy category. There is a significant difference, however. E-policy is targeted at the administrative burden prescribed by legislation. The existing PM methodologies have been developed for large organisations and are quite bureaucratic but their application is not obligatory. For instance, start-up of a SME is a project but most entrepreneurs probably do not use sophisticated PM methodologies for the planning and implementation of the start-up process. On the other hand, if there were a PM methodology suitable for them, the start-ups would probably use it and this would decrease the failure rate. Underestimating the start-up time is a common reason for failure of newly established small businesses (see Barrow 1998) and also a typical problem in project planning.

The aim of promotion of entrepreneurship is mainly to create widespread awareness in society and to increase legitimacy of entrepreneurship. As stated before, PM is a ‘Cinderella subject’, the governments, and also the academic community do not treat

PM seriously. Because companies and societies are becoming more project-oriented, the development of PM should be a macroeconomic concern.

Reminding that PMI (2009) is worried about the lack of young PM professionals, the conclusion is that there is an essential need to (start to) promote PM. So this category of E-policy can be taken over to a full extent and introduced in PM policy as “promotion of project management”. This will be a wide and important category; its implementation will require coordinated efforts from public authorities (who are the main policymakers), professional and business associations, etc.

Entrepreneurship education was specified in Section 3. It should be recognised that education and promotion are related, both in E-policy and in PM policy. It is also relevant here to remind of the worry of PMI about the lack of young PM professionals. As the previous category of E-policy, it can be taken over to a full extent under the name “project management education”. We should note that E-policy and PM policy have a lot in common and so they can support each other. As seen before, in this E-policy category projects and project-oriented activities are mentioned directly and also indirectly in some issues. It is appropriate to cite Christophe Bredillet<sup>11</sup> here: “Project Management is the entrepreneurial side of business” (PMI Teach 2010). Considering this, it would be possible to combine two policies (E-policy and PM policy) in many aspects. Such combination will allow achieving more with fewer resources. Combination would be possible in including entrepreneurship in national curriculum guidelines, developing curricula, teaching resources, teachers, etc.

The aim of the small business support infrastructure is to reduce the barriers of new entrepreneurs to information, also networks, etc. This E-policy category includes some emerging innovations and approaches and some of them could be taken over and incorporated into PM policy. A good example is web portals. They could be used for providing information and services for PM professionals, also for top managers of permanent organisations (in private, public and voluntary sectors), for clients of PM services and other interested parties. Certainly mentoring could be used also for PM professionals, especially for people who manage projects in SMEs (probably most of them have started to work with projects without any preparation). Business incubation is a project-based activity by its nature. The idea of target group enterprise centres could be adapted indirectly. In E-policy, they are mostly targeted at underrepresented groups among entrepreneurs – women and national minorities. As this issue has already arisen in PM literature (see Duong & Skitmore 2003), the corresponding issue in PM policy should take into consideration specific needs of female and non-native PM professionals but probably not establish special centres. Also, in general, there is no need to create duplicate support systems for PM because enterprise or (small) business centres (SME support systems) already cover most regions and the existing centres should also function as “PM Centres”. But this leads

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<sup>11</sup> Dr. Christophe N. Bredillet is a professor and dean of postgraduate programs of ESC Lille School of Management (France) and editor of a leading journal “Project Management Journal”, published by PMI and Wiley.

to other subtopics – development of business advisers and orientation for all actors. If the existing enterprise centres will also function as project management centres, their personnel has to be trained in project management.

Target group strategies are for focusing on specific groups. The prevalent target groups in E-policy are young entrepreneurs and new graduates, women, ethnic minorities and immigrants, also unemployed and people with disabilities, and fast-growth technology entrepreneurs. In E-policy we can see some overlapping – this topic appeared already before, in relation to support infrastructure – and this could be (at least partially) taken over to PM policy. Its relevance to PM policy is not very high at the beginning, but will probably grow in the near future, because the importance of creation of equal opportunities is growing.

Access to financing and seed capital is one of the oldest issues in SME policy (the forerunner of more developed E-policy). It persists in E-policy, but its relevance for PM policy is not high. At the moment, there is a parallel regulatory environment (for start-ups) because both have to reduce the entry barriers that entrepreneurs face, especially in start-up phase. It is commonly known that businesses need additional financing (loans, equity or venture capital, etc) in revolutionary phases of development, such as starting a business or introduction of new products, services, markets, etc. This links entrepreneurship and PM, because revolutionary phases are normally treated as projects (Bredillet 2005). So these E-policy and PM policy categories could also be linked (similar to the first category in Table 1), expecting that better planning of projects (especially using PM methodology suitable for SMEs) will help small entrepreneurs to access external financing.

For the conclusion of the discussion, it is possible to point out the key categories of PM policy. These have been presented and briefly commented in Table 2.

**Table 2.** Key categories of PM-policy

<b>PM-policy categories</b>	<b>Importance</b>	<b>Comments and affinity with E-policy</b>
1) promotion of project management	High	Corresponding category of E-policy can be taken over to a full extent.
2) project management education	High	Also can be taken over to a full extent. E-policy and PM-policy have a lot in common here, can support each other and save resources.
3) support infrastructure for PM (combined with existing small business infrastructure)	Medium-high	Some innovations/approaches in E-policy could be directly incorporated into PM policy and some indirectly adapted. Existing enterprise centres can also function as “PM Centres”.
4) target group strategies (particularly a strategy for SMEs and suitable for them PM toolset)	Medium (possibly growing)	E-policy target groups are relevant, but PM-policy should accure SMEs as specific target group. The priority in this should be a ‘lite’, less-bureaucratic project management toolset, suitable for SMEs.

As seen in Table 2, there are two highly important categories: 1) promotion of PM and 2) PM education. Fortunately, in these categories PM policy can easily learn and



take over from E-policy. Promotion of PM is probably the only (almost) 'pure' PM policy element. In education, there are more possibilities for combination and co-operation between PM-policy and E-policy and even more in support infrastructure.

The support infrastructure could be (mostly) common for small business and project management. Because of no need for the development of a specific infrastructure for PM (the existing enterprise centres can also function as "PM Centres" and resources are certainly limited), the importance of this category is considered as medium-high.

The most comprehensive category in PM policy is target group strategies, because it involves three categories of E-policy – in addition to its corresponding category it involves regulatory environment for start-ups, and access to financing and seed capital. As the last two advocate the need for less bureaucratic ('light') versions of project management, suitable for SMEs, including for start-ups, there is a need for a strategy for SMEs. In this strategy, a priority should be elaboration of a PM 'toolset' suitable for SMEs. This will increase the importance of this category from medium-low (as estimated relevance in Table 1) to medium. The importance of this category will probably grow, as the importance of creation of equal opportunities is growing.

The implementation of PM policies will need appropriate structures. As discussed before, there is no need for the development of specific infrastructure, because the existing enterprise centres (names are different) can also function as "PM Centres". Bearing this in mind and considering that existing E-policies have a lot in common with the drafted PM policy it is possible to conclude that separate structures are not needed also for the design and implementation of PM policies. But at the same time, I would like to remind of (cited before) Audretsch (2002) and also Lundström and Stevenson (2001). According to them, E-policies cover a broad spectrum which belongs to a number of ministries/agencies and thus single institutions cannot implement a real E-policy. According to my opinion, this could be even more valid for PM policy because its spectrum is even broader.

## **Conclusion**

The first parts of the article explored the importance of project management (and their respective capabilities) and the need for adequate policies. Project Management is an 'ancient' phenomenon, but as an academic discipline, relatively young and emerging. So project management is called 'Cinderella subject' because the governments and also the academic community do not treat it seriously. Under such circumstances it is understandable that up to now project management has not been a macro-level or policy concern. But, perceiving that the total share of project-based activities is (according to a modest estimate) one-third of the world economy, it is obvious that governments should give much more credit to project management. In other words, there is a need for a suitable policy (i.e. PM policy). Examining the relations of project management has demonstrated that although there is (as yet) no direct link to entrepreneurship, these disciplines are linked through innovation (Figure 1) and possible convergence can be observed. Although there is still a distance between these professional fields, as well as between academic disciplines,

entrepreneurship policies (which have been developed everywhere, also called E-policy) could serve as a basis for PM policies.

The last section of the article outlines a policy for the development of project management, presented briefly in Table 2. It is somehow surprising that E-policies and PM policies have a number of (more or less) common issues and even the respective structures could be combined. Certainly this will allow efficient use of resources.

The main limitation is the insufficiently thorough examination of relations of entrepreneurship and project management but this would be too wide a subject for the scope of a conference paper. This topic deserves special treatment in future.

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# THE ABILITY OF TOURISM EVENTS TO GENERATE DESTINATION LOYALTY TOWARDS THE COUNTRY: AN ESTONIAN CASE STUDY<sup>1</sup>

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## Abstract

The purpose of this paper is to investigate the ability of the sport and cultural events to generate destination loyalty and repeat visitations. Passive mobile positioning (PMP) method will be used to analyse the behaviour of tourists during two years after 15 different events. The findings of the study revealed that some events are very useful for the states and generate large amounts of repeat visitations. The results presented in this paper could be used by Estonian Ministry of Economic Affairs and Communications and by Enterprise Estonia developing the Estonian tourism policy.

**Keywords:** destination, destination marketing, destination loyalty, repeat visitation, events, customer loyalty, free sample promotions, passive mobile positioning method, Estonia

**JEL Classification:** M31

## 1. Introduction

Due to the globalisation countries and places are faced with increasing competition among each other. The competition is for foreign direct investments, visitors, business locations and residents. (Kotler *et al.* 1999) As more mobile are capital, people and enterprises, as more attractive must places be. For that reason the special field of marketing “place marketing” is aroused. One section of place marketing dealing with tourist’s segment is called “destination marketing”. One possible way to market the destination is to arrange events. There is lots of literature investigating how big or mega-events influence the imago of the destination or create destination awareness. For that reason it’s quite common that big events are patronized by governments – they invest to the imago and awareness of the country.

At the same time marketing is shifting towards the relationship marketing and customer relationship management (Gummesson 1999). The principle that it is cheaper to hold existing customers than getting new ones (Rosenberg *et al.* 1984) is followed today in most of companies. Therefore it is very important to attend on repeat visitations and think on state level how to generate repeat visitations. The focus of this paper lies on quite slightly investigated field – on the ability of events to generate repeat visitations. Small and medium sport and cultural events (concerts,

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festivals and competitions) not patronised by governments are under the investigation. As a result of the paper it must appear that is it reasonable for governments to participate in arrangement of events and what kind of events are most efficient to use for destination marketing to generate repeat visitations.

## **2. Theoretical background**

### **2.1. The nature of the destination and destination marketing**

Place marketing is a phenomenon as local community engaging local authorities, entrepreneurs and residents, plans and implements marketing activities to improve the attractiveness of the place for the different target groups (e.g. for residents, enterprises, investigators, visitors). Place marketing means the designing and developing a place in the way that satisfies the need of the target segments. (Rainisto 2003) Place marketing is succeeded if residents and enterprises are happy and satisfied and expectations of visitors and investors are met (Kotler *et al.* 1993).

Rainisto (2003) claims that the treatment of the place marketing is not ideal and needs to be developed substantially. Karavatzis (2005) states that recently there is a shift towards the branding in the literature of place marketing. Also Skinner (2008) points out that place marketing is turned into place branding. She explains the difference of those two terms: “place marketing“ is more concerned with overall management issues and the term “place branding” is more linked to a place’s promotional activities, creating a distinct identity in the minds of the various target groups.

As already mentioned place marketing is directed to the different target segments. In this paper only segment of tourists is under considering. For tourist’s segment the special field of place marketing is used – “destination marketing”. Skinner has stated that place marketing originates from destination marketing. In the 1990s, as places became more competitive there came the period when it was realised that places may attract not only tourists but also investment and industry. In this period there was a shift from the use of the word “destination” to the use of the more-encompassing word “place”. Nowadays those two terms are used parallel the term “destination” continues to occur most frequently to describe places in the tourism literature, whereas the term “place” itself dominates in articles on the subject in business and branding journals. (Skinner 2008)

Destination marketing facilitates the achievement of tourism policy, which should be co-ordinated with the regional development strategic plan. Marketing of destinations should also guide the tourism impacts optimisation and the maximisation of benefits for the region. (Buhalis 2000) As Rainisto (2000) also Skinner (2008) asserts that destination marketing literature is shifting towards branding too.

If in the place marketing literature the place is treated simply as a physical geographical (natural or historical) or an administrative area (country, city, district etc) (Rainisto 2003) then the definition of destination is more complicated. Buhalis

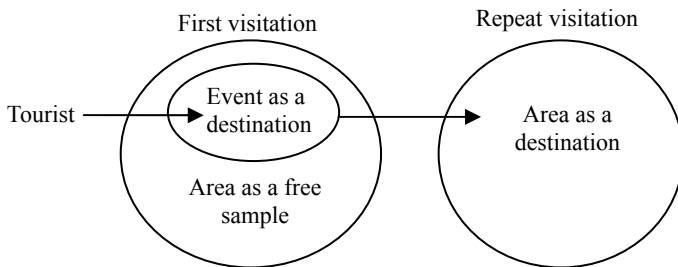
(2000) states that a destination is as a mix of all locally offered products, services, and experiences.

Lichrou, O'Malley and Patterson (2008) accent that destination must be not treated as a static place concerning only physical aspects. Destination is a dynamic phenomenon, including also immaterial aspects (myths, culture etc). Framke (2000) has investigated in very detail the nature of the destination. He concludes that destination is a place with identity generated by activities, interests, infrastructure and attractions related with it. He also claims that destination could be anything that exists somewhere in certain time and offers any social activity to tourist. Thus, it is possible to conclude that destination could be:

- a geographical area (city or country) – for example Paris
- a natural or artificial attraction – for example Disneyland in Paris
- an event – for example any concert or sport event in Paris.

The meaning of the destination depends on the purpose of visitor. The findings of Fennell's (1996) research revealed that visitors with different purpose have different behaving patterns. Visitors with certain interest link their moving trajectory and activities with places concerning their certain interest on goal. Visitors who have no special interests move on the substantially larger area.

Conclusion presented above has a crucial importance for this paper. It allows arguing that if the visitor is going to visit some event, the destination will be the event not the area where the event is taking place. This area could be treated as a free promotional sample which is given to the customer with the main product. In principle, there has to start the same mechanism as if customer goes to buying the washing powder and gets a free sample of conditioner. If the customer likes the sample the probability that the customer will next time go and purposely buy the conditioner increases (see next chapter). In the same way, if the visitor of the event likes the geographical area the probability of repeat visitation should increase and in this time the destination will be the geographical area and not the event anymore (see figure 1). This treatment is obliquely supported by the Kozak's research that revealed that the satisfaction with entertainment package increases the intentions to repurchase the entertainment package or revisit the vacation area by vacationers (Kozak 2001).



**Figure 1.** The change of the destination due to the free sampling.

## **2.2. Free sample as promotional method to generate repurchases**

The effect of the sales promotion on the sales is investigated since 1980. Because the purpose of the sales promotion is to make customers feel that exactly right now is the right time to purchase some product mainly the short-term effects of the sales promotion methods (coupons, price discounts etc) have been in focus. (See for example. Gupta 1988; Abraham *et al.* 1993; Ailawadi *et al.* 2007; Bandyopadhyay 2009)

Promotional free sampling differs from other sales promotion methods because there is proved a long-term effect on sale. Free sampling has an ability to generate customer loyalty and repurchases. (See for example Gedenk *et al.* 1999; Bawa *et al.* 2004; Villas-Boas 2004, Seetharaman 2004). Mentioned effect is caused by learning, which bases on the buying experience (Gedenk *et al.* 1999). In many cases customers cannot evaluate adequately the worth of the commodity before they haven't consumed it. With help of the free sampling customers are able to evaluate the qualities of the product and compare them to the previous experiences. If those qualities are better than other products have, the customer will prefer this new brand to the others. (Villas-Boas 2004) Also, the customer would prefer the familiar brand to the others he or she has no experience before (*structural state dependence*) (Seetharaman 2004).

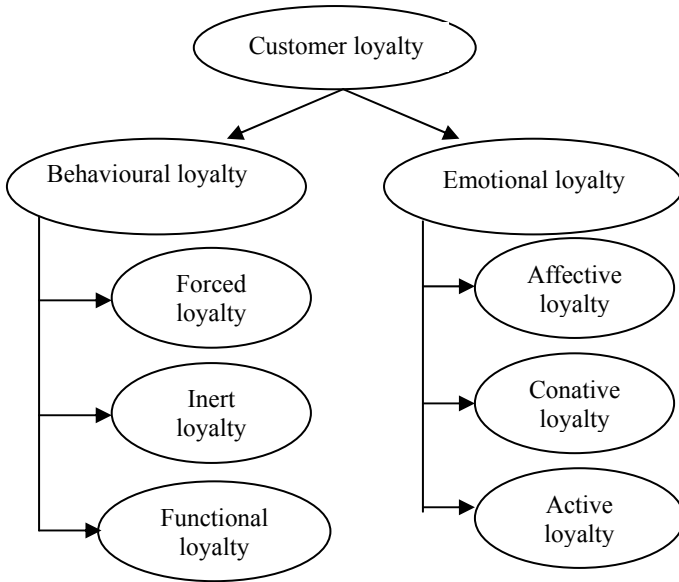
If to put the treatment presented above to the context of this paper it is possible to claim that tourist visiting the event has an opportunity to experience the qualities of the free sample – of the country where this event takes place – and on that basis to evaluate the worth of the country for him or her. If the tourist will to do a repeat visitation to that country he or she either has preferred this country to others because of the better qualities of this country or has made a safe decision preferring a country with he or she has at least some experiences to the totally unknown countries.

## **2.3. Repeat visitation as an expression of customer loyalty**

There are multiple approaches to customer loyalty created since Copeland (1923) came out with his treatment of customer loyalty. Until 1970 theories of behavioural loyalty (repeat purchase behaviour) were dominating (see for example Cunningham, 1956; Farley 1964; Jacoby 1971; Ehrenberg 1974; Tucker 1964; Sheth, 1968; McConnell, 1968; Harary *et al.* 1962). These approaches (except Copeland's) looked the customer loyalty as a stochastic behavioural phenomenon. These theories did not attempt to explain why customers behave loyally. Bass (1974) stated that even if behaviour is caused by some variables but the bulk of the explanation lies in a multitude of variables, which occur with unpredictable frequency, then, in practice, the process is stochastic.

During the late sixties the popularity of stochastic models dropped and some deterministic views on loyalty were proposed (for example McConnell 1968; Day 1969; Jacoby *et al.* 1973). These approaches asserted that loyalty does not concern only behavioural aspects but there are also some psychological processes behind it.

Contemporary researches (Oliver 1999; Chaudury 1995; Dupe 2000; Reichheld 2003; Hofmeyr *et al.* 2000) consider and accent the psychological (mostly attitudinal and emotional) factor of loyalty. Based on previous approaches it is possible to point out two general types of the customer loyalty – behavioural and emotional. Both have some subtypes. These types of loyalty are presented on the figure 2.



**Figure 2.** Types of customer loyalty.

In the case of behavioural loyalty it is important that customer behaves loyally buying and consuming only products or services offered by certain firm or brand. At the same time the customer has not to have any emotional bonds with this firm or brand. On the contrary, in the case of emotional loyalty the emotional bond is needed. Therefore these two concepts do not exclude each other. Loyally behaving customer could but not have to be emotionally loyal. Jones and Sasser have named these types of loyalty accordingly as false and true long-term loyalty (Jones *et al.* 1995: 90). Hofmeyr and Rice call first one as loyalty and second one as commitment (Hofmeyr *et al.* 2000: 87).

There are several reasons for that way customers are behaving loyally without having any emotional bond with offerer. First of all they could be forced to behave loyally – if there is no alternative brand or there are exit barriers created by offerer (Buttle 2004). Secondly, in the case of an inert loyalty customers do not switch because of cosiness and habit – for example, if brand differences are not very big and important to the customer (Wernerfelt 1991) or if the customer believes that the existing brand is better than other (Oliver 1999) or if the customer feels the risk



that other brands could be worse than the existing one (Hofmeyr *et al.* 2000). Thirdly, in the case of functional loyalty the customer has a very rational reason to behave loyally. For example Wernerfelt (1991) points out the cost based loyalty.

In the case of emotional loyalty there is an emotional bond emerged between customer and the brand. By this type of loyalty it is not important what does the customer do but what does he or she feel. It is the strongest type of loyalty and is the result of the enduring long-term relationship. Several authors (Hofmeyr *et al.* 2000; Moorman *et al.* 1992; Morgan *et al.* 1994) have named this type of loyalty as a commitment. Reichheld has defined emotional loyalty as a willingness of the customer to invest or donate for the strengthening of the relationship with the offerer. (Reichheld 2003) Also Hofmeyr and Rice (2000), Moorman, Zaltman and Deshpande (1992) and Morgan and Hunt (1994) have stated that committed customer is ready to forgive some short-term troubles and seeks the ways to continue the long-term relationship.

By the treatment of Oliver (1999) it is possible to distinguish three phases of emotional loyalty:

- Affective loyalty – customer has some positive feelings aroused towards the brand. It is because that customer is satisfied. At the same time this type of loyalty is very vulnerable and could vanish if there any kind of dissatisfaction will occur.
- Conative loyalty – customer has an inner urge aroused to prefer a concrete brand. This bond is much stronger than in the case of the affective loyalty.
- Active loyalty – customer has an inner urge to prefer a concrete brand and he or she is ready to overcome any obstacles to get this brand.

There are two levels of analysis of loyalty: micro (individual) and macro (aggregated) level (Jacoby *et al.* 1978). The micro level is linked with attitudes answering questions as why customer is loyal and what kind of variables affect his or her loyalty to certain brand or destination. Macro level measures only the behaviour – the outcome of attitude. Oppermann (2000) suggests to use behavioural characteristics of destination visitation for measuring destination loyalty because destination selection and trip planning are high-involved decisions and therefore spurious loyalty (not very positive attitude but high repeat purchase) is little likely to occur. This statement is supported also by research done by Hernandez-Lobato and others (2006) and Kaplanidou and Vogt (2007) that revealed that the loyal behaviour is determined strictly by the attitudinal loyalty or by the intentions to revisit.

Thus, the appearance of the repeat visitation by the customer should express that there is emotional or functional loyalty aroused. For example Alegre and Cladera (2009) founded that a very important influencer of the repeat visitation intention is satisfaction with previous visitations. There are other possibilities too. For example Oppermann (1998), Mitchell and Greatorex (1993), Milman and Pizam (1995), Gitelson and Crompton (1984) and Baloglu (2001) have founded that one reason for repeat visitation is familiarity of the destination. This comes from the risk avoiding

behaviour – even a bit unsatisfied tourist could come back to the destination because it is less risky than to go somewhere else. Unknown destination could hide bigger troubles than familiar destination has. According to that the appearance of the repeat visitation should express also the existence of inert loyalty. Kuusik, Ahas and Tiru (2009) founded that repeat visitation could be caused also by the forced loyalty – for example long-distance drivers who have to visit the destination quite often – like they that or not – because they have to execute the task.

As a conclusion it is possible to say that repeat visitation could express the existence of an emotional (customer likes the destination), functional (it is somehow useful for a customer to visit the destination), inert (customer is used to visit a familiar and safe destination) and also forced loyalty (visitor is executing a task). Due to a promotional free sampling occurred repeat visitation should express the existence of the emotional or inert loyalty.

#### **2.4. Events as a part of destination marketing**

Events are an important motivator of tourism, and figure prominently in the development and marketing plans of most destinations. There are several ways to categorise events. Based on the theme of the event there could be distinguished three general types of event: business events, sport games, and cultural celebrations. It is possible to categorise events based on the size of the event (local, regional, hallmark, and mega-events) and also based on the periodicity of the event (one-time and periodical events). (Getz 2008)

Events play important role in community-building, urban renewal, cultural development and in fostering national identities. (Getz 2008) Todds and Joppe (2001) have pointed that cultural and sport mega-events and festivals are in development strategies of the cities beside development of infrastructure and imago creation among of the three most important strategic activities. Wood (2005) has stated that if the local governments strategically plan the events, it is very important to systematically collect objective data after events about execution of the event. Only after the deep analysis of collected data it is possible to evaluate, did the event fulfilled the economic and social goals it had.

There are several goals assigned to the events by the destinations and in the literature there are lots of approaches treating influences that events have to the destination. As a summary it is possible to say that events help to achieve following goals of destination marketing:

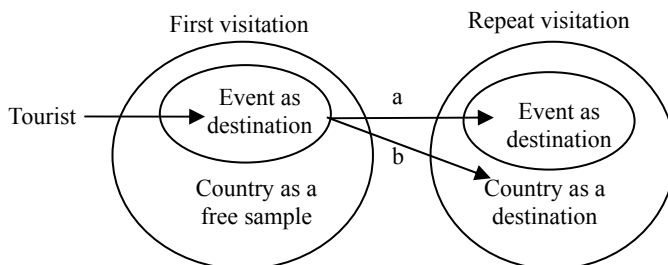
- To generate direct cash-flow – tourists' spending in destination area. (Wood 2005; Breen *et al.* 2001; Crompton *et al.* 1994)
- To bring tourists to the area during the event. (Getz 2008; McCartney 2005)
- To create positive and distinct imago for the destination (Getz 2008; Hede 2005; Richards *et al.* 2004; Kaplanidou *et al.* 2007)
- To create awareness trough the mass media (Green 2003)

- To fulfil general goals of destination marketing – to be the best place for living, working, and investing. (Getz 2008; Wood 2005)
- To generate repeat visitation (Kaplanidou *et al.* 2007)

In this paper the focus is on the last and relatively slightly investigated and quite under estimated goal of the event – to generate repeat visitations.

## 2.5. Conceptual framework

From the chapter 2.1 turned out that meaning of the destination for the tourist depends on the purpose of the tourist. If the purpose is to visit an event, the destination is the event and not the country where this event is taking place. This gives the opportunity to treat country as a free promotional sample that tourist gets when he or she is “buying” an event. From the chapter 2.2 revealed that this free sample gives to the tourist opportunity to evaluate the qualities of this country and it is possible that he or she comes back to this country because the country has better attributes than other destinations have or it’s just safer to come back to the familiar place. Thus, according to the chapter 2.3 this free sample produces any kind of emotional or inert loyalty towards the country and it appears as repeat visitation where the destination will be the country not an event (arrow “b” on the figure 3).



**Figure 3.** Possible destinations of repeat visitation.

In the case of periodical events it is possible that the tourist will be loyal towards the event only (allow “a” on the figure 3). In this case the repeat visitation will take place due to the emotional (tourist likes the event), inert (tourist is used to visit this event) or forced loyalty (tourist works for this event).

Thus, in the following chapters there will be investigated:

- do different events generate repeat visitations;
- are those repeat visitation caused by destination loyalty towards the country where the event was taking place, or
- are those repeat visitation caused by destination loyalty towards the event itself .

### 3. Data and methods

#### 3.1. Methodology

Recent developments in information and communication technologies (ICT) such as using different mobility databases in geographical information systems (GIS) are advancing surveying methods in geography and tourism studies. One of the emerging subjects in geographical studies is connected with mobile (cellular) phone positioning datasets and location-based services (LBS) Mobile positioning data has great potential for applications in space-time behaviour studies addressed in studying tourism geography, though there are various restriction and pre-conditions in ICT applications. (Ahas *et al.* 2008)

Passive mobile positioning data is historical or real-time proximity data that is automatically stored in mobile operators' memory files as locations of telephones or call activities in network; or the hand-over between network cells; or intensity of calls in antennae (Erlang values) (Ahas *et al.* 2008). In contrast to passive positioning, active mobile positioning is a technique where the location of mobile phones is gathered by special request in real-time (Ahas *et al.* 2007).

Passive mobile positioning data is promising source for economic and social studies as this huge historical dataset with geographical and often few socio-demographic attributes can provide feed for various current and new research topics. The major problem is access to this data, as mobile operators do not share it freely and easily. This is primarily due to privacy issues and commercial secrets. Data protection and privacy are important issues in the mobile positioning based approaches as highly sensitive personal information can be obtained. Management of data used in current research is handled by Positium LBS where requirements specified in EU directives on handling personal data (Directive 95/46/EC) and the protection of privacy in the electronic communications sector (Directive 2002/58/EC) are strictly implemented. The Estonian State Data Protection Agency has approved methodology, data management and analyses practiced by Positium LBS. The main principle that must be followed is keeping the identity of all respondents unknown. This principle is followed in during all data management as the data obtained from operators are already pseudonymous. The representation of data has also strict rules that keep out the possibility of identity leaks to third-parties.

The stages of gathering and processing the passive positioning data of roaming service users:

1. The location of antennae of the start of roaming service users' incoming and outgoing call activities such as calls, SMS, MMS, GPRS etc are stored in operators' database.
2. These log files are processed to make the data pseudonymous – meaning real phone numbers are transformed by a special one-way algorithm into unique ID, so there would be no computable link to real person.
3. Such pseudonymous data is obtained from the operator and copied to secure servers of Positium LBS.

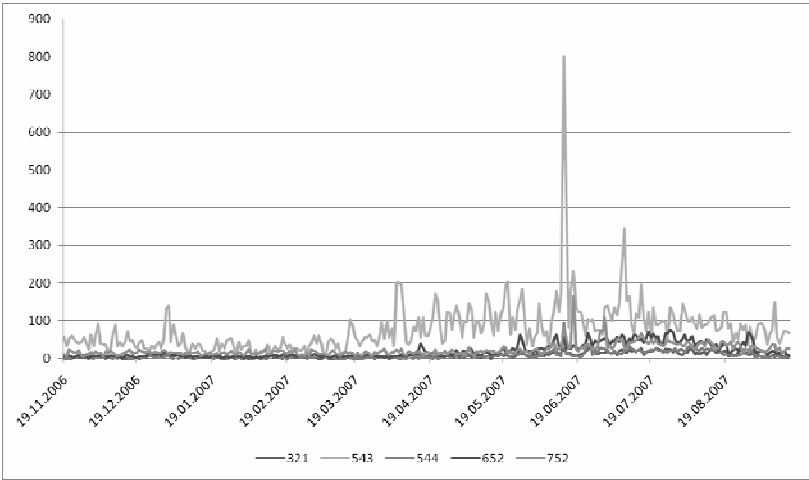
4. The country of SIM card network is considered the county of origin of the person. So, roaming service users are considered as foreign tourists or foreign visitors.
5. The unique ID of the person remains as long as this person does not change his/her phone number. This is how it is possible to identify repeating visits.
6. For each person's call activity the actual time of the beginning of the activity, country of origin and the spatial coordinates of the antenna where the call activity was registered is gained.
7. Because the network antennae are distributed unequally throughout the country and network coverage is also different, there is unequal spatial accuracy – dense areas such as urban areas and dense roads have much higher antennae density than rural areas.
8. There are lots of differences between the call activity statistics of different tourists. For example people who make fewer calls might be underestimated. Also differences in cultural background of phone usage, people not using cell phone on the trip, using other operator's roaming service and other possible places for estimation errors. Though there are special algorithms being developed to compensate the possible biases, they are not used in current study as this is the primary study of the topic.
9. For each visitor all visitation periods are calculated. Each visit has a starting and ending date of the visit. The overall period of visits calculated is from end of April 2005 until the end of September 2009.
10. Single visitation is considered a period when visitor conducts call activity. Large gaps between call activities are considered a time when visitor is not present in the country.

The data of one of three Estonian mobile network owners, EMT is used in current study. The penetration rate of EMT is considered to be 40-45% (EMOR 2008) during the study period. Although no data for the actual penetration rate among roaming service users is available, and there is also no reliable statistics available for actual visitors' number, the size of the sample is considered representative to be used in current study.

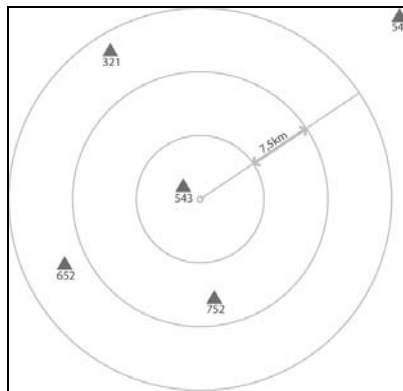
### **3.2. Methodology used in the study**

10 different events were studied in current study. For each event a number of visitors of the event were filtered based on the proximate antennae and time of the event. The procedure was as follows.

1. The proximate antennae are discovered based on geographical location near the event and on algorithm which detects abnormalities in the number of call activities and load during event. The antennae that were affected by larger number of visitors than usually are marked as event covering antennae. (see figures 4 and 5)
2. The ID-s that made call activities during the event in marked antennae are considered event visitors.
3. All visits of those filtered visitors are singled out from main visitation database for study.



**Figure 4.** Antennae call activity graphs during a period of time close to specific event.



**Figure 5.** Location of antennae close to the location of event.

The filtered visits dataset combines all visits of those tourists who visited selected events and shows how many visitors had previously visited Estonia, how many of them visited Estonia for first-time and how many of them came back later.

It must be noted that the dataset combines the total of 4.5 years of visits data, so visits before April 2005 are not recorded. Also the visitors might have changed their phone number during that period, therefore being misrepresented in this dataset. Those two nuances are though contradicting as the longer the period the more reliable this set is in the sense of data continuity, but also the chance of people changing their number is higher. Because all the events have the same risks of bias,

the comparison between them is possible, though absolute numbers must be handled accordingly.

### 3.3. Data

10 different events (Table 1) were selected to be analyzed in current study. The events were selected by special algorithm, which marked substantial increase of foreign call activities in clusters of antennae during short period of time. The locations of antennae and the dates of the increase were compared against the list of events. 10 specific events were matched this way and people who made call activities during that period in that location were flagged as event visitors of these events. The visitation dataset for selected visitors in current study is from 23.04.2005 to 31.09.2009.

**Table 1.** Studied events

<b>Name</b>	<b>Start</b>	<b>End</b>	<b>Number of visitors</b>	<b>Type and description</b>
<b>Metallica 2006</b>	13.06.2006	14.06.2006	4753	One-time cultural event (Concert)
<b>Gaudeamus 2006</b>	30.06.2006	2.07.2006	1183	Periodic cultural event (Baltic choir festival)
<b>Brigitta 2006</b>	19.08.2006	20.08.2006	592	Periodic cultural event (International ballet, opera and music festival)
<b>Kalev 2006</b>	29.09.2006	2.10.2006	536	Periodic sport event (International horse show)
<b>Alexela 2006</b>	13.10.2006	15.10.2006	801	Periodic sport event (International rally)
<b>Est-Eng 2007</b>	6.06.2007	7.06.2007	648	One-time sport event (International football match)
<b>Pärnu Hansa 2007</b>	29.06.2007	1.07.2007	1128	Periodic cultural event (Hanseatic city festival)
<b>Õllesummer 2007</b>	4.07.2007	9.07.2007	912	Periodic cultural event (National beer festival)
<b>Marilyn Manson 2007</b>	22.12.2007	23.12.2007	490	One-time cultural event (Concert)
<b>Karate EM 2008</b>	2.05.2008	5.05.2008	383	One-time sport event (International Karate competition)

The number of foreign visitors and the country of origin gathered from passive positioning database depend on the profile and size of the event. Well publicized and

large internationally known events attract many foreign visitors and play important role in shaping the image of organizing organization and country. According to organizer's estimation around 8000-9000 foreign visitors attended concert of Metallica in the capital Tallinn in 2006. A total of 4753 foreign visitors were registered from positioning database. Students' singing festival Gaudeamus in second largest city Tartu attracted 1183 visitors according to positioning data. Traditional events play significant part in attracting visitors to smaller places in Estonia. For example 1128 visitors attended Pärnu Hanseatic days in 2007.

Visitors from neighbouring countries are most common visitors of events in Estonia. Large majority of tourists are from Finland, Latvia, Sweden, Russia, Lithuania and Norway. The nationality of events visitors is usually similar to average Estonian visitors' nationality (Ahas *et al.* 2008).

Other nationalities are less important. There are some niche events attracting also non-traditional nationalities amongst others to Estonia (e.g. Karate Europe Championship). Visitor numbers to those events often reflect the organizers and participants of the event rather than ticket-buying visitors, though in sense of tourism industry they are not less important.

**Table 2.** National distribution of foreign visitors

Event	FI	LV	LT	SE	RU	DE	NO	GB	FR	MK	Other	Total
<b>Metallica 2006</b>	40,1	28,6	24,1	3,3	1,6						2,4	<b>100,0%</b>
<b>Gaudeamus 2006</b>	8,3	44,8	32,0	1,8		2,9					10,2	<b>100,0%</b>
<b>Brigitta 2006</b>	70,9	3,4		2,4	8,3	2,9					12,2	<b>100,0%</b>
<b>Kalev 2006</b>	72,9	15,7	3,5	3,2	1,1						3,5	<b>100,0%</b>
<b>Alexela 2006</b>	38,3	43,7	6,0		7,2		1,2				3,5	<b>100,0%</b>
<b>Est-Eng 2007</b>	6,6	6,0				1,9	2,6	75,2			7,7	<b>100,0%</b>
<b>Pärnu Hansa 2007</b>	65,2	16,0	4,9		3,5		2,8				7,6	<b>100,0%</b>
<b>Öllesummer 2007</b>	60,1	4,2		3,9			6,1	7,7			18,0	<b>100,0%</b>
<b>Marilyn Manson 2007</b>	4,7	88,8			1,6			2,2			2,6	<b>100,0%</b>
<b>Karate EM 2008</b>	21,7	9,4			10,4				6,3	5,5	46,7	<b>100,0%</b>



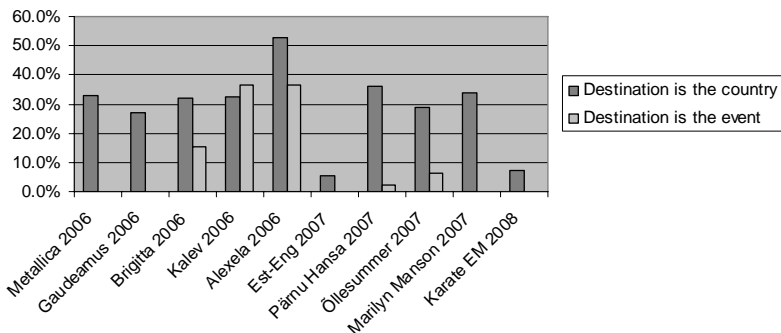
#### 4. Results

By all events involved to the current paper the rate of the first-time visitors was above 35% (see Table 3). Most productive in generating new visitors were student's song festival Gaudeamus (83%), Est-Eng football match (80%), concert of Metallica (75%), and Karate EM (70%) In the cases of other events the rate of first-time visitors was between 35%-50% of total visitors.

**Table 3.** Statistics of foreign visitors by the events

Event	Number of total visitors during the event <b>A</b>	Number of first-time visitors in the event <b>B</b>	Percentage of first-time visitors <b>B/A (%)</b>	First-time visitors who came back during 2 years after event <b>C</b>	Percentage of first-time visitors who came back <b>C/B (%)</b>
Metallica 2006	4753	3608	76%	1188	33%
Gaudeamus 2006	1183	976	83%	265	27%
Brigitta 2006	592	253	43%	120	47%
Kalev 2006	536	266	50%	184	69%
Alexela 2006	801	308	38%	276	90%
Eesti-Inglismaa 2007	648	517	80%	27	5%
Pärnu Hansapäevad 2007	1128	465	41%	178	38%
Õllesummer 2007	912	347	38%	122	35%
Marilyn Manson 2007	490	246	50%	83	34%
Karate EM 2008	383	267	70%	19	7%

The ability to generate repeat visitations differs essentially from the ability to generate new visitors (see table 3). As seen on the figure 6 the most productive event in generating repeat visitors were Alexela Rally and Kalev Horse Show (the rates of first-time visitors who came back to the Estonia during 2 years after the event are accordingly 90% and 69%). Very specific sports events (as football match and Karate EM) practically do not generate repeat visitors (rates are very low – accordingly 5% and 7%).



**Figure 6.** Repeat visitors by destination (percentage of first time visitors).

As is seen on the figure 6, most of the events that generate repeat visitors, generate country based destination loyalty. Exceptions are periodic specific sports (Alexela 2006 and Kalev 2006) and cultural events (Brigitta 2006) that generate both country based and event based destination loyalty. Whereas one-time specific (Metallica 2006 and Marilyn Manson 2007) and periodic broad cultural events (Gaudeamus 2006, Pärnu Hansa 2007 and Öllesummer 2007) generate only country based destination loyalty.

## 5. Discussion and conclusions

As mentioned in chapter 2.4 events play very important role in the destination marketing and have several goals to fulfil. The paper is focused on the relatively weakly investigated field –the ability of events to generate repeat visitations. In this paper the loyalty was analysed on the macro level as suggested by Oppermann (see chapter 2.3). Ten most influential events were analysed. Following the Getz (see chapter 2.4) there were covered regional and hallmark events. Local do not attract tourists and there are no mega-events in Estonia. Also were covered one-time and periodic cultural and sports events. Only business events were not covered due to he lack of broad international conferences or other business events.

Results revealed that all events are good generators of new visitors. On the one hand it fits to the first two goals of the destination marketing presented in chapter 2.4: to generate direct cash flow and to bring tourists to the area during the event. On the other hand it gives us the opportunity to treat events as sales promotion tool in the destination marketing mix. As the results are in accordance with the aim of sales promotional tools – to make customers feel that it's the most appropriate time for buying or consuming. Most effective in attracting new visitors are events that have special theme and audience as football match, students' song festival, karate EM and concert of Metallica. It is very likely that a quite big amount of visitors is related to the event itself and they are forced to be loyal.

In the ability of generating repeat visitors or visitation the variation is bigger. It revealed that some very specific sport events are not good creators of destination loyalty. Very likely professional athletes and also staff of the event are too busy and they have no time and possibilities for testing a free sample. In the same time, all events for any kind of tourist are very good generators of repeat visits. Results revealed that country as a free sample works very good – eight events out of ten generated about 30% of loyal tourists who returned and their destination was Estonia and not a specific event.

Thus, it is possible to say that country as a free sample creates emotional and inert loyalty. As a side effect, some events generate a loyalty towards the event itself. In this case the loyalty could be emotional, functional, inert, and even forced.

Based on this research following conclusions could be drawn:

1. PMP method is appropriate for collecting data about the movements of tourists and to create the destination marketing strategies on state level.
2. Small and medium sized events are essential tools for destination marketing. Therefore the planning and arrangement of those events should be organised in deep cooperation between state authorities and private firms.
3. Not all events are able equally to generate destination loyalty. For that reason an information system monitoring the flows of tourists is needed that helps to design the tourism politics of the state.
4. As pointed out in introduction it is cheaper to hold existing customers than getting new ones. Instead of generating expensive advertising campaigns to get new tourists, it should be more reasonable to use events and pay more attention to the effort to get visitors of the events back to the Estonia.
5. Some events generate the loyalty towards events them selves. It is additional reason for the government to cooperate with the arrangers of those events.

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# THE ROLE OF META-ANALYSIS IN EXAMINING RESULTS OF EMPIRICAL STUDIES ABOUT FINANCIAL CONTGAGION

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## Abstract

The paper gives some new insights on the subject of financial contagion using the methodology of meta-analysis. We show that traditional qualitative literature review is not the proper way to summarise empirical findings of financial contagion and we use meta-analytical tools instead. The results of the meta-analysis show that on average asset market correlations have increased during turbulent periods, but the increase is rather moderate. When correlation coefficients are adjusted for the presence of heteroskedasticity, the increase is considerably smaller but still statistically significant. The crises are different in their contagiousness but the level of development of destination country seems not to play significant role whether crises spread over or not.

**Keywords:** financial crisis, contagion, meta-analysis

**JEL Classification:** F36, B41, E61, E44

## 1. Introduction

Financial contagion has become increasingly popular research task in the recent decades. Several crisis in 1980's, 1990's and in the present century were transmitted rapidly to other countries that were sometimes quite different in their size and economic structure as compared to the country of origin and being even located on the other side of the globe. Borrowing the phrase from epidemiology this phenomenon has been called financial *contagion* in the economic literature. According to Rigobon (2002) the issue of *contagion* has been one of the most debated topics in international finance since the Asian crises. The events in last year with yet another financial crisis' 'snowball' rolling over the world show that developing an understanding of financial contagion is clearly indicated for policy makers to manage and avoid future spreading of crises.

Because of that increasing popularity the puzzle of financial contagion has been investigated a lot recently. However, drawing some final conclusions on financial contagion based on empirical evidence is problematic, because of the multidimensionality of the subject. There is still no consensus on neither the definition nor the testing methodology of financial contagion, additionally chosen

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crises, financial indices and destination countries of spreading of the crises may affect the results. All that leaves qualitative literature review as the research methodology with doubtful value and its' results undermined.

Research methodology that can better deal with this multidimensionality is meta-analysis. Meta-analysis enables us to control for all these study characteristics and come to one quantitative finding. Therefore the aim of the paper is to show that qualitative literature review is ill-designed to summarise recent empirical findings in the subject of financial contagion and to find more adequate results by using quantitative analysis in the form of meta-analysis instead.

The paper consists of four sections. In the next section the methodology of meta-analysis is introduced. The results of qualitative analysis of literature about financial contagion data and the results of the meta-analysis implemented for examining financial contagion are presented in section three. Finally, a brief conclusion is given in section four.

## **2. The main features of meta-analysis**

Meta-analysis is a research method to synthesise empirical research results from previous studies. De Dominicis *et al.* (2006) have given as the purpose of meta-analysis to review and quantitatively summarise the literature using statistical approach. This very general aim is in the heart of every meta-analysis but there are different approaches and methodologies used in that label and the unique definition of meta-analysis is still not worked out.

The term meta-analysis was first coined by Gene Glass in 1976, although some procedures later known as meta-analytic (for example the concept of effect size) were already present in Karl Pearson's study in 1904. By Glass's definition "Meta-analysis refers to the statistical analysis of a large collection of results from individual studies for the purpose of integrating the findings. It connotes a rigorous alternative to the casual, narrative discussions of research studies which typify our attempt to make sense of the rapidly expanding research literature." (Glass 1976). By Schultze (2004) meta-analysis is a method for systematic literature reviews on a certain substantive question of interest, more specifically on his words: "meta-analysis is a systematic process of quantitatively combining empirical reports to arrive at a summary and an evaluation of a research findings."

Basu (2003) defines meta-analysis as "synthesis of available literature about a topic. Ideally, synthesis of randomized trials to arrive at a single summary estimate is used." By James Neill's (2006) version "Meta-analysis is a statistical technique for amalgamating, summarising, and reviewing previous quantitative research." The most simple definition we have seen was given by Hunter and Schmidt (1990) who defined meta-analysis as "analysis of analyses".

Abstractly speaking, meta-analysis combines the results of several studies that address a set of related research hypotheses. Usually this is done by identification of

a common measure. This common measure is called effect size. Individual effect sizes are aggregated and after study characteristics are controlled the resulting overall results can be considered meta-effect sizes.

Many advantages meta-analysis has over traditional literature review have been pointed out, from which the most important are:

- quantitative estimation and statistical testing of overall effect sizes;
- generalization to the population of studies;
- finding moderator variables to explain heterogeneity in distribution.

The main difference between meta-analysis and traditional literature review is that meta-analysis uses the summary statistics from individual studies as the data points. By accumulating results across studies, it is possible to get more accurate representation of the population relationship than any of the individual studies can provide.

The main steps of meta-analysis after all relevant studies are congregated, (which we follow in our paper), are the following:

- 1) calculating relevant individual effect size statistics and controlling for their independency;
- 2) compute the effect sizes weighted mean for which special weights have to be calculated;
- 3) determine the confidence interval and statistical significance of the effect size weighted mean;
- 4) homogeneity testing;
- 5) conclusions and interpretations.

For conducting the first step the appropriate individual effect size statistics have to be found. What is meant by individual effect size statistic is a quantitative finding from a single study. As those individual effect sizes may be quite different in their nature, different effect size statistics to code different forms of quantitative study findings are worked out. The various effect size statistics are based on the concept of standardization. It means that the effect size statistic has to produce a statistical standardization of the study findings such that the resulting numerical values are interpretable in a consistent fashion across all the variables and measures involved. In our case it means we have to define an effect size statistic capable of representing the quantitative findings of a financial contagion studies in a standardized form that permits meaningful numerical comparison and analysis across the studies. (see Lipsey and Wilson 2001). It is found that good effect size statistics consider both the magnitude and the direction of a relationship (statistical significance which is often in the centre of qualitative literature review is therefore not sufficient statistic). In addition, as brought out by Lipsey and Wilson (2001) the effect size statistics should be defined so that there is relatively little confounding with other issues (such as sample size).

The next step is to aggregate all these individual effect size statistics into one meta-effect size. So one has to derive an overall value from the meta-sample by pooling all the estimates and deriving an overall summary statistic. Usually for finding this overall summary statistic the weighted average of the individual effect sizes computed. That, of course, leads to the question how should the weights be determined. Hedges (1982, Hedges and Olkin 1985) has demonstrated, that the optimal weights are based on the standard error of the effect size. Because a larger standard error corresponds to a less precise effect size value, the actual weights are computed as the inverse of the squared standard error value - called the inverse variance weight in meta-analysis. The standard error formulation has been worked out for the most important types of the individual effect size statistics (including mean differences and correlation coefficients that are used in the present analysis). We discuss these formulations in more detail in the chapter three when computing the weights for our individual effect size statistics.

In the next step there is a question of the homogeneity of the effect size distribution. In other words, whether the various effect sizes that are averaged into a mean value all estimate the same population effect (see Hedges 1982, Rosenthal and Rubin 1982). If the distribution is homogeneous, the dispersion of the effect sizes around their mean is no greater than that expected from sampling error. In other words, in a homogeneous distribution an individual effect size differs from the population mean only by sampling error.

The homogeneity test is based on the  $Q$  statistic - a statistical test that rejects the null hypothesis of homogeneity indicates that the variability of the effect sizes is larger than would be expected from sampling error and, therefore, we can't be sure that each effect size estimates a common population mean. If the  $Q$  statistic indicates that the distribution is heterogeneous, than there have to be differences among the effect sizes that have some source other than subject-level sampling error. These differences are usually associated with different study characteristics. The  $Q$  statistic is distributed as a chi-square with  $k-1$  degrees of freedom where  $k$  is the number of effect sizes (Hedges and Olkin 1985). The formule for  $Q$  is:

$$(1) \quad Q = \sum \left[ w_i (ES_i - \overline{ES})^2 \right]$$

where  $ES_i$  is the individual effect size for  $i = 1$  to  $k$  (the number of effect sizes),  $\overline{ES}$  is the weighted mean effect size over the  $k$  effect sizes, and  $w_i$  is the individual weight for  $ES_i$ . If  $Q$  exceeds the critical value for a chi-square with  $k-1$  degrees of freedom, then the null hypothesis of homogeneity is rejected. A statistically significant  $Q$ , therefore, indicates a heterogeneous distribution.

Alternative approach to homogeneity testing, so called 75% rule, is given by Hunter and Schmidt (1990). They partition the observed effect size variability into two components - the portion attributable to subject-level sampling error and the portion

attributable to other between-study differences. According to their rule of thumb, the distribution is homogeneous if sampling error accounts for 75% or more of the observed variability.

All these steps, in that order, with following conclusions and interpretations are implemented in the chapter three, summarising the empirical results in the field of contagion of financial crises.

### **3. Meta-analysis for summarising empirical results of financial contagion**

#### **3.1. Qualitative summary of financial contagion empirical results**

We have studied around 75 empirical analyses in the theme of financial contagion, results from which are summarised in Table 1 (see Appendix). Note that not all papers in the table actually test for the presence for financial contagion. So in some cases results in the third column of the table (whether evidence for contagion have been found or not) may be somewhat disputable (see different definitions of financial contagion).

As it can be seen from the table the results obtained on the field of financial contagion are quite hopelessly mixed. Counting *Yes*-es and *No*-s in the table we see that the results that indicate evidence on contagion are twice as frequent as those that suggest the opposite. However, many of the *Yes*-results are undermined by the later papers because of questionable testing methodology (not adjusting for the presence of heteroskedasticity). In many cases the chosen result in favor of *Yes*, *No* or *Mixed* is not clearcut. For example, in correlation coefficients based tests, there are mostly different results – some correlations have increased significantly during crises, some have not changed much and some have even decreased. So summing up the results for one *Yes* or *No* conclusion may not be the perfect way. There are almost no pairs of studies that are identical in all their definition of financial contagion, it's testing methodology and crises and samples under investigation. But all of them may influence the results of the analysis.

The results of the analysis confirm the opinion that empirical studies mainly provide heterogeneous results depending on applied definitions and methods and chosen crises, destination countries and financial indices. The evidence for both for confirming and contradicting financial contagion has been widely found in recent empirical analyses and we found no clue on which clear results is or should be dominating. We are aware that in many cases the results of empirical analyses may be biased and serious additional investments into examining possible consequences of financial crises are still necessary. We conclude that qualitative analysis of published research materials about previous financial crises does not give sufficient information to elaborate proper measures allowing to prevent serious consequences of financial crises. We propose that more adequate picture of financial contagion is possible to obtain by using a meta-analysis, which is exactly what we have done in the following section of the paper.

### 3.2. Data and technical details

For searching appropriate studies for meta-analysis we use ISI Web of Knowledge database for very recent studies and additionally the Contagion of Financial Crisis Website by World Bank Group for somewhat older ones. From the ISI Web of Knowledge database the studies corresponding to the keywords *financial contagion* are used. We define financial contagion as increase in cross-country correlations during “crisis times” relative to correlations during “tranquil times”. Thus we follow the most common definition sometimes called shift-contagion that was first proposed by Forbes and Rigobon (1999) who stated that contagion is a significant increase in cross-market linkages after a shock. This notion of contagion excludes a constant high degree of comovement in a crisis period, in which case markets are just interdependent. Therefore only the studies that report both the pre- and post-crisis asset prices correlations (or their difference) between countries are included into the sample. Because of these restrictions we are left in our data set with 716 effect sizes (394 from these are independent) from 30 constructs (17 independent). If both short and long term post-crisis correlations are reported we use the short term data, as we can not use both because of the independency problems (about independency problems see further).

We follow the classical five steps, presented in chapter two, in our analysis, which for the sake of freshening the memory were the following:

- 1) calculating relevant individual effect sizes and controlling for their independency;
- 2) computing the weights and aggregating individual effect size statistics into one meta-effect;
- 3) determine the confidence interval and statistical significance of the effect size weighted mean;
- 4) homogeneity testing;
- 5) conclusions and interpretations.

For conducting the first step we have to find appropriate individual effect sizes. A single research finding on the field of financial contagion is a statistical representation of one empirical relationship between pre- and post-crisis correlation of asset prices. There are no rules given in the literature for which are the correct effect sizes for changes in correlation coefficients. For one thing, it is not intuitively clear whether we should deal the data as pre-post contrasts or association between variables. On the one hand, we have correlation coefficients and even if we are not interested in the correlation coefficients themselves but their changes over two points in time, it is not quite clear why these two approaches differ so much (in terms of the properties of effect sizes) that we could not use the same computational procedures. So, why not just take the effect sizes as correlations and live with that? On the other hand, we have data points for both before and after crises (which we can take as treatment) and we are interested in difference between them, the gain to be precise. Classical pre-post contrasts situation, is not it?

Whichever approach we choose from these two, it seems that the real difference comes into play while calculating the (weighted) mean effect sizes (step 2) and their

variances. For calculating individual effect sizes it seems really not to matter. The difference between post- and pre-crisis correlations is by far the most logical individual effect size for a given study (construct). Mathematically, our individual effect sizes are computed as:

$$(1) \quad ES_i = r_{post_i} - r_{pre_i}$$

where  $ES_i$  is the individual effect size for study (construct)  $i$  and  $r_{pre_i}$  and  $r_{post_i}$  are pre- and post-crisis correlations respectively for study (construct)  $i$ .

Dealing our effect sizes as correlations we modify the effect sizes a bit, because of the problematic standard error formulation (these problems are more indepth discussed by Rosenthal 1994). Widely accepted method for doing that is transforming the correlations using Fischer's  $Z_r$ -transformation (see Hedges and Olkin 1985):

$$(2) \quad ES_{Z_r} = 0.5 \ln \left( \frac{1+r}{1-r} \right)$$

where  $r$  is the correlation coefficient. The necessity for calculating standard errors (and therefore need for Fischer's  $Z_r$ -transformation) comes into play when calculating weighted mean effect sizes (see further (step 2 and 3)).

Note that not all authors agree in the necessity of Fischer's  $Z_r$ -transformation for correlation coefficients as effect sizes. For example Hunter and Schmidt (1990) argue that the transformation gives results upward biased and standard correlations are more precise. However, some other authors claim that standard correlation effect sizes are downward biased and it is not clear which bias is greater and the main problem with standard correlations – problematic computation of standard errors and weights – remains

Later on, for interpreting the results we transform them back into standard correlation form using the inverse of the  $Z_r$ -transformation (Hedges and Olkin 1985):

$$(3) \quad r = \frac{e^{2ES_{Z_r}} - 1}{e^{2ES_{Z_r}} + 1}$$

Moving forward to step 2 we need to aggregate all individual effect sizes into one meta-effect size. Before that weights for all individual effect size statistics have to be calculated. We use standard statistical software SPSS and some macros written by David Wilson, that are available via his home page for computational and statistical purposes.

We use standard error based inverse variance weights (re-read chapter two) for calculating correlation coefficients based effect size mean. The standard error formula for correlation based (after Fischer's  $z$ -transformation (see earlier)) effect size mean is the following:

$$(4) \quad SE_{Z_r} = \frac{1}{\sqrt{n-3}}$$

and inverse variance weights therefore:

$$(5) \quad w_{z_r} = n-3$$

where  $n$  is the sample size of the individual effect size in both formulas.

However we do not have data necessary to calculate the effect size mean when treating individual effect sizes as treatment effects. More precisely, we lack information on correlations between pre- and post-treatment asset prices in individual studies. Therefore the sample size is used as weights instead.

The formula for calculating the weighted mean effect size is following:

$$(6) \quad \bar{d} = \frac{\sum d_i w_i}{\sum w_i}$$

where  $d_i$  is the  $i$ -th individual effect size and  $w_i$  is weight (inverse variance weight in case of correlation coefficients and sample size for treatment effects) of the  $i$ -th effect size.

### 3.3. Results and discussion

As preliminary analysis we use all 716 effect sizes we have in the sample as independent data points. This approach is somewhat doubtful because there are some effect sizes within the studies that differ only by the chosen methods of measurement and therefore the independency assumption between different data points is violated. Later on we deal with that problem by choosing the appropriate weights to avoid overestimating the results of those duplicate effect sizes within the studies.

Using the abovementioned formulas (1)-(6) we get the estimate of the population effect size to be 0.054 if we treat the individual effect sizes as treatment effects (we call it Approach 1 in the following) and 0.065 if we treat the individual effect sizes as correlation coefficients (Approach 2 hereafter). Thus on average the asset prices correlations have indeed increased during the turbulent periods but on quite moderate extent. The standard errors are 0.0035 and 0.0036 respectively and the 95% confidence intervals well above zero in both cases.

By calculating  $Q$  statistic using abovementioned formula (7) we get it's value to be 3680.5 which is clearly over the critical value of 778 (degrees of freedom = sample size - 1; probability (p-value) = 0.05). So the dispersion of the effect sizes around their mean is greater than that expected from sampling error alone and therefore each effect size does not estimate a common population mean.

As stated above we have some independency problems in the data. There are cases for multiple effect sizes within the same studies. That violates the independency assumption and overestimates the weights of the studies with multiple effect sizes. The classical way to deal the situation is to choose only one effect size per study per construct. However, this approach does not use some information contained in the primary studies and we definitely do not want to lose the information of different correlation measurement methodologies as possible moderators. It is well known that heteroskedasticity adjusted correlation coefficients are lower than unadjusted ones and therefore the contagion seems to be more likely to occur in case of unadjusted correlation coefficients. Therefore rather than dropping some of the data points we diminish the weights of studies with multiple effect sizes per construct by dividing the sample size by the number of effect sizes per construct. (For discussion on multiple measurements within studies see also Rosenthal 1994)

Using this slightly modified sample (results are given in Table 1 below) we get the weighted average effect size to be 0.053 in approach 1 and 0.072 in approach 2 with standard errors 0.0047 and 0.0049 respectively. With 95%-confidence intervals easily above zero we can conclude that asset prices' correlations have increased during turbulent periods.

**Table 1.** Results of financial contagion meta-analysis

	SS	Mean ES as treatment effects			Mean ES as correlations		
		Mean ES	St. error	Q stat.	Mean ES	St. error	Q stat.
All	716	0.053*	0.005	2782.0*	0.072*	0.005	5568.0*
U	159	0.168*	0.007	956.7*	0.208*	0.007	3432.2*
A	545	0.030*	0.007	668.0*	0.030*	0.007	716.1*
Tha97	86	0.132*	0.007	853.9*	0.173*	0.007	3367.1*
HK97	154	0.010*	0.009	295.6*	0.098*	0.009	323.0*
Rus98	46	-0.001	0.027	48.8	0.006	0.027	52.5
Bra99	33	-0.016	0.039	17.33	-0.014	0.039	15.4
Prewar	344	0.045	0.026	165.8*	0.059*	0.028*	197.3*
Mex94	372	0.141*	0.038	45.7	0.161*	0.045	39.0
US87	70	0.185*	0.062	5.8	0.181*	0.071	4.7
Ind04	68	-0.091*	0.028	122.0*	-0.116*	0.031	153.5*
Tur01	19	-0.194*	0.055	22.2	-0.209*	0.066	19.3
US01	82	0.014	0.055	22.4	0.019	0.066	17.8
Arg01	33	-0.374*	0.015	126.6*	-0.391*	0.015	156.6*
US02	33	0.126*	0.055	12.8	0.133*	0.066	10.3
Cze97	45	0.057	0.039	26.2*	0.058	0.041	26.3*
Emerg	33	0.054*	0.006	2254.3*	0.078*	0.006	5116.5*
Devel	14	0.052*	0.009	527.6*	0.051*	0.008	555.8*



ES – effect size

SS – sample size

U – cases with unadjusted (for heteroskedasticity) correlation coefficients

A – cases with adjusted (for heteroskedasticity) correlation coefficients

Tha – Thailand crisis, HK – Hong Kong crisis, Rus – Russian crisis, Bra – Brazilian crisis,

Mex – Mexican crisis, US – United States of American crisis, Ind – Indian crisis, Tur – Turkish

crisis, Arg – Argentinean crisis, Cze – Czech Republican crisis, Prewar – average of 6 pre II

World War crises (Argentine crisis 1890, Baring crisis (UK) 1890, US banking crisis 1893, US

stock market crash 1929, Sterling crisis (UK) 1931, devaluation of the dollar (US) 1933)

Emerg – cases with countries outside first 30 according to Human Development Index 2008

Devel – cases with first 30 countries according to Human Development Index 2008

Source: Author's calculations.

Testing for homogeneity and calculating Q-statistics on that purposes reveals that the distribution is heterogeneous and therefore the individual effect sizes may not estimate the same population effect. Therefore we continue by searching moderators to explain the variabilities in effect sizes. As mentioned above, the correlation coefficients' calculating methodology is widely accepted as significant explaining variable for financial contagion. The logic being that when not adjusting for hetereskedastity, the post-crisis correlations are higher and therefore finding evidence for contagion more probable. For controlling the correlation coefficients measurement as potential moderator we divide our sample into two parts distinguishing heteroskedasticity adjusted (A) and unadjusted (U) correlation coefficients in turbulent periods. For the sample with unadjusted correlation coefficients we get the weighted mean effect size to be 0.168 using approach 1 and 0,208 in case of approach 2. For the sample with heteroskedastity adjusted correlation coefficients the respective values are 0.030 for both approaches 1 and 2. The difference is more than clear and we can conclude that the fact whether correlation coefficients are heteroskedastity adjusted or not significantly affects the results of financial contagion analyses. By dividing the overall Q into the within and between groups component, it is found that the between groups Q is highly significant which also indicates that the differences in correlation measurement (heteroskedastity adjusted or not) accounts for significant variability in effect sizes.

Still, there is some heterogeneity left in the distribution. Therefore we also control for other possible moderator variables. We are interested in, for example, if different crises have been different in the extent of contagiousness. For the Thailand 1997 crisis the treatment effects based (Approach 1) weighted mean effect size is 0.132 and 0.173 if effect sizes are treated as correlation coefficients (Approach 2). For the Hong Kong 1997 crisis the same values are 0.100 and 0.098; for the Mexican 1994 crisis 0.141 and 0.160; for the Russian 1998 crisis -0.001 and 0.006; for the Brazilian 1999 crisis -0.016 and -0.014 respectively. From these numbers it is clearly seen that the Mexican, the Thailand and the Hong Kong crisis are contagious while the Russian and the Brazilian crisis are not.

From other crises the US 1987 and the US 2002 crises are contagious; for the Argentinean crisis 2001, the Turkish crisis 2001 and the Indian crisis 2004 the opposite is true – asset prices correlations have decreased during turbulent periods;

pre-World War II crises on average are not contagious, as well as the Czech crisis 1997 and the US crisis 2001 with some but insignificant increase in average asset prices correlations. Again the given crisis as grouping variable accounts for significant variability in effect sizes, but there are still some heterogeneity left inside groups.

Using only data where correlation coefficients are adjusted for the presence of heteroskedasticity (not reported on the Table 1 below, but available on request) the results do not change much. The Mexican, the Thailand and the Hong Kong Kong crises are still contagious, although the weighted mean effect sizes are somewhat smaller. Also, Russian and Brazilian crises are not contagious with weighted mean effect sizes slightly negative. The only change is related with the US 1987 crisis, which is not contagious any more in the 95% confidence interval. However, with the weighted mean effect size clearly above zero (0.17) and only slightly below the unadjusted (U) case, the reason seems to be mainly because of small sample size.

We also investigate whether the level of development of the destination country makes it more or less susceptible for the spread of the crisis. The need for that differentiation is suggested for example by Hartmann *et al.* (2001) who find only very weak evidence of contagion on the sample of G5 countries and speculated that it may be different for emerging economies. We use Human Development Index (HDI) 2008 values for dividing countries as more or less developed ones. We call first 30 countries according to HDI as developed and all other countries as developing. Thus we have quite comparable sample sizes for both groups with 372 and 344 respectively. For the sample with less developed countries, the weighted mean effect size is 0.054 according to Approach 1 (effect sizes as treatment effects) and 0.077 according to Approach 2 (effect sizes as correlations). For the sample with more developed countries the corresponding values are 0.052 and 0.051 respectively. So according to the Approach 1 there is no difference in susceptibility for the spreading of crises between developed and developing countries, while according to the Approach 2 less developed countries are somewhat more susceptible for the carryover of the financial crises. The variability analysis reveals that the level of development of destination country does not account for significant variability in effect sizes. From that we may judge that herding behaviour seems to be more likely transmission force for financial crises than real and stable linkages. This finding is in line with Serwa (2005) who found that The Central and Eastern European stock markets are not more vulnerable to contagion than Western European markets. On the other hand the finding is in contradiction with Dungey and Tambakis (2003) who argue that developing countries are more affected by contagion than developed countries.

However, we also compare these two groups separately for adjusted (A) and unadjusted (U) cases (not reported in Table 2). The findings reveal that in the case U the less developed countries are indeed more susceptible to contagion of financial crises according to both approaches 1 and 2. Using Approach 1 the weighted mean effect sizes are 0.19 for developing and 0.12 for developed countries with not overlapping confidence intervals and in case of Approach 2 the differences are even

greater: 0.24 and 0.12 respectively. In the case A the according numbers are 0.04 for developing and 0.02 for developed countries (according to both approaches 1 and 2) but the differences are not significant at the 95% confidence level.

Summing up the results of the section we can conclude that on average asset market correlations have increased during turbulent periods, which gives some evidence to the support of financial contagion conception. Nevertheless, the increase is quite moderate and after controlling for heterogeneity in turbulent periods' correlations it's even smaller (although still statistically significant in 95% confidence level). Both the correlations' calculating methodology (heteroskedasticity adjusted or not) and the crisis under observation are significant moderators to explain heterogeneity in distribution. From the most important financial crises during past one and half decade the Mexican, the Thailand and the Hong Kong crisis are contagious while the Russian and the Brazilian crisis are not. The level of development of destination country on overall does not account for significant variability in effect sizes. Still, less developed countries are on average somewhat more susceptible to the financial crises contagion compared to the well developed countries.

#### **4. Conclusion**

Meta-analysis is a research method to synthesise empirical research results of several individual studies that address a shared research hypotheses. Meta-analysis is especially called for if the multidimensionality of the research topic makes traditional literature review as summarising analysis a doubtful and risky business. One of those topics is the contagion of financial crises.

Financial contagion is extremely complex and multidimensional phenomena with no uniquely accepted definition or testing methodology. Because of the rapid transmission of initial country-specific shocks to economies from which some were very different in both their size and structure compared to the country of origin, the 'financial contagion' puzzle has become one of the most newsworthy research task for economists during the last decades. The crises spreaded over the world like snowballs becoming bigger and bigger during the course and even countries with apparently sound fundamentals were not left unaffected. The events in last year with yet another 'snowball' rolling over the world show that developing an understanding in the subject of financial contagion is clearly indicated for policy makers to manage and avoid future spreading's of crises. The empirical results on the topic of financial contagion are mixed and in our view no unique conclusion can be made only based on the qualitative analysis of empirical literature. Thus, we propose that more profound and adequate picture of financial contagion is possible to obtain by using a meta-analysis.

The most important advantages meta-analysis has over traditional literature review are the following:

- quantitative estimation and statistical testing of overall effect sizes;
- generalization to the population of studies;

- finding moderator variables to explain heterogeneity in distribution.

The key element in meta-analysis is so-called effect size, which is a common measure from individual studies and permits meaningful numerical comparison and analysis across the studies. Individual effect sizes are aggregated using special weights that determine the relative importance of each of them and after study characteristics are controlled for the resulting overall results can be considered meta-effect sizes.

The main steps of meta-analysis, which is also followed in our paper, are the following:

- 1) calculating relevant individual effect size statistics and controlling for their independency;
- 2) compute the effect sizes weighted mean for which special weights have to be calculated;
- 3) determine the confidence interval and statistical significance of the effect size weighted mean;
- 4) homogeneity testing;
- 5) conclusions and interpretations.

The results of our meta-analysis indicate that on average asset market correlations have increased during turbulent periods, but the increase is rather moderate. Still, we find some evidence of financial contagion even after the turbulent periods' correlations are adjusted for the presence of heteroskedasticity. The results of our analysis show that the Mexican 1994, the Thailand 1997 and the Hong Kong 1997 crisis were contagious while the Russian 1998, the Brazilian 1999 and the Argentinean 2001 crisis were not. The level of development of the destination country seems not matter much for the financial crisis to spread over or not. Still, the meta-effect sizes are on average slightly higher in the case of less developed countries as compared to the well developed ones.

One of the main limitations of the paper is that our meta-analysis is restricted to correlation coefficients based analyses only. Studies using this methodology are the vast majority and it is not that simple to conduct comparable individual effect sizes necessary for the meta-analytic approach from the studies using other methodologies. Nonetheless this might be one of the subjects future research could focus on.

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## Appendix

Authors	Year	Contagion	Method	Sample	Market
Hartmann, Straetmans, de Vries	2001	Weak	extreme value analysis	G5 countries	Asset prices
Forbes, Rigobon	1999	No	Increase in correlation, adjusted	28 countries, 1987 US stock market crash, 1994 Mexican peso collapse, 1997 East Asian crisis	Stocks
Lomakin, Paiz	1999	No	Probit analysis	various countries	Bonds
Rigobon	1999	No (Yes less 10%)	Directly identified model; shift-contagion	Mexican, Asian, Russian crises	Stocks
Rigobon	2002	No	HS based identification method	Argentina, Mexico 1994-1999	Brady bonds
Craig, Dravid and Richardson	1995	Yes	CDR approach	US and Japanese stocks	Stocks
King, Wadhvani	1995	Yes	Correlation coefficient based tests	US, UK and Japan after 1987 US crash	Stocks, bonds
Lee, Kim	1993	Yes	Correlation coefficient based tests	12 major markets after US 1987 crash	Stocks
Calvo, Reinhart	1996	Yes	Correlation coefficient based tests	1994 Mexican peso crisis, Asian and Latin American emerging markets	bonds and equities
Baig and Goldfajn	1999	Mixed	Correlation coefficient based tests, adjusted	emerging markets during the 1997-98 East Asian crisis	Stocks, exchange rates, interest rates
Chou, Ng, Pi	1994	Yes	Var-covar transim mechanism (ARCH/GARCH)	1987 U.S. stock market crash	Stocks
Hamao, Masulis, Ng	1990	Yes	Var-covar transim mechanism (ARCH/GARCH)	1987 U.S. stock market crash	Stocks
Edwards	1998	No	Var-covar transim mechanism (ARCH/GARCH)	Mexican peso crisis, Mexico to Chile	Bonds
Edwards	1998	Yes	Var-covar transim mechanism (ARCH/GARCH)	Mexican peso crisis, Mexico to Argentina	Bonds
Longin and Solnik	1995	Yes	Co-integration based tests	seven OECD countries from 1960 to 1990	Stocks
Baig and Goldfajn	1999	Yes	Increase in correlation	1997-98 East Asian crisis	Sovereign spreads

<b>Authors</b>	<b>Year</b>	<b>Contagion</b>	<b>Method</b>	<b>Sample</b>	<b>Market</b>
Forbes	1999	Yes	Directly measure changes	Asian and Russian crises, individual companies around the world	Stocks
Eichengreen, Rose and Wyplosz	1996	Yes	Probit model	ERM countries in 1992-3	currencies
Kaminsky and Reinhart	1998	Yes	Probit model	Mexican 1995 and Asian 1997	Assets
Gravelle, Kichian, Morley	2003	No	Shift-contagion	4 emerging-market countries 1991-2001	Brady bonds
Gravelle, Kichian, Morley	2003	Yes	Shift-contagion	7 developed countries 1985-2001	Currencies
Kali, Reyes	2005	Yes	Network approach	Tequila Crisis Mexican 1994), the Asian Flu, and the Russian Virus	Stocks
Kali, Reyes	2005	No	Network approach	Venezuelan and Argentine crises	Stocks
Iwatsubo, Inagaki	2006	Yes	CDR approach	22 Asian firma and 7 indexes, Asian crises	Stocks
Didier, Mauro, Shmukler	2008	Yes	Theoretical analysis		
Sander, Kleimeier	2003	Yes	Increase in correl using Granger-causality methodology	Asian crisis, 1996-2000	Bonds
Arestis, Caporale, Cipollini, Spagnolo	2005	Yes/Mixed	Shift contagion	1997 Asian crisis; from Thailand, Indonesia, Korea, Malaysia to Japan, UK, Germany, France	Assets
Bordo, Murshid	2000	No/Weak	Correlation coefficient based tests	Different historical and current crises	Bonds, interest rates
Wolf	1996	Weak	Granger-causality	21 sectors of 24 developing countries, 1976-1995	Equity
Cerra, Saxena	2002	Yes	Probit model	Indonesian currency crisis	stocks, currency
Moussalli	2007	Yes	Directly measure changes	Asian, Russian, Brazilian crisis; Asian, East-European, Latin-American countries	Stocks, currencies
Woo, Carleton, Rosario	2000	Yes	Logit model	Asian crisis; 6 Asian countries 1990-1998	Currency
Woo	2000	Yes	Qualitative analysis	Asian crisis; from Thailand to 4 Asian countries	Bonds

<b>Authors</b>	<b>Year</b>	<b>Contagion</b>	<b>Method</b>	<b>Sample</b>	<b>Market</b>
Tornell	1999	No	Directly measure changes	Mexican 1995 and Asian 1997	Currency
Corsetti, Pesenti, Roubini	1998	No	Directly measure changes	Asian crisis; 24 developing countries	Currency
Kelejian, Tavlak, Hondroyannis	2006	Yes	Directly measure changes	6 crisis; 25 developing countries	Currency
Corsetti, Pericoli, Scrabcia	2005	Yes	Increase in correlation, adjusted	Hong Kong stock market crisis 1997	Stocks
Favero, Giavazzi	1999	Yes	VAR model	7 European countries; ERM crisis, 1988-1992	Interest rates
Serwa	2005	Weak	Increase in correlation	7 crises, 1997-2002; 17 Western Europe and CEE countries	stocks
Serwa	2005	Yes	VAR model	Asian crisis 1997	capital markets
Serwa	2005	No	Markov switching framework	HSI and Nikkei 225; 1997 Asian crisis	stocks
Serwa	2005	Weak/No	transition matrices	US, UK, Japan, Germany	stocks
Forbes, Rigobon	2000	No	Shift-contagion	1990s	bonds, stocks
Hon, Strauss, Yong	2004	Yes	Increase in correlation, adjusted	2001 terrorist attack, 25 economies, OECD and Asia	stocks
Lee, Wu, Wang	2007	No	Increase in correlation, adjusted	earthquake in South-East Asia on Dec 26, 2004, 26 international stock indexes	stocks
Lee, Wu, Wang	2007	Yes	Increase in correlation, adjusted	earthquake in South-East Asia on Dec 26, 2004, 26 international exchange rates	exchange market
Wang, Thi	2006	Yes	Increase in dynamic conditional correlation coef	Asian crisis 1997, Thailand, China, Hong Kong, Taiwan	stocks
Kleimeier, Lenhert, Verschoor	2008	Yes	Increase in correlation	Asian crisis, Thailand + 14 countries	stocks
Candelon, Heed, Verschoor	2005	No	serial correlation common feature	Mexican 1994, Asian 1997	stocks
Arestis, Caporale, Cipollini	2003	No/Weak	shift contagion, adjusted	Asian 1997; from 4 Asian countries to 5 developed countries	stocks



<b>Authors</b>	<b>Year</b>	<b>Contagion</b>	<b>Method</b>	<b>Sample</b>	<b>Market</b>
Fazio	2007	Weak	Probit analysis	1990-1999, 14 emerging market economies	currency
Bayoumi, Fazio, Kumar	2007	Yes	correlations and distance relationships	15 countries, 1991-2001	stocks, exchange rates
Bayoumi, Fazio, Kumar	2003	Yes	correlations and distance relationships	16 countries, 1991-2001 (Tequila, Asian, Russia, Argentine)	stock
Alvarez-Plata, Schrooten	2003	No	correlations	7 Latin-American countries, 2001-02 Argentinean crisis	stocks, interest rates
Wang, Moore	2008	Yes	dynamic conditional correlation	4 CEE countries, 1994-2006	stocks
Kallberg, Pasquariello	2008	Yes	excess comovement, adj	82 US industry indexes, 1976-2001	stocks
Chiang, Jeon, Li	2007	Yes	dynamic conditional correlation	9 Asian countries, 1990-2003	stocks
McAleer, Nam	2005	Yes	increase in co-movement (FR)	6 Asian countries, Asian crisis 1997	exchange rates
Haile, Pozo	2008	Yes	panel probit model	37 advanced and emerging market economies, quarterly data 1960-1998	currency
Sola, Spagnolo, Spagnolo	2002	Yes	Markov switching framework	Asian crisis 1997; from Thailand to South-Korea	stocks
Sola, Spagnolo, Spagnolo	2002	No	Markov switching framework	Asian crisis 1997; from South-Korea to Brazil	stocks
Baur	2003	Yes	regression analysis	Asian crisis, 11 Asian markets	stocks
Alba, Bhattacharya, Claessens, Ghosh, Hernandez	1998	Unclear	Qualitative analysis	Asian crisis	stocks, exchange rates
Frankel, Schmukler	1996	Yes	Correlation coefficient based tests	Mexican 1994, to Asia and Latin-America	Country fund prices
Valdes	1997	Yes	Correlation coefficient based tests	Mexican 1994, from Mexico to Latin-America	secondary market debt prices and credit ratings
Agenor, Aizenman, Hoffmaister	1999	Yes	Correlation coefficient based tests	Mexican 1994, from Mexico to Argentina	Interest rates
Boyer, Gibson, Loretan	1999	No	Increase in correlation, adjusted	Germany, Japan, USA; 1991-1998	Exchange rates

<b>Authors</b>	<b>Year</b>	<b>Contagion</b>	<b>Method</b>	<b>Sample</b>	<b>Market</b>
Loretan, English	2000	No	Increase in correlation, adjusted	from the Czech Republic, Asia, and Russia to CEE	3 pairs of asset returns
Gelos, Sahay	2001	No	Increase in correlation, adjusted	1982 debt crisis, Mexican 1994, 1997 Asian	Stocks, exchange rates, sovereign spreads
De Gregorio, Valdes	1999	Not tested	conditional probability	Mexican 1994, Asian 1997, Russian 1998; 41 countries	Exchange rates, credit ratings
Caramazza, Ricci, Salgado	2004	Yes	conditional probability	5 crises and 161 countries	currency
Glick, Rose	1999	Not tested	conditional probability	Asian crisis, 8 Asian countries	Currency
Park, Song	1998	Yes	conditional probability		Exchange rates, stocks, interests
Longin, Solnik	2001	Yes	GARCH framework	US, UK, France, Germany, Japan: 1959-1996	Stocks

# GOVERNMENT SUPPORTING SCHEMES ENHANCING UNIVERSITY-INDUSTRY KNOWLEDGE TRANSFER ON THE EXAMPLE OF SPINNO PROGRAM IN ESTONIA<sup>1</sup>

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## Abstract

The purpose of the study is to evaluate the relevance of the set-up (system of objectives, supported activities and measured indicators) of SPINNO program in facilitating university-industry knowledge transfer in Estonia since 2001 and make suggestions on its improvement. As the basis for the analyses the knowledge transfer support scheme formation and evaluation framework is composed, which is used in evaluation of SPINNO programme. The empirical analyses revealed that the program has not paid enough attention to the different aspects of sustainability of knowledge transfer functions. The evaluation of the SPINNO programme within its existence since 2001 indicated, that the gap between the aims, expectations and supported activities converged consistently. In the first and to lesser degree in the second SPINNO program period the concept was viewed by both, the programming institutions and applicants, as limited to technology transfer. By the third reporting period the importance of the support to the knowledge transfer as the precondition for technology transfer was acknowledged.

**Keywords:** knowledge transfer, knowledge-based economy, innovation policy, government support schemes, SPINNO program

**JEL Classification:** O32, O33, H43

## Introduction

According to the literature on evolutionary and national innovation system theory (Nelson, Winter 1982; Lundvall 1992; Nelson 1993 etc), knowledge plays the central role in economic growth and competitiveness through the process of innovation. Innovation as the capability to create and apply new knowledge or old knowledge in a new way involves the interaction between the sources of knowledge resulting in knowledge transfer. Knowledge transfer refers to the process through which knowledge, ideas, research results, technology and skills move between sources of knowledge, mainly from universities and other research organisations to business and wider community, involving the transfer of codified forms of explicit knowledge as accumulated information and tacit knowledge based on subjective beliefs or know-how. Therefore, the prerequisite for knowledge transfer is interaction between the sources of knowledge.

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The interaction between universities and industry and the knowledge transfer resulting from it forms the basis of knowledge-based economy with according innovation- and technology policy support schemes being implemented in many countries including Estonia. These initiatives are usually based on the experiences of developed countries which share strong accumulated knowledge base, well functioning market system, developed institutional and infrastructure support of innovation activities (Varblane *et al.* 2007). Developing and transition economies come with less advanced background and capabilities of absorbing the knowledge, posing specific requirements also to knowledge transfer support schemes. At the same time, governments are expecting measurable outcomes from the public investments made to research and development activities in general and knowledge transfer activities in particular.

Therefore, for a public support scheme facilitating knowledge transfer to bring expected benefits, it is important to identify the socio-economic background and preconditions for knowledge interactions and aim the support mechanisms to according weaknesses to be overcome and advantages to be further used. Chosen focus and objectives must be accompanied with relevant activity systems to be supported and indicators measuring the actual results rising from the support scheme implemented. As the history of knowledge transfer support schemes (lead by Great Britain, USA and Canada) is of short duration (first initiatives dating back to the end of 1990-s) and the international experience continually developing, it is important to carry out different case-studies to build the basis for mutual learning and generalizations resulting in guiding principles for design and evaluation of knowledge transfer support schemes. Estonia was at the forefront of the drive of launching government support schemes facilitating knowledge transfer and opened SPINNO programme in 2001 with the aim to support the development of awareness, skills and infrastructures related to knowledge transfer between Estonian universities and industry.

The aim of the study is to evaluate the relevance of the set-up of SPINNO program in enhancing knowledge transfer in Estonia and make suggestions on its improvement based on the knowledge transfer support scheme formation and evaluation framework. The research object of this study is the set-up (system of objectives, supported activities and measured indicators) of government support schemes aimed at enhancing university-industry knowledge transfer. Empirical study object is the public support scheme aimed at facilitating university-industry knowledge transfer in Estonia – SPINNO program.

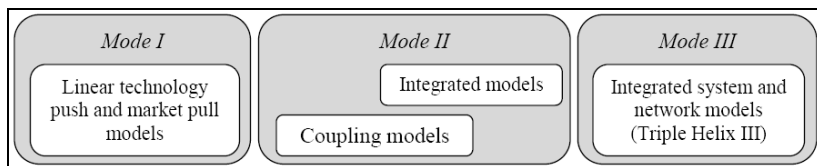
This article contributes to the development of knowledge transfer policy formation process through elaborating a systemic approach to evolutionary theoretical base of knowledge creation and innovation processes and their complex conjunction to according knowledge transfer processes, preconditions for their evolution and knowledge transfer channels. Output of the theoretical analyses is the knowledge transfer support scheme formation and evaluation framework being used in evaluation of SPINNO programme.

Methodology of theoretical part involves analytical modelling of theories and frameworks capturing innovation process, presumptions and activities for knowledge transfer processes to identify the channels through which knowledge transfer appears and according impacts devolve. Empirical analyses of SPINNO programme is based on two sets of baseline information:

1. Baseline-documentation of SPINNO program:
  - SPINNO 2001-2003 background report (de Jager 2001), regulations, evaluation report (Evaluation of... 2003);
  - SPINNO 2004-2006(7) regulation, explanatory report to the regulation, amendment regulations and their explanatory reports, impact evaluation report (Brighton, Kells 2007);
  - SPINNO 2008-2013 regulation, explanatory report to the regulation, amendment regulations and their explanatory reports, project material from Enterprise Estonia
2. Interviews with the representatives of the management authority of the Ministry of Economic Affairs and Communications (Jarmo Tuisk and Marika Popp), implementing authority Enterprise Estonia (Tiiu Evert, Tiina Kalju) and project applicants Tallinn University of Technology (Indrek Jakobson) and University of Tartu (Erik Puura)

## Theoretical framework

In order to build a theoretical basis for carrying out the empirical analyses on SPINNO program, the knowledge transfer support scheme formation and evaluation framework was developed. The framework composes of three interconnected sets of developments. First, it catches the evolutionary changes taking place in theoretical and practical conceptualisation of innovation processes, described by the five generations of innovation models (see for example Rothwell 1994 or Trott 2002) in the scale of Mode I, II and III knowledge creation frameworks (being described by Gibbons *et al.* 1994 and Etzkowitz *et al.* 2001).

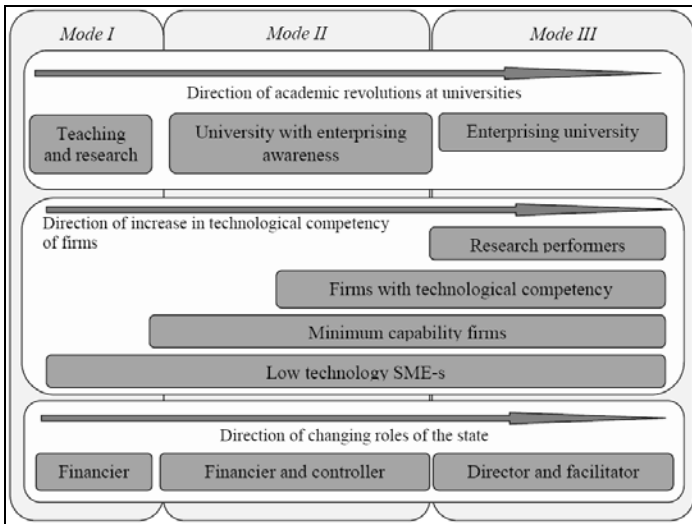


**Figure 1.** Development of innovation models in the scale of Mode I, II and III knowledge creation frameworks. (Compiled by authors)

Mode I framework corresponds to the linear model of innovation, where the creation of new knowledge takes place in universities, inside individual disciplines, in the form of academic basic research and independently from societal needs. Through the development of coupling and integrated innovation models characterizing Mode II framework, knowledge creation will turn into process initiated by interdisciplinary research, carried out in various institutions in accordance with societal needs and

regulated by national innovation systems. However, the role of universities is limited to the providing practical input to innovation processes carried out by businesses. Under Mode III framework characterized by Triple Helix innovation model, the sources of knowledge are no longer viewed as performing separate functions, but taking over each other's tasks and forming dynamic integrated networks and hybrid organizations. Universities play the leading role in this knowledge-based process as their functions of carrying out research, creating practical output and providing education build the basis for network-based aggregation and involvement of partners.

Secondly, the evolutionary development of innovation systems along the scale of Mode I-III involves the changing roles of university, industry and the state described on the following Figure 2.



**Figure 2.** Development of the roles of university, industry and state in the scale of Mode I, II and III knowledge creation frameworks. (Compiled by authors)

Universities in the Mode I framework perform the role teacher and independent research body. To enter into Mode II knowledge creation framework and develop cooperation relationships with firms and other actors in innovation process, universities have to undergo second academic revolution and acknowledge their roles in economic processes through capitalization of knowledge, cooperation and knowledge transfer. Changing the spirit of universities, who have for long time been independent performers of academic basic research lead by linear logic, is a long-term process demanding wide inner informing and awareness rising activities and setting up of supporting regulative arrangements. Therefore, after universities have acknowledged their roles in the entrepreneurial activities and innovation process, a

preparatory phase follows until they develop into really enterprising universities – get involved in wide range of complex knowledge transfer activities implying to Mode III framework.

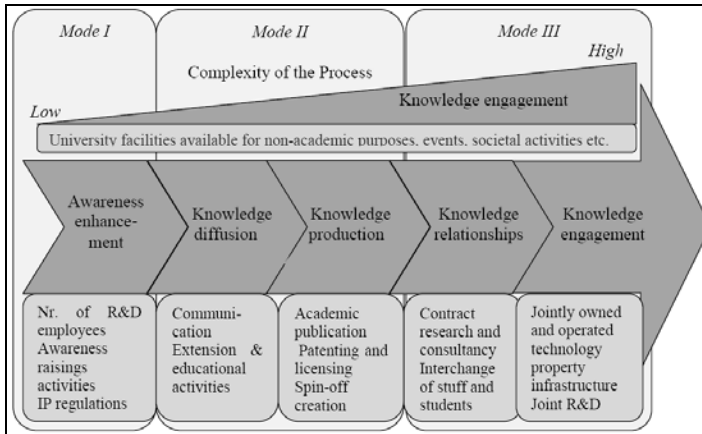
At the same time, for Mode III kind of interactions to evolve, enterprises need also to hold certain capacities (have sufficient technological competency and innovative capacities) to be able enter into cooperation relationships among themselves and with universities, and even to know how to use this cooperation. Enterprise sector will contain firms of different technological competency under each level of knowledge creation and innovation processes, but when moving towards Triple Helix and Mode III, the share of firms with technological competency and research performing capacities have to increase.

The role of state under Mode I is lead by linear logic of innovation and therefore its functions are limited to financing the basic research taking place in universities. As the basic research in universities is carried out independently from societal needs, the state does not perform according coordinating and control functions over the invested funds. In entering Mode II framework, knowledge creation develops into interdisciplinary process motivated by societal needs. Therefore, the state acquires regulative and control functions and begins to develop systemic innovation policy. When evolving towards Mode III framework, the traditional roles of the state, universities and enterprise sector start to diffuse, where financing and control functions of the state will also diffuse to other sectors and state will obtain the role of facilitator of these processes.

The development in the Mode I, II and III scale is characterized by the growing complexity of knowledge transfer activities between university and industry, which is enabled by the cumulative development process of the parties. Howard (2005) has proposed a systemic framework describing the channels via which universities and research organisations generate economic benefits composing of the following four broad channels:

1. Knowledge diffusion: via encouraging the broad industry-wide adoption of research findings through communication, building capacity within industry through extension in spin offs, education and training;
2. Knowledge production (standard model of research commercialisation): by selling or licensing the results of research in the form of commodified knowledge;
3. Knowledge relationships: by providing services that indirectly exploit broad intellectual property platforms consisting of trade secrets, know-how and other forms of tacit knowledge. This approach centres on cooperation, collaboration, joint ventures and partnerships.
4. Knowledge engagement: universities and research organisations generating useful economic outcomes as a by-product of shared interests and concerns that transcend the boundaries of the university per se.

The consecution of Howard’s channels of knowledge transfer (from 1 to 4) stands for their increasing complexity in the scale of Mode I-III knowledge creation framework accompanied by changing roles of university, industry and state.



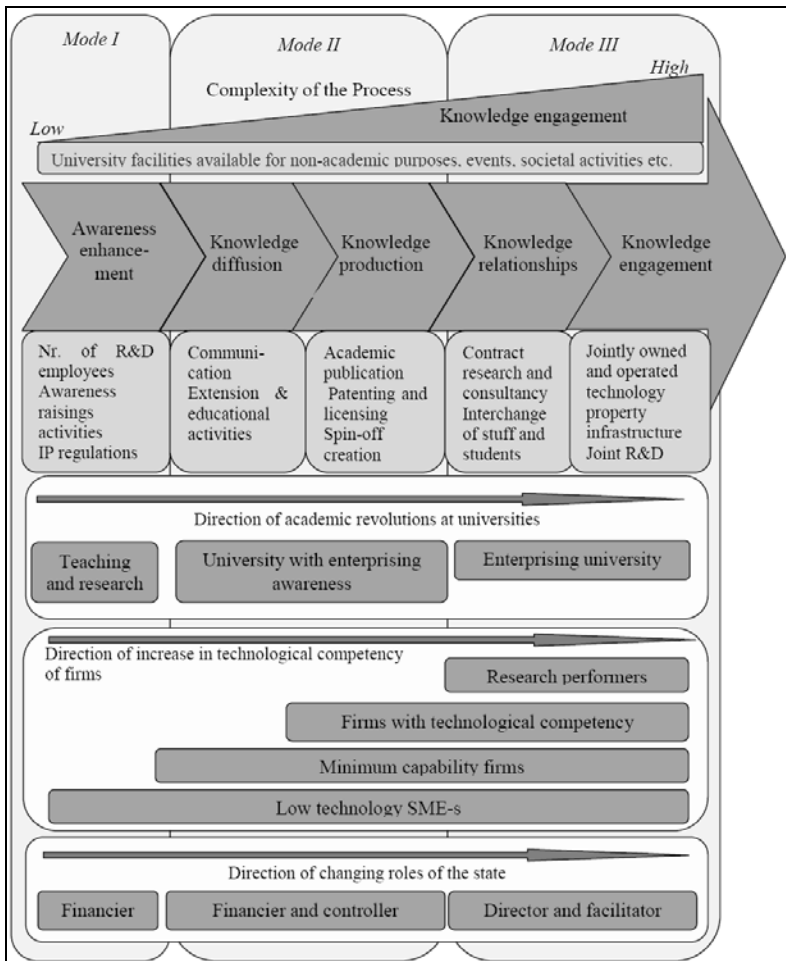
**Figure 3.** Development of knowledge transfer channels and indicators in the scale of Mode I, II and III knowledge creation frameworks. (Compiled by authors)

Development of these forms of cooperation requires that the universities have gone through the second academic revolution and the companies have sufficient technological expertise. Thus, knowledge diffusion is preceded by the stage of awareness enhancement (inner development of the involved organisations, raising awareness and building supporting infrastructure) as a prerequisite for reaching out for cooperation and knowledge exchange.

In addition, the last stage of knowledge engagement appears in two forms. First, non-academic use of universities’ facilities (libraries, cultural centres, sports grounds etc.), University-organised events for community and regional economic and social benefit (workshops, seminars etc.) participation in non-academic community and economic activities, which accompany and support knowledge transfer activities in all levels of complexity. Knowledge engagement in a more specific context of knowledge transfer activities stands for a stage following the cooperation, collaboration, joint ventures and partnerships developed under the phase of knowledge relationships when research and development infrastructure convergences near universities and science parks and knowledge transfer appears based on jointly owned and operated technology property infrastructure – technology and research parks, buildings, equipment, instruments etc.

Described three interconnected sets of developments compose the knowledge transfer support scheme formation and evaluation framework presented on Figure 4.





**Figure 4.** Knowledge transfer support scheme formation and evaluation framework. (Compiled by authors)

### Criteria for Government support scheme development

According to the framework, government support schemes enhancing knowledge transfer must follow inductive logic. Under Mode I framework the focus of the support scheme should be in inner developments of the participating institutions, in the case of universities on raising awareness of innovation and entrepreneurship and setting up according regulations and rules (intellectual property and business activity regulations, motivation systems, communication strategy etc). Outputs of this stage

are the support structures built, regulations adopted, number and volume of awareness-raising activities implemented. The result of these activities is the second academic revolution taking place in universities.

Under Mode II framework, the universities have acknowledged their role in the process of economic value creation and less complex knowledge transfer processes (Knowledge diffusion) phase will evolve characterized by widespread dissemination of research results (communication, training, etc.) and the creation of knowledge products (patents, licenses, spin-off companies, etc.). The result is increasing public awareness of the research taking place at universities, evolving cooperative arrangements and the respective competencies and increase in the volume of knowledge transfer activities and complexity.

Under Mode III framework more complex Knowledge relationships will evolve (contract research, analytical and testing services to companies, etc.). With progressing interactions, diffusion process of traditional separated roles described by Triple Helix innovation and Mode III knowledge creation framework will start followed by convergence of research and development infrastructure near universities and science parks and emergence of cluster infrastructure.

According to the knowledge transfer support scheme formation and evaluation framework, the design and evaluation of government support schemes enhancing knowledge transfer must be based on the following principles:

- the task of the support scheme is to guide and develop the participants of knowledge transfer process on the scale of Mode I-III: to foster the progress of academic revolutions in universities, the increase in technological competency and innovation awareness in enterprises, parallel of which the role of the state will alter from funder and controller to protector and director.
- The focus of the aims and activities of the support scheme has to follow national framework conditions, development assets and deficiencies of the involved parties and direct the aims and activities of the program to utilizing the preconditions and elimination of the deficiencies.
- The indicators of the support scheme aimed at enhancing knowledge transfer have to measure the whole range of knowledge transfer activities with growing complexity in the scale of Mode I-III, to enable the analyses of the appearing changes.
- Government support must lead to sustainable development of knowledge transfer processes through diversification of the sources of academic research funding.

Knowledge transfer support scheme formation and evaluation framework provides a basis for qualitative assessment of the results of the program through the quantitative inputs and outputs, thus compensating the lack of socio-economic impact indicators.

## **Framework conditions for knowledge transfer in Estonia**

Analysis of framework conditions for knowledge transfer in Estonia shows significant shortcomings in the preconditions for Triple Helix development:

1. Research and development in Estonia has been characterized by a strong orientation towards basic research and linear model, which has rooted in the vision about the functions of university among its academic staff.

The process of academic revolutions in Estonian universities compared to developed countries is somewhat shifted. The first academic revolution emerged after the disintegration of the Soviet Union and the process continued during the second half 1990ies. Estonia is currently in transition to the second academic revolution: the traditional roles of a university – teaching and scientific research – are being supplemented with new roles – direct participation in the creation of economic and social capital (Mets 2009).

Estonia has been characterized by very low patenting activity – up to 28 times smaller than EU Members average (Eurostat 2009), which is also related to Estonian socialist background, where invention was public good and inventors supported by state with no need to intellectual property creation (Vinter 2005).

2. Business sector is largely made up of small or medium size and relatively low-technology companies, whose specialization is not aligned with the universities orientation resulting in the lack of cooperation between them.

Approximately 98% of Estonian enterprises are small or medium-sized companies and only small numbers of firms registered in Estonia are middle or high-tech companies (Eesti väikese... 2005). Almost half of Estonian enterprises are innovative (49%), which is a better result than the EU average, but the total expenditure on research and development composes of large proportion of investment to machinery and equipment (70%), which has increased substantially between 2000 and 2004 (Viia *et al.* 2007: 9). This means that real R&D share of firms is quite small.

Case study analyses of Estonian companies are close to the European Union Community Innovation Study, according to which a third of companies are capable of delivering change, one tenth are able to change their position on value chain, but 40% do not see the need for change or can change (Eesti konkurentsivõime... 2009: 36). Thus, a great share of Estonian businesses are situated in lower boxes of technological competence and need according support measures before they are able to enter into cooperation and knowledge transfer activities.

3. The State has been the main financing body of national research and development activities with strong orientation towards basic research in universities, hampering the cooperation possibilities between university and industry.

Aggregate expenditure on research and development in Estonia is increasing but sharing still comparatively low level, constituting 0.61% of gross domestic product (GDP) in 2000 and 1.29% of GDP in 2008, which is only about the half of the European Union “old” Member States` corresponding average (Eurostat 2009). Positive is however, that the Estonian R&D investment ratio to GDP has increased almost twice during the period.

Dominating financier of R&D has been public sector (state) amounting to 60% of total R&D expenditure in 2000, that has dropped to about 57% to 2008 (Eurostat 2009). In addition, R&D expenditure has been strongly inclined towards linear model, as most of the investments support academic basic research. In developed countries the ratio is the opposite, with an emphasis on applied research and development activities. State support has been aimed to develop high-technology in universities and technology and innovation policy has been too complicated for average firms (Jürgenson *et al.* 2005).

State function must refocus on diversification of R&D investments instead of only basic research-oriented approach. Thus, it is important for state to re-evaluate its priorities and position itself in knowledge-based economy which will be further elaborated and evaluated under the following analyses of SPINNO program.

### **Development of SPINNO program**

Government is supporting the development of awareness, skills and infrastructures related to knowledge transfer in Estonian universities since 2001 with SPINNO program. SPINNO program were together with R&D program the first two innovation support schemes in Estonia. Also, in an international context, Estonia was at the forefront of the drive of launching government support schemes facilitating knowledge transfer. In Great Britain, which has been one of the leading countries in knowledge transfer management and pattern setting for Estonia, similar support scheme was initiated by Higher Education Funding Council in 2000 (HEROBC program).

Till now two funding periods (2001-2003) and 2004-2006(7) of SPINNO program have been implemented with 100 million Estonian kroons (EEK) altogether invested to enhancing the knowledge, skills and environment for knowledge transfer. Third period (2007-2013) is ongoing consisting of two-year core-funding periods with 80 million EEK planned.

Background report was prepared by independent experts (Technopolis and KU Leuven) before the launch of the program. Report (de Jager *et al.* 2001) confirmed, that Estonian research and development activities are strongly shifted towards basic research and the level of implementing the results of research and development for business purposes lags significantly behind the European Union average. The preliminary study (de Jager *et al.* 2001) showed that although Estonian universities are relatively good by their research capacity, the maturity of their business incentive structures varies, but in general they all lack proper support structures. It was

therefore stated in the regulations of the first SPINNO program (2000), that universities must take the leading role in stimulating knowledge based entrepreneurship and the aim of SPINNO program is to promote their entrepreneurship-targeted functions.

Due to the novelty of international development of knowledge transfer field, the system of knowledge transfer indicators were not developed during the first period of SPINNO and therefore no coherent system of indicators measuring the knowledge transfer activities facilitated was required also under Spinno 2001-2003. However, it was stated in the program regulations (SPINNO programm 2000: 3) that the business orientation towards entrepreneurship will be evaluated based on research and development results being used for commercial purposes, which may be organized in the following two ways: contract research and development; Spin-off entrepreneurship, patenting and licencing.

Three projects were financed with government support up to 75% from the eligible expenses in the 2001-2003 – Tartu University with partners, Tallinn University of Technology with partners and project BioSpinno composing of network of actors in Estonian biotechnology field.

In 2003, evaluation of the programme implementation and results (Evaluation of... 2003) was carried out by SQW limited, noting, that the programme should continue, as culture and attitude towards knowledge transfer and the conception of entrepreneurial universities is starting to change in positive way, but a long way is still to go. Also, it was noted, that there is a need for more thorough support system for demand side – enterprises.

Based on the recommendations made in Evaluation report, SPINNO 2004-2006 was launched with some changes – preliminary application procedure was initiated, set of indicators was launched reported by the applicants, the amount of support was decreased from 75 to 65% of the eligible expenses and participation in SPINNO was widened to applied higher education institutions. In 2004-2007 financing of previous three projects was continued and 4 more projects (Tallinn University, Estonian Academy of Arts, Estonian Maritime Academy, University of Applied Sciences) were financed.

In 2006, impact evaluation was carried out again by SQW Limited. It was concluded in the Evaluation report (2007), that the program was effective in reaching qualitative goals – in motivating the members of beneficiaries, raising their awareness and skills in knowledge transfer, establishing the structures and regulatory environment for knowledge transfer. Quantitative indicators like incomes from contractual research and development, consultancy and training activities offered to firms were accomplished on the planned level. The results did not meet the expectations set regarding patenting, licensing and spin-off creation and there were problems also regarding finding and financing suitable personnel.

The report concluded that SPINNO program has significantly increased the readiness for cooperation between universities and industry, but the field of knowledge transfer still shares low reputation amongst the managements of universities as a whole and, consequently, their poor representation in the strategic development priorities (Brighton and Kells 2007). The evaluators supported the continuation of the program, but recognized as in 2003 that the main challenge is the low level of knowledge and skills in research and development cooperation in the vast majority of Estonian companies.

New period of SPINNO funding was launched in 2008 when based on the example of Great Britain, system of two-year core financing periods of the knowledge transfer function are implemented. Financing is based on the formula composed of indicators characterising presumptions and results of knowledge transfer of the applicants two years before. The indicators used for calculating core funding formula are related directly to the necessary base for successful knowledge transfer (the number of applicant's research and development personnel), performance indicators characterising knowledge transfer results during the agreed time-period (revenues from R&D contracts, sale of licenses and patents, testing and analysis, training and consultancy services), and indicators characterizing sustainability of knowledge transfer function in the organization (the number of contracts with business, public and non-profit partners, the number of employees in the field of knowledge transfer) (Seletuskiri majandus... 2008: 6). Size of the grant is calculated based on the formula and applicants have to additionally submit application form where they describe the aims, activities, their results and impacts facilitated by the money used.

The aim of core-funding system is to guarantee insured and stabilized funding that enables to hire and keep relevant personnel and guarantee elementary platform for knowledge transfer activities. In 2004-2007 existing 7 institutions were financed with BiosPinno being replaced with single institution of Estonian University of Life Sciences.

### **Evaluation of SPINNO program**

During the first implementation period of Spinno program, the similar support schemes in the international arena were freshly launched in comparatively more developed Triple Helix contexts (eg. Great Britain, Sweden etc). The best practices were imperfect and the systems of knowledge transfer activities and indicators to be developed. As an important prerequisite for Triple Helix creation, the program-makers have taken the international experience as the basis for SPINNO set-up development and evolved together with it. Next, the evaluation on the set-up of SPINNO program is given regarding its objectives, activities, indicators and results. Following, the problems revealed and solutions proposed are elaborated.

## Objectives

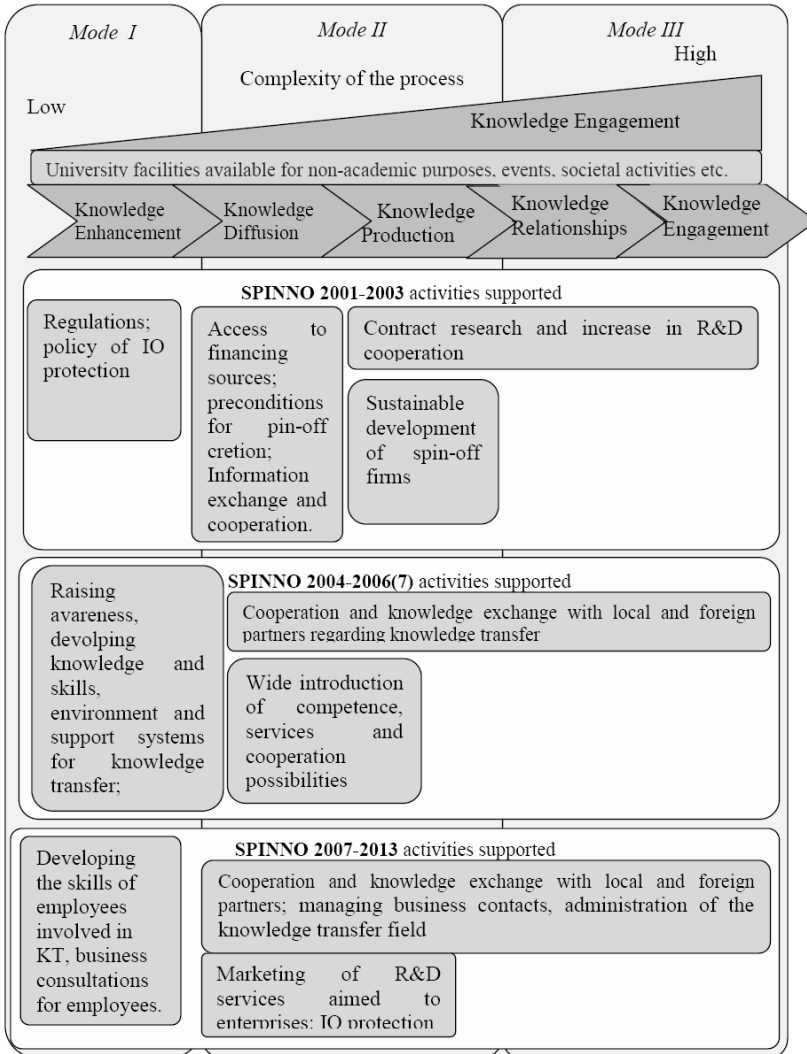
In the early years of SPINNO program Estonia was positioned mainly in the Mode I framework (universities were predominantly academic basic-research oriented, business sector consisted mainly of low-technology small-and medium-sized enterprises and up to 60% of research and development activities were financed by state of which most part was directed to academic basic research). According to inductive approach based on knowledge transfer support scheme formation and evaluation framework, the program should have had strong emphases on the developing knowledge transfer infrastructure, raising awareness through internal processes of universities and disseminating knowledge, educating and shaping values of society, which devolves from universities into business and wider society and allows universities to start participating in economic processes.

Objective setting of the first SPINNO programme was characterized by contrarily deductive logic. During the first program period the strategic objective was set on very broad terms aiming on Estonia's international competitiveness and strengthening of national innovation system. On the second period the objective was focused on expanding the cooperation between universities and industry and strengthening the capacity of universities to participate in these relationships and lead the innovation process. On the third reporting period, the system of objectives was reduced to the level of universities and aimed at increasing the sustainability of knowledge transfer function as one of their strategic missions on equal basis with teaching, research and development. This evolution of general objectives of the programme could be seen as refocusing of the program, but at the same time, the substance of knowledge transfer concept has also altered.

In the first and to lesser extent in the second program period the concept was viewed by both, the programming institutions and applicants, as limited to technology transfer. By the third reporting period it was acknowledged, that even more important is to facilitate knowledge transfer as the precondition for technology transfer. It was also realised by the programming institutions, that knowledge transfer does not only include the interaction between university and industry, but is concerned with interactions between universities and the rest of society (including public and non-profit spheres).

## Supported activities

Despite the inconsistencies revealed in programme targeting and considerations regarding the nature of knowledge transfer, the activities financed by the program were consistent with the development needs of the Mode I-III framework.



**Figure 5.** Activities supported by SPINNO program during financing periods of 2001-2003, 2004-2006(7) and 2008-2013.

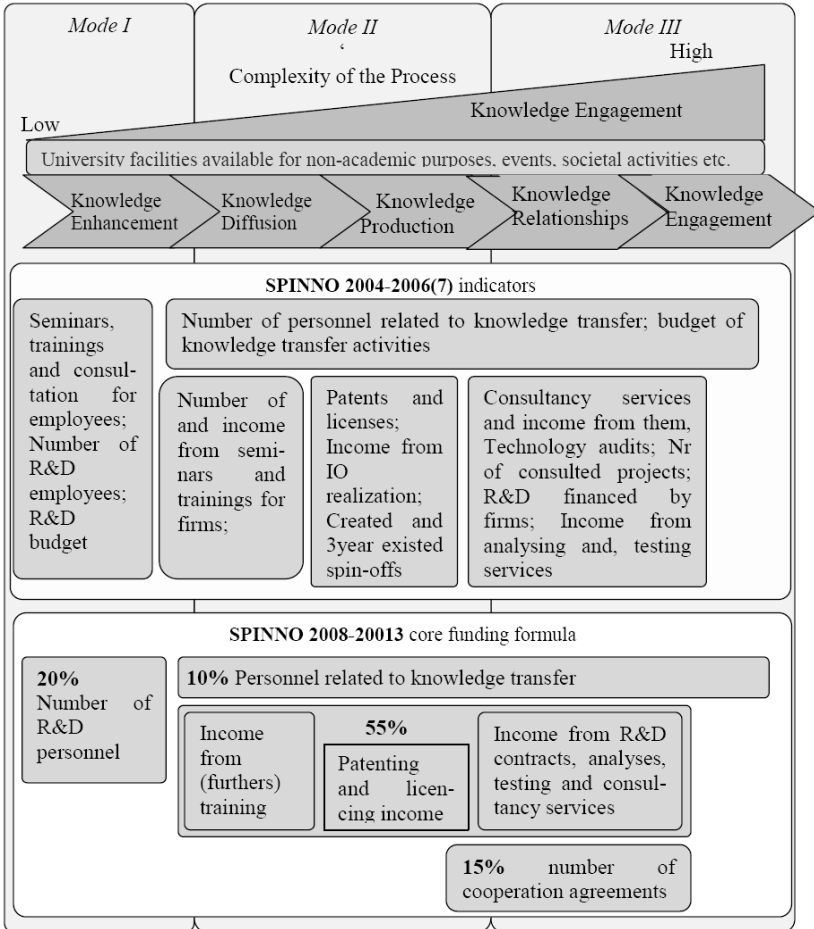
Figure 5 reveals how the activities supported are focused around Mode I and Mode II knowledge creation frameworks and therefore are consistent with the needs of framework conditions of Estonian national innovation system. Also, comparing the activities supported with general and sub-objectives of the programme and the



indicators expected, it could be said, that the gap between the aims and expectations on one side and supported activities the other has been consistently converged.

### Indicators

The system of indicators on different SPINNO programming periods is presented on Figure 6.



**Figure 6.** Indicator systems of SPINNO program during financing periods of 2001-2003, 2004-2006(7) and 2008-2013.

In the first program period no general indicator systems were set. The second period was characterized by plurality of indicators in places with disputable interpretation resulting in loss of quality and posing a huge administrative load to the project applicants obligated to report them. Third period is ordered and reasoned with indicators measuring the activities in the whole scale of Mode I-III.

## Results

**Table 1.** Aggregated performance and targets for all projects during 2001-2006

Indicator	2001	2002	2003	2005	2006	
Income from consultation and training services (1000 EEK)	4 100	6 162	8 731	14 580	17 515	Prognosis
				24 665	35 668	Actual
Income from R&D contracts with businesses (1000 EEK)	19 104	3 474	37 581	46 180	56 900	Prognosis
				54 108	57 731	Actual
Income from analysis and testing services (1000 EEK)	3 451	4 228	7 345	9 800	11 300	Prognosis
				8 180	5 659	Actual
Patents granted (pc)	5	8	9	9	34	Prognosis
				3	8	Actual
Licenses granted (pc)	3	4	7	6	12	Prognosis
				6	13	Actual
Income from realisation of IP (1000 EEK)	2 779	2 695	4 315	6 330	8 400	Prognosis
				877	3 185	Actual
Spin-off businesses established (pc)	5	7	15	7	10	Prognosis
				5	10	Actual
Spin-offs existing for 3+ years (pc)	7	12	19	32	38	Prognosis
				26	29	Actual

Source: Brighton and Kells 2007

The dynamics of SPINNO aggregated output indicators is corresponding to the expected dynamics defined by knowledge transfer support scheme formation and evaluation framework, with the exception of Knowledge Production stage. The most important change revealed by documentation analyses and interviews is the qualitative change taken place (Mode I, Awareness Enhancement) – the universities have been acknowledging the nature and importance of knowledge transfer function. The highest growth amongst quantitative indicators has been achieved regarding the income levels related to consultation and training services (increased 8.7 times over the period 2001-2006), which represent knowledge diffusion phase of Mode II framework. Incomes from contract research representing the knowledge relationships phase of Mode III framework have been growing three times during the period of 2001-2006. The expected outputs of knowledge production phase (patents, licences and spin-off creation) have not been achieved in Estonian context. The phase represents the linear model of innovation referring to technology transfer,

which in Estonian context therefore has to be preceded by longer knowledge transfer period

The interviews and documentation analysis revealed, that amongst both, the program-setting institutions and applicants, there has been a positive shift in the scale of Mode I-III. Amongst program-setting institutions the change has been towards Mode III and amongst applicants towards Mode III or Triple helix framework. In conclusion, SPINNO program has been following the described line of government policy and been at some point biased towards linear technology push theory, but it can be said that the state has been able to be a step ahead from the general development in the scale Mode I-III and take the lead on directing the knowledge transfer processes.

### Problems and proposals

The analyses revealed, that the program has not paid enough attention to different aspects of sustainability of knowledge transfer function and on spreading according attitudes among the applicants. At present, when the knowledge transfer functions are supported for eight years and is well known that in 2013 the following decisions must be made regarding the continuation of the program, more attention must be paid to the potential for knowledge transfer function and its independence of assumptions through the analysis of sustainability indicators that reflect the diversity of sources of funding such as research, knowledge transfer process, the complexity and an increase in the working duration and repetition.

The core funding formula used in third program period is fraught with danger for qualitative change to be hampered in the simple optimization of the formula components. Therefore, in order to guide the qualitative change taking place in universities towards sustainable development of core-financed knowledge transfer function and to ensure data for assessing the need for further financing of the function during the funding period, next to input and output indicators qualitative indicators should be analyzed alongside.

Qualitative indicators, systems and practices are still evolving and current study does not attempt to carry out a thorough analysis of any qualitative or impact indicators, but in light of the analyzes some of the recommendations in the context of the existing system can be made regarding possible qualitative indicators:

- separating the income volumes from corporate, public and private sector cooperation gathered for core funding formula enables to analyze the dynamics of research and development funding sources in regards of different sectors and knowledge transfer channels of different complexity;
- consideration should be given to involving the indicator measuring the percentage of income generated by repeated cooperation, enabling to assess the sustainability of cooperation in form of duration and repetitiveness.

Next to the process of designing the set-up of Spinno programme, the developments amongst business sector (knowledge transfer demand side) taken place on scale Mode I-III has been insufficient studied, elaborated and taken account. Since the program has 8 years of history and the focus of the program has been evolving to improving the quality of knowledge transfer activities, an analyses exploring the sustainability of cooperation relationships developed (their length and repetitiveness) and changes in demand should be carried out. This should be an important input to possible following evaluations and deciding on continuation of the program.

Although in the long term, the knowledge transfer to non-profit and public sector is also important, in current knowledge transfer framework the focus of the programme should be on university-industry knowledge transfer activities which is an important key to solving the major problems of Estonian innovation system – both the low innovation awareness of business sector and the low contribution of the private sector in research and development.

## **Conclusion**

The gap between the aims and expectations on one side and supported activities the other has been consistently converged. In the first and to lesser extent in the second SPINNO program period the concept was viewed by both, the programming institutions and applicants, as limited to technology transfer. By the third reporting period it was acknowledged, that even more important is to facilitate knowledge transfer as the precondition for technology transfer. It was also realised by the programming institutions, that knowledge transfer does not only include the interaction between university and industry, but is concerned with interactions between universities and the rest of society (including public and non-profit spheres).

The dynamics of SPINNO aggregated output indicators is corresponding to the expected dynamics defined by knowledge transfer support scheme formation and evaluation framework, with the exception of knowledge production stage. The most important change revealed by our analyses is the qualitative change taken place (Mode I, awareness enhancement) – the universities acknowledged the nature and importance of knowledge transfer function. The highest growth amongst quantitative indicators has been achieved in the income levels related to consultation and training services (increase of 8.7 times over the period 2001-2006), which represents the knowledge diffusion phase of Mode II framework. Incomes from contract research representing the knowledge relationships phase of Mode III framework were growing three times during the period of 2001-2006. The expected outputs of knowledge production phase (patents, licences and spin-off creation) have not been achieved in Estonian context.

The analytical framework developed under this study provides an useful basis for the design and case studies of programs enhancing knowledge transfer.

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# HOW TO SPEAK THE SAME LANGUAGE WITH EUROPEAN INNOVATION-POLICY IN TERMS OF LIVING LABS?<sup>1</sup>

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## Abstract

A Living Lab is a user driven open innovation ecosystem, which combines consumers, firms and public sector. It is a rather new innovation methodology, which steadily gains stronger acceptance and becomes a significant innovation policy's instrument in many countries. This article provides suggestions and conceptual framework for the applying living lab as the innovation policy instrument in the framework of national innovation-system in small countries. In the countries with the total lack or very limited experience about using the living labs the introduction of living lab approach requires answering several important questions. The paper is focused on the identification of potential areas of using living labs approach as well highlighting also potential obstacles in the process of its application in Estonia.

**Keywords:** innovation and invention: processes and incentives; management of technological innovation and R&D; technological change: choices and consequences; diffusion processes

**JEL Classification:** O31, O32, O33

## Introduction

During the last decades radical changes happened in the functioning of national innovation systems. The dominant linear innovation model is gradually replaced with the interaction and learning based approach. Open innovation approach and understanding about the utmost importance of using different sources of knowledge in the innovation process becomes basis for thinking and modern policy-making. The economic crisis has put more pressure to governments and firms to be more effective and innovative. When most of all new products don't make it on the market, it is crucial to learn and find out what users actually want and need. One solution here is to engage end-users into the innovation process more strongly, even as active co-creator. The same goes for public social services - to supply services that raise welfare among users most effectively.

In last decade, a shift in innovation paradigms has taken place – new innovation concept has been developed, implemented successfully into practise and has found acknowledgement in many counties. Living lab is methodology of innovation

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system as well the organisation that mainly uses it. Living lab is user-driven open innovation platform with real-life settings, which could be called as the public-private-people-partnership. End-user involvement and co-creation in innovation process is seen as powerful instrument at all stages of innovation process. By the end of year 2009 there were 129 members represented in European Network of Living Labs (ENoLL) (European Network... 2009). Also there are many non-members, operating mostly in Western European. The concept of Living Labs reached to Europe from USA around millennium, so the living labs in practise are rather new phenomenon.

Living labs gain more support also from the European Commission to contribute effectively to European innovativeness and competitiveness. So far Estonia is making only its first steps and has not stated its clear attitude towards living labs.

The aim of the article is to give recommendations for the Estonian innovation policy makers in order to use living lab as an innovation policy instrument. The findings of the article could be used also for the other small economies where living labs are not used yet, or the experience is rather occasional. Explaining the characteristics and criteria of living labs provides a general picture where the innovation process should be directed and how living labs could be used to create innovations more effectively. As living labs have various forms, existing living labs are studied and the framework for categorization is created by authors. The question how to choose the direction, form and sector for implementing living lab is raised and some options are proposed and analyzed. For discussion many critical issues about living labs are brought out.

Since living lab is rather new research area, the amount of systematic analyses and supporting theories are limited. Besides research-papers this article bases also on conference presentations and papers, roadmaps and reports. The living lab concept can be taken into smaller parts and literature can be found on specific aspects. Following article is based on the analysis of the work of 68 European living labs, including all ENoLL living labs from Nordic countries. During the research process also two interviews were made, with the president of European Network of Living Lab and Nokia development director Veli-Pekka Niitamo and CEO of Forum Virium Helsinki Jarmo Elukka Eskelinen.

### **Different approaches toward the living labs concept**

The term “Living Lab” presents a methodology as well organisation that mainly uses this approach in innovation process. Different perspectives have been stressed by various authors about the concept of living labs. Typically a living lab is understood as an environment where ICT developers and service providers can test and validate new solutions on users, be sensitized with regard to new and unexpected uses, and find inspiration for future innovation (Følstad 2008).

From the methodological perspective living lab can be defined as research- and development methodology as well innovations that are created and validated in co-creation based, multi-contextual real-life setting. (Eriksson *et al.* 2005) Ballon *et al.*



(2005) define living lab as experimental environment where technology is given in real-life context and where end-user is involved as co-creator. The emphasis is on environment, experimentation and testing as well on the user who is seen as co-creator.

The official definition comes from ENoLL: Living Lab is open innovation environment with real-life setting, where user-driven innovation is co-creation process for new services, products and social infrastructure. Living Lab is co-creating environment for human-centric research and innovation. The emphasis here is on user-driven and open innovation. (European Network... 2009) The definition used in CoreLabs projects: system allowing users of the services and products, to take active role as contributors and co-creators in research-, development- and innovation process (CoreLabs 2007). User and its active role are in the centre of this definition. But it also pays attention to living lab as the system of interactive players.

Bergvall-Kåreborn *et al.* (2009) define Living Lab as an environment in which people and technology are gathered and in which the everyday context and user needs stimulate and challenge both research and development, since authorities and citizens take active part in the innovation process. The underlying idea is that people's ideas, experiences, and knowledge, as well as their daily needs of support from products, services, or applications, should be the starting point in innovation (Bergvall-Kåreborn *et al.* 2009). Again the importance of environment and users is brought out.

From these definitions a starting point for living lab can be marked: close cooperation with shareholders, develop products and services from the point that users actually want and need, where living lab role is to combine and empower users so that they would participate in value creation. The main precondition for living labs is the development and testing takes place in real-life context, not in constructed sterilize lab. (Ståhlbröst 2008)

As mentioned, living lab can be seen as methodology as well as an organisation. Lama and Origin (2006) describe living labs as user-centric research methodology for sensing, prototyping, validating and refining complex solutions in multiple and evolving real life context. Here living lab is described as methodology. Whereas living lab is also being defined only as small organization that aim to capture users' insights, prototype and validate solutions in real life contexts. (Almirall 2008) Here living lab is narrowed down to organisation, and only the environment by real-life context is emphasised but not how users are involved in innovation process.

Van der Walt *et al.* (2009) has found that there are two different streams of thoughts regarding the living lab concept. For some living lab is pure "testbed" for innovative solutions while others see living labs as a pure means to conduct context research and co-creation with other users. (Van der Walt *et al.* 2009). Niitamo (2009) refers that testbeds and living labs should not be equalized as living lab is wider concept with uncontrollable elements.

From institutional perspective, a Living Lab can be defined as “a system based on a business-citizens-government partnership which enables users to take active part in the research, development and innovation process. Products and services are developed in a real-life environment in a human centric and co-creative way, based on continuous feedback mechanisms between the developers and the users”. (Study on... 2009) The system perspective puts focus on the relation between the Living Lab as a whole and its interdependent parts.

Focus on one aspect leads to the biased concept, especially in practise. Living Lab should be seen as an integral part of the national innovation system.

### **Key-elements of the living labs approach and its importance for the country**

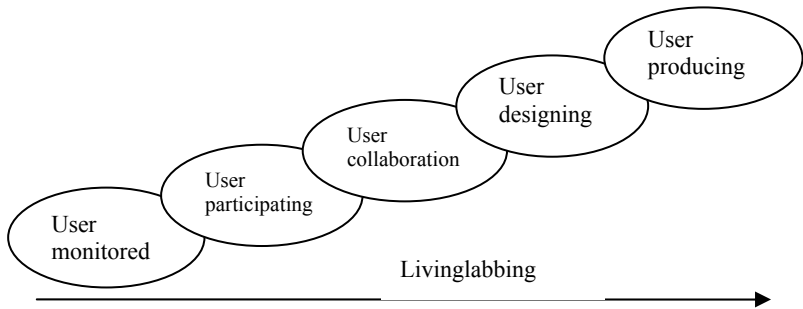
In this part the key-elements and criteria of living labs are presented. Concurrently the level of organisation and economy are in focus. Following characteristics are precondition for more successful innovation in organization (firm, co-operation, etc.) as well creating innovative economy in general. Some possible spill-over effects are brought out. We suggest that the criteria set for organisations apply also on more abstract level.

Living lab should meet four criteria (Eskelinen 2009):

- 1) user-driven - the access to real end-users community and the involvement in innovation process;
- 2) open innovation way of thinking;
- 3) ecosystem – collaboration network of facilitators, service providers, customers and communities;
- 4) real-life environment for testing and validating.

The most distinctive feature of living labs is the engagement of end-users as the active stakeholders. Users have been transformed from passive objects to active subjects who contribute and acts as co-creator (Følstad 2008). User communities' activation and participation is the basis of user-driven innovation (Eskelinen 2009). The large number of users involved when trying out new ICT solutions is almost exclusively a characterizing purpose of the Living Labs; “Large numbers of users” being understood as several hundred or more (Følstad 2008).

User involvement could happen with different intensity. Niitamo (2009) refers to five levels of user engagement (figure 1): 1) users monitored/u-data simulation, 2) user participating, 3) user collaborating, 4) user designing and 5) user producing. If traditional market-research methods and tools are adequate living labs are not needed and instead traditional tools (e.g. questionnaire) could be used. One goal is to get insight of users needs and wants that they are not able or willing to reveal - decoding tacit knowledge of users. From the other end of the scale the more direct contribution in innovation creation and product-service development is expected.



**Figure 1.** Levels of user engagement. (Niitamo 2009)

By users engagement Living Labs intrinsically create societal awareness (Almirall 2008) and make citizen more active. Almirall referring to Florida notes that this is relevant because the innovative capacity of a society depends also on soft factors, among them its perception of being innovative. (Almirall 2008) When users are aware of their influence they are more willing to contribute and generate spill-over effect where more people want to be important and acknowledged.<sup>2</sup> Living Lab is instrument for rising people activeness and creativity. Active and creative user communities are precondition of innovative society.<sup>3</sup>

Open innovation by Henry Chesbrough's definition is the use of purposive inflows and outflows of knowledge to accelerate internal innovation, and expand the markets for external use of innovation, respectively (Chesbrough 2003). This paradigm assumes that firms can and should use external as well as internal ideas and internal and external paths to market, as they look to advance their technology. (Study on... 2009) It is crucial to co-operate with other organisations to sell, buy and licence innovations. For Living Labs the main elements of open innovation include open collaboration, open data, shared R&D activities and trade of results (Eskelinen 2009). All these aspects are important both levels for company as well for small country economy.

Ecosystem is multi-partnered collaboration network of facilitators, service providers, customers and communities. Public-private-partnership is the basis but as users are involved as equal partners we can call it public-private-people-partnership. The network can vary from few firms and organisations up to hundred, but the number must optimal and accordance to the aim of activity and methods. Strong cooperation between different partners is one method of open innovation and it allows using resources more effectively. More abstract level collaboration creates trust in society.

Partnership and collaboration network can be created with long-period perspective but as Eskelinen brings out, the ecosystem might be temporary *ad hoc*-ecosystem. Although sustainability is one key-characteristic, some living labs and therefore

<sup>2</sup> Good example here is Ericsson where co-creation is in competition form.

<sup>3</sup> Eskelinen refers to so-called beta-testing culture in Finland.

ecosystems might be created only for projects. Følstad (2008) disagrees, and claims the innovation is not achieved through short and fragmented project initiatives but through long-term innovation efforts involving cycles of gaining new insight and gathering experience of implemented solutions (Følstad 2008).

One of the most mentioned aspects of Living Labs is real-life setting for experimentation, testing and validation. Living Lab concept requires familiar context instead of typical sterile laboratory. The aim is to create as authentic a use situation as possible (Bergvall-Kåreborn 2009, Markopoulos et al 2000). Familiar contexts of use may be real-world contexts or simulations (Følstad 2008). The real-life testing validates the results more strongly.

The CEO of Forum Virium (Helsinki Living Lab) Jarmo E. Eskelinen emphasises that the loose concept of living labs is not supported among well-functioning living labs. Strong concept of living lab should be the purpose when starting to create and develop a living lab. The aim should be the acceptance and trust among international partners and other living labs. All mentioned four criteria must be met. The case where user is engaged into innovation process but the testing still takes place in typical testing-lab, should not be called living lab. Still, it must be mentioned that many so-called "living labs" don't meet the main characteristics. (Eskelinen 2009)

To conclude why one (small) country should support this new methodology and use Living Labs as innovation policy instrument, four main subjects can be brought out. First, raising users' awareness and willingness to contribute as co-creators leads to testing and co-creation culture for more innovative and active society. Open innovation helps to improve allocation of resources. Multi-partnering ecosystem rises the trust in society and reduces double-spending on the same resource. The real-life context should be in favour to insure that the services created, perhaps on public sector demand, rise citizens' welfare.

### **The rapid spread of living labs and European experience**

The concept of living labs was developed in the end of 1990s by W.J. Mitchell at MIT, USA. Through changes in Nokia product development processes Living Lab rapidly moved to Finland, where support and enthusiasm of Finnish Technology Fond TEKES has facilitated spread of living labs approach not only in Finland but in other Nordic countries. Due to the efforts of the European Commission the concept has found its place in the European innovation policy. (Niitamo 2009) In Europe, where social services are mostly provided by central or local governments the focus of living labs tends to be in the field of public social services. Though, the fields of possible implementation sectors are not limited.

In 2006 the European Network of Living Labs (ENoLL) was founded and by the end of 2009 already 129 European living labs had joined with this network. Several industrial ICT Living Lab initiatives are represented in Living Labs Europe (LLE). Not all working living labs can be found at ENoLL or LLE, for example Finland has

its own local network and the number of living labs in the country exceeds 57 (Eskelinen 2009). Agreeing to Almirall's study, authors consider Finland to be the most active and effective country in using living labs. Finnish expertise is broad and the fact that Finns are open to share their expertise and knowledge about living labs should not be undervalued. Still, attention must be paid to the differences, e.g. in financing of social public services. By the specific field or forms of cooperation the best practises can be looked for also elsewhere in Western Europe. Almirall (2008) study brings out as following countries or regions: Sweden, Flandes (Belgium), Finland, Catalonia and Holland. Eastern Europe is still touching the ground and making its first steps in 2009-2010.

Distinguishing pattern occurs analysing the spread of living labs between academia, public and private sector. Living labs started from academia; through global corporation it gained interest and support from public sector. Public sector has its focus more to social services and SMEs. The concept has captured the attention on all levels.

As public sector, SMEs and global corporations act on different levels and with different goals the same methods of living labs can't be applied mostly. Big companies (e.g. Nokia, 3M, and Ericsson) have created their own real-life context labs, called as beta-labs, where similar concept is applied. The difference is that they don't need public sector as mediator. Having the resources the user-involvement can be taken to the highest level. For example Ericsson is having contests where users are programming applications, not just using and testing the existing ones (Ericsson). When it comes to public sector and SMEs such a level of co-creation should not be expected. Innovation policy must consider this aspect: although users' co-creation is one main pillar of living labs, there are different levels of users' engagement, and the adequate one should be expected from different living labs.

### **Types of living labs**

A high level of heterogeneity occurs among existing Living Labs. Due to their various entities, it's not adequate to compare and evaluate all of them in the same basis and with the same indicators. Segregation and categorization is needed. Author studied information about 68 randomly chosen European living labs. Published information at ENoLL homepage about different living labs varies greatly, but abstract conclusions can be made.

Niitamo's (2009) "layers of living labs" can be used to divide living labs into four groups. Studying existing living labs author noticed two main dimensions characterizing a living lab: 1) the level of specialization and 2) the form/type/entity of living lab. Niitamo presents layers of living labs: human, usage, local and thematic level. Human level refers to neighbourhoods or self organising virtual Living Labs. Usage level includes testbeds and other trial platforms. On the local level the main actor is local innovation service provider. Thematic level is network of thematic Living Labs. These levels can be used if we have rather clear-cut living

labs, e.g. city as a living lab (Amsterdam) or it is specialized on mobile-sector but doesn't have certain region.

We noticed two main dimensions characterizing a living lab: 1) the level of specialization and 2) the entity of living lab. Based on introducing leafs, authors grouped Living Labs in these dimensions. The third dimension to add here would be the level of user engagement. Unfortunately, this information is not so easily accessible and must be studied separately. Therefore we focus on the two first ones.

In terms of specialisation, Living Labs have chosen different scope. Based on 68 randomly chosen European living labs authors were able to distinguish four different levels:

- 1) one specific focus – e.g. mobile-services
- 2) whole sector – mostly ICT
- 3) some areas, mostly not similar.
- 4) all sectors – no specialization, aim to create innovative environment.

About 30% of living labs concentrate on one specific area in ICT – for example on mobile-services, logistics, media, e-tourism or e-health. Yet 24% state their field something else, e.g. agricultural sector or automotive industry. Must be mentioned that in general ICT is the basis in every Living Labs; for many it is tool to develop other sectors, for some it is object. One-fourth of living labs operate in many sectors. And finally there are living labs aim to create general innovative environment where different services or products could be developed. About fifth of living labs have no specialization to concrete sectors.

Report “Study on the potential of the Living Labs approach“ for European Commission brings out the rationale seems as following: in order to create business value for stakeholders, Living Labs should develop a specific set of knowledge, expertise and capabilities according to the specific stage of the value chain they want to play into. The report suggests that “un-specialised” Living Labs tend to have more difficulties in being successful. (Study on... 2009)

Another important aspect to know about living lab: how it is managed, the number of partners, the type of host organisation. Most but not all of ENoLL's members are public-private-partnership coming from academia or city innovation promotion agencies. Therefore they are relatively small organisations in coordinator roles between academia, users, companies and public agencies. (Almirall 2008)

This dimension could be called the type or form of living lab. The main types of living labs in Europe are (Study on...): single sector business association, open Innovation prone enterprise, policy-driven government initiative, network-oriented university spin-off, high-tech R&D laboratory, business services provider.

Authors have found seven groups; in the bracket the per cent of all studied living labs is given:

- 1) Business associations (SMEs) (15%),

- 2) public institutions/organisations (e.g. airport, hospital) (1%),
- 3) certain regions or towns (25%),
- 4) university projects and spin-offs (24%),
- 5) consortium of universities (6%),
- 6) clusters and Techno Parks (22%),
- 7) full-scale living lab co-operation and networks (7%).

These two segregations overlap partly.

One-fourth of European living labs aim to develop certain region or town. Although the co-operation behind different regional living labs might vary, mostly they are public-private-partnerships coming from city/regional innovation promotion agencies. As this group is distinguishing, it is justified to emphasise this type of living labs with this label.

About fifth of living labs regard themselves as clusters or techno parks. It is likely to become a trend to develop existing cluster, Techno Parks or Science Park towards living lab adding the user-driven innovation aspect to current operations.

Authors find it crucial to bring out one specific group of living labs – where living labs operate on full-scale. This means that Living Lab has strong stakeholders: industry partners, scientific partners, international research partners, national and regional research promotion agencies, national/local innovation agencies, and user groups who act as co-innovators. It can be argued that the other groups might have all these different stakeholders as well and function at top level. However, there are some living labs that stick out with stronger open innovation orientation and ecosystems. These partnerships and organisations operate on larger scale than the other types of living labs.

In the following Table 1 the distribution of living labs framed by specialisation and entity of living labs are provided. It clearly mirrors the heterogeneity of living labs.

**Table 1.** Types of Living Labs (per cent of all studied Living Labs)

The entity of Living Lab	The level of specialization			
	one specific field	sector	many areas, mostly not similar	no specialization
private firms	7%	4%	1%	1%
public institutions/organisations				1%
certain regions or towns	7%	3%	7%	7%
university projects, spin-offs	3%	7%	10%	3%
consortium of universities	3%	1%		1%
clusters and techno parks	4%	7%	6%	4%
full-scale	4%		1%	1%

Source: Authors calculations.

The question about preference for living labs type rises. Would it be more useful to establish living lab that has many universities as its partners and acts on many field or support private initiatives in the specific fields like mobile-sector? Or is it more useful if the cities and towns establish local living labs with certain regional partners?

Due to the lack of single widely accepted evaluation framework and existence of only few overall empirical studies so far, it is not fair to say that only certain type of living labs should be supported by state. All depends on the context and the aim of living lab. However, the report “Study on ...” refers that business services provider profile typically does not disclose a high number of successful trials, due to obvious confidentiality reasons (Study on... 2009).

Innovation policy should be supportive regarding to all types of initiatives. It cannot be said that some type of living labs are „wrong“. It is wise to analyse every case separately: how they can prove their content, sustainability and ability to export the output. That doesn't exclude the possibility that state has its own preference and more financial support on some project or organisation, but the fact that other types of initiatives can also be successful and contribute to economy must be keep in mind.

Looking for best practises and perhaps role-models for possible establishment of similar living lab, close attention must be paid to some aspects. Variability and heterogeneity of living labs have a number of factors (Study on...):

- 1) Different interpretations of the concept
- 2) Different cultural and institutional contexts
- 3) Types of technological infrastructure available
- 4) A variety of business application domains/priorities
- 5) The nature and role of involved stakeholders

Hence, looking for best practises and role-models it must be studied closer how concrete organisation has interpreted the concept and what is the nature and role of involved stakeholders. Before establishing similar living lab cultural and institutional differences must be analysed, also if required type of technological infrastructure is available.

### **The choice of the areas for “livinglabbing”**

Choosing the areas where apply living lab concept several aspects must be considered. There are some approaches to generate ideas and decide in which sector a living lab could be established or be supported more. We bring out steps to analyse potential fields. Additionally, a study was carried out among existing living labs to identify main obstacles occurred so far to obviate them establishing a living lab in Estonia.



Analysing fields where a living lab could be established four groups of knowledge sources should be considered:

1. The public strategy and priorities for economic growth and development of certain sectors.
2. Global trends and recommendations by living lab experts and CEOs of functioning living labs.
3. Best practises from Europe.
4. Local existing co-operations/networks/product-developments that are “Living Lab-like”.

With limited resources, a country has to choose in which sector contribute more; it is easier if national strategy is stated. If the knowledge about living lab is rather small within country, it is wise to listen to international experts who have worked for living labs and have seen closer which sectors might benefit more and where it might be too complicated to implement living lab concept. Many international experts (Niitamo, Eskelinen etc.) see the future of living labs in welfare, health and sports. In the healthcare the emphasis seems to be more in the preventive work rather than in the treatment. The main areas of Living Labs potential are suggested as following: wellbeing (including eHealth), eServices in Rural Areas, ICT for Energy Efficiency, eMobility and Transportation, eParticipation and eGovernance (Study on... 2009).

Another approach could be to adapt ideas which seem to function very well. One advantage in adapting best practises is the knowledge and experience these living labs already have. The diffusion of knowledge can lead to growth of the sector/area that is not the priority of the state. Studying existing living labs and their activities is good way to generate new ideas and possible directions for local living labs. We can look the countries that are role-models for Estonia, for example Finland and Netherlands. In Netherlands the focus of living labs is on following sectors: health and well being, energy and durability, mobility and workplace, regions-cities (Amsterdam, Leidem Rotterdam etc.) (Niitamo 2009).

Authors of the paper see potential also in the existing cooperation-networks, in so-called “Living Labs-likes”, and upgrading their content towards to living labs. It is important to analyse the current situation in real life and find cooperation and innovation processes where many aspects and features of living labs already occur. The analysis should start with experts suggested areas and studying existing living labs and their activities. The reason to look for Living Lab-like” situation lies in the risk that always follows innovations, including methodological innovations.

Following selection steps must be analysed when choosing the concrete field for establishing a living labs in Estonia:

1. Global trends
2. Importance for Estonia
3. Competence and resources
4. Network of potential stakeholders
5. Potential for export, drive for selling

1. Global trends determine also the potential for export. Trade of results of innovation outcome should be one of main goals for the living lab. Therefore global trends and growing needs give evidential direction. Aging population is becoming the serious issue in industrialised countries, which brings healthcare and well-being sectors into focus. Concerning health the use of ecological food is growing trend. The development of ICT sector and people's expectation for convenience put pressure to public services to become quicker and easier to use. In above mentioned areas the feedback from the end-users seems to be useful source of innovation and living labs should be established. It could be also connected with the attempts to solve digital divide problems – living labs could help to understand barriers for elderly people in using e-solutions.

2. The importance for Estonia can be seen from different levels: importance for economy and international reputation or importance for local society. Whereas global trends must be followed, it is also important to pay attention to local needs. Living Lab is instrument to improve welfare of local citizens by providing better services and products.

3. By competence and resources we mean mainly competence and resources in ICT-sector. The specific ICT areas where Estonia has advantage should be exploited. Essential resource for living labs is end-user community. Here Estonia has advantage – Estonians are used to comfortable public services through ICT.

When it comes establishing a living lab it must be noted that innovation is output of knowledge process that requires learning. Introducing and implementing new innovation system and way of thinking takes time and learning. In general, the radical innovation means more risks whereas incremental innovation is seen as way to implement new changes step-by-step and by that reducing the risk. To gain experiences and expertise and to realise the deeper meaning of the concept, it seems reasonable to start with current potential – analysing existing networks and co-operations, bring out their weaknesses and „loose“ aspects, and developing it towards strong living labs.

4. Living lab brings together different stakeholders: business sector, academia, public sector and end-user community. Beforehand different forms of living labs were brought to show the heterogeneity of living labs. One reason of heterogeneity of living labs lies in the variability of stakeholders and host organisation. Although a living lab could combine few up to hundreds of organisations or firms, it is clear that system only can work if concrete organisation is responsible for the coordination of living lab. This is likely to be the organisation that most benefits from the outcome or is most interested that living lab is operating. We see here the producer or service provider who is directly interested in turnover and profit. In terms of public social services local government or local or national innovation agency could be that responsible host organisation.

5. The success of Living Lab can be determined by how many new products and services are created and successful in the market. The effort put in innovation

process and living lab system must result with innovation. For Estonia, or any other small country, it is rather crucial that created products and services would be internationally tradable.

### **Critical issues in the process of implementing living labs**

Authors of the paper carried out short study to identify main obstacles when establishing and operating a living lab. Structured written interviews were carried out among existing living labs, members of ENoLL.

Following obstacles were brought out (look Table 2 as well):

- Overall confusion what is essence of the Living Lab as a scientific methodology. Different approaches to concept and therefore different expectations.
- How to find long-term funding, i.e. a stable business model.
- How to motivate users.
- The feedback and contribution of end-users is not taken into account by the companies.
- How to keep the system together - having user community on one side and having real commitments from partners working in the Living lab on the other.

In table 2 we bring out the possible action to obviate these problems.

**Table 2.** Obstacles in the process of implementing living labs and possible actions to prevent them

<b>Obstacles</b>	<b>Examples of actions to prevent these problems</b>
Confusion with the concept	Extensive and intensive introduction of the concept and debates over the potential fields and establishment.
Long-term funding	Developing business model suitable for living lab.
Users' motivation	Engage users that are already motivated, establish living lab in a field where active user-community exists.
Feedback and users' contribution is not used	Involve producers who want to benefit from living lab in that sense.
Management of the system (collaboration)	Determine the responsible host organisation, transfer knowledge from other living labs.

We can conclude that for successfully functioning living lab there must be:

- 1) interest from stakeholders and willingness to contribute;
- 2) feedback system;
- 3) ability to change products and services.

Niitamo (2009) and Eskelinen (2009) bring out following critical issues: public procurement, the size of market, IPR issues, financing and mis-use of the concept. We explain these issues briefly.

- Public procurement. The problem of public procurement occurs in most of European countries, as well in Estonia – public procurement sets limits for innovations in public services. Two solutions have been brought out: 1) clearly state what needs to be done and in which order; 2) to figure some ceiling of the budget, which is allocated to the creation of innovative products. Firms might need extra financing to participate in the public procurement, this extra financing needs to be created in Europe. (Niitamo 2009)
- The size of markets. Living Labs includes open innovation and aim of living lab is to export created products and services. Despite of open-market in EU, hidden protection of local ICT sector can occur. Therefore the market can be rather small. This is the challenge for the whole Europe – to find mass-market right away, e.g. Brazil or China, to scale-up and earn back the investments. EU member states still find a way to say “no” and put-off other countries’ developments, to create more work for local companies and ICT sector. Nordic-countries are more liberal in this term. (Niitamo 2009)
- IPR issues. The study on the potential of the Living Labs approach (2009) finds that the management of IPR issues is still in an experimentation phase. The study shows that only handful of living labs offer a wide range IPR related services and most define their IPR policies on a case-by-case basis. It is key-factor to raise awareness of IPR inside Living Las, among researchers and small entrepreneurs who do not have knowledge about legal aspects concerning innovation. (Study on... 2009)
- Financing. The issue of financing lies in question: who should pay for the innovation, for example in health-care? Although most European countries have innovation-agencies or technology funds, they don’t have the funds and responsibility to develop healthcare in the country. As Eskelinen refers in Finland TEKES is not the one with the budget, the money comes from social/health ministry. Here again the issue of public procurement becomes obstacle for new creation of innovative services and products.
- The lack of researches and misuse of conception. The main threats concerning the rapid spread of living labs, is the possibility that created living labs are biased. The term or label “living lab” is rather popular in Europe, but the misuse and overuse can result in disappointment in the concept. As mentioned earlier, practitioners don’t support the loose concept with missing parts, as this rather won’t result in successful innovation.

## **Conclusion and recommendations for Estonia**

So far Estonia has been rather passive and the enthusiasts who have tried to develop and implement living lab concept here have faced negative attitude from public sector. There are many different ways and directions for implementation of living labs. These different types and directions and evaluation of living labs needs further research and studies. Based on the previous analyses about the most promising areas

for living labs and identification of possible obstacles following general recommendation could be presented. The first recommendation for innovation policy builders is to use living labs as demand or user driven innovation policy instrument. Report made for European Commission states that user-driven open innovation should be acknowledged as a fundamental component of the EU and Member State /Regional R&D and innovation policies (Study on... 2009). As living labs have already spread quickly over Europe, Estonia should at least try to speak the same language in innovations with Europe.

Estonia has advantages as well weaknesses to establish living labs. Estonia has advantage in creating, improving and testing ICT services. Estonians are used to use different e- and m-services; they are conscious of those solutions and represent therefore rather demanding group of end-users. The use of living labs as the instruments, which provides access to users and their motivation may give huge and needed advantage. Smallness of Estonia and hence the flexibility is also mentioned (Niitamo 2009) meaning e.g. that new e-services could be applied quicker in wider scale. The smallness and possibility to attract almost whole population to testing, is the main advantage. This advantage, yet one pillar of living lab, should be exploited. It means that the whole country could be used as the test-bed for several e-services (e-voting, e-tax system, e-prescriptions in drug-stores etc.

One of the weaknesses is the overall passivity about new concept so far. It has been brought out that so far public sector has had strong confrontation about creating living lab in Estonia. (Katri-Liis Lepik 2009) The similar situation has been in most of Eastern Europe. But Niitamo suggests that “livinglabbing” could take place even without labelling and public support. Additionally there is certain confusion about the concept itself among existing living labs and over-realistic expectations and interpretations could lead to the disappointment about the concept. There is a need for wider introduction for living labs and further debate about best possible implementation. Innovation awareness is the starting point.

Eskelinen (2009) sees Estonia as very quickly developing country that takes over and adapts new ways providing services. Democracy and flat-society are the preconditions for user-driven services and service-driven societies. Eskelinen suggests that Estonia should look Finland, but with notion how cities and towns have the responsibility for most of social services. (Eskelinen 2009) However, we must remember that every country has added living labs to its unique national innovation system. The differences in NISs must be analysed before copying any successful living lab. As Estonia lacks of knowledge about living labs and establishing one, international best practises and experts should be used.

From global trends we see three areas to which Estonia should pay closer attention: healthcare and well-being, ecological food, public services through ICT. All these areas becoming more important globally, therefore having more export-potential, as well are relevant also on the local level. Estonia current competence appears to be best in public services- e.g. E-Tax Board, e-banking, m-parking, m-ticket, e-receipt, e-school. There are already many e-services that show our strong competence in this

field. Concerning ecological food, Estonia has a major resource – plenty of arable land, which is saved from fertilisers last 20 years, but lack of knowledge is problem so far. This is another area where living lab is a potential instrument for development and source for innovation. Healthcare and well-being is wide sector, we must find specific niche to exploit best our competence and resources as well the needs on international market.

Estonian potential and competence in ICT sector shows the direction for the future. Estonian Development Fond's (EDF) report EST\_IT@2018 has stated the strategy in ICT sector until year 2018. According to EDF report EST\_IT@2018 the sectors where Estonia must focus in ICT are following: education, healthcare, industry, energy/energetic, finance services and ICT security. Where the first four are important societal and economical challenges and in two latter ones Estonia has higher level of competence. In terms of financial services the ICT competence in Estonia is high, higher than in other sectors. (Tiits *et al.* 2009) The same report states the plan to implement living lab by spring 2010 in Tallinn, focusing and specialising on financial services.

We can find many Nordic Living Labs whose activity could be also applied in Estonia, e.g. in mobile-service, tracking people' moving / positioning. As well we can find many regions or towns that act as living labs. This practise can also be applied to Estonia, e.g. in Tartu or Tallinn. From the previous practises one interesting idea can be brought out – airport as the living lab. Lennart Meri Tallinn Airport is small but one of the most innovative airports in Europe/world, but creating a living lab there is again rather radical yet doable.

Looking for “Living Lab-like” organisations in Estonia, mobile-sector is frontrunner. It has been claimed (according to Helsinki Mobile Monday) that Estonia has already become mobile development lab in Europe. Whereas network of six partners work under mKlaster, there are crucial problems with the export of innovations when it comes to open innovation. The paradox in mKlaster lies in the fact that in spite of many world leading m-services and m-solutions are created – the export of those services to other markets is very limited (Tõnisson 2009). Mobile-services in ICT are one of potential sectors in Estonia. Still it has many obstacles, as many countries try to protect and develop their own mobile-sector; from the positive side there are many examples to learn from in term of living labs.

Aiming the establishment of living labs to be most efficacious in long-run, the focus should be on societal and economical challenges, both on local as well on European future problems. On the other hand, in order to reach higher export propensity of innovations from living labs Estonia should pay attention to the areas, where it has already shown its competence. As an example the ICT competence in financial services is high in Estonia and living labs in this field could help to increase international tradability of those services.

The precondition for the wider use of living labs is the promotion of cooperation between firms, public sector and consumers. Those measures should be more visible

among the list of innovation policy tools used by Enterprise Estonia, the major promotion organisation in Estonia. In Estonia the attention should be paid to national strategy and priorities, the living lab will be created to „green-field“ from the scratch - in this case more research needs to be done to justify the investments and effort and the use of living lab concept. It must be said that living lab is still immature-maturing concept that has not been studied thoroughly yet. However, to speak the same language with Europe in innovation policy, new innovation strategy must be supported along supporting the creation and diffusion on living labs.

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# TAX MORALE, INFLUENCING FACTORS, EVALUATION OPPORTUNITIES AND PROBLEMS: THE CASE OF ESTONIA

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## Abstract

The individual willingness of a person to pay taxes is the result of the complex behavior of the person affected by various factors. The research object of this article is the individual willingness of the members of the Estonian society to pay taxes and the possible influence factors for this willingness. The objective of the author in this article is to evaluate the tax related behavior of individuals in comparison to tax debts and personal demographic and psychographic based indicators, to compare the results with the results of the tests that had previously been carried out and to try to identify the possible role of the society upon formation and education of the tax related behavior of an individual. The statistical indicators – tax debts of individual persons, the gender and age related structure of the persons owing taxes in the population – serving as the basis of this article confirm the earlier results of the empirical research supported by values, based on which the willingness level of paying taxes is connected to the person-based independent indicators as gender and age.

**Keywords:** tax compliance, tax morale, arrears, tax behavior, voluntary payment, payment compliance, tax evasion, tax avoidance, tax authority, taxpayer

**JEL Classification:** A14, H26

## Introduction

When the processes and changes occurring in the economy cannot be explained on a level necessary, using standard economic theory of the different processes, one has to turn to other branches of science, including social psychology. Such a tendency is gaining momentum also upon identification of the reasons for payment of taxes, failure of payment thereof, avoidance of tax liabilities and the tax evasion of tax obligations.

The issues of tax compliance and of the fluctuation thereof are as old as the collection of taxes themselves and will be a target for research as long as taxes exist. Avoidance of paying taxes is a growing problem in most countries. If the social scientists say that tax evasion is a social problem, then the economists mostly tend to be of the opinion that we are dealing here with just a technical question (Scmölders 2006). If however we set aside the economic benefit that can be acquired with avoidance of paying taxes, then what influences an individual to pay their taxes on time and in the obligated amount?

Tax compliance has become an area of research of economic psychology. It has, above all, been caused by the social dilemma prevalent in a society in respect to the question of whether to pay taxes or not, and for various reasons of the selfish activities of individuals which overbear the social interests. Regardless of the fact that paying taxes is the main obligation of a person towards his or her state, tax compliance depends on a number of factors – economic, political, social as well as psychological.

In the current situation of economic recession in Estonia the tax debt has grown by 42%<sup>1</sup> in the course of 2009, amounting to six billion Estonian kroons, the aspects, which affect people's tax behavior, are of a major importance. Making up the shortcomings of tax revenue collection by raising taxes or by intensifying coercive methods and not by dealing with social factors, will in the end not increase the tax revenue, but the reluctance to pay taxes. The tax behavior of individuals is a culture that changes very slowly, and making the rules more efficient will only bring about short-term success. Upon formation of a culture, different influence factors, including the young age of the country and its historical background need to be taken into account.

The research object of this article is the individual willingness of the members of the Estonian society to pay taxes and the possible influence factors for this willingness. The objective of the author in this article is to evaluate the tax related behavior of individuals in comparison to tax debts and personal demographic and psychographic based indicators, to compare the results with the results of the tests that had previously been carried out and to try to identify the possible role of the society upon formation and education of the tax related behavior of an individual.

The statistical indicators related to tax debts provided in the article are based on the numeric data of the Estonian register of taxable persons.

The first Section of this article provides a brief overview of theoretical approach of tax morale as one factor influencing tax compliance. The second Section introduces the methodological opportunities upon tax compliance evaluation. The third Section contains the results of the empiric research on single person's tax behavior concerning tax debts and comparison of personal indicators. The article shall conclude with the summary and the discussion of the main results.

## **1. The theoretical background of tax morale as the influence factor of tax compliance**

The attitude of a person towards paying taxes, his or her individual understandings and norms and his or her motivation can be expressed by the term "tax morale". What in the specialty literature is meant under tax morale is the motivation of a person to pay taxes really characteristic to the person, which is like an individual willingness or a moral obligation or a belief in a social contribution as a result of

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<sup>1</sup> Estonian Tax and Customs Board's (ETCB) statistics, the authors calculations

paying the taxes. Tax morale is also interpreted as an understanding of the principles and the values that a person has the liability to pay taxes.

Tax morale is one of the influencing factors of tax compliance, which has a significant impact on payment of taxes as well as on avoidance thereof. Tax compliance is probably the most neutral term for describing the willingness of the taxpayer to pay taxes (Kirchler 2007). Essentially it means that the person declares voluntarily and pays in a timely manner all of his or her tax liabilities and along with all this, all of his or her accounting for taxation purposes are in compliance with the valid norms pursuant to the tax law (OECD 2008).

Based on the conceptual interpretation of the term, tax compliance is divided conditionally into two large categories - administrative and technical (OECD 1999). By **administrative tax compliance**, we understand adhering to the rules of procedure and to terms, i.d. payment of taxation obligation on time. Thus, administrative tax compliance entails formal tax law, which includes both the monetary and non-monetary liabilities of the taxable person as the weaker side of the legal tax relationship (obligation of registration, obligation of keeping records, obligation of contribution, obligation of declaration, obligation of keeping accounts). **Technical tax compliance** manifests itself in adhering to the tax law and in correct accounting or in adhering to material tax law. Until now, there have been attempts to assess tax compliance above all through technical tax compliance and the economic influence thereof. Less attention has been paid to administrative tax compliance and to the socio-psychological influence factors thereof.

In specialty related literature, tax compliance, has among other things, an individual ingenuity to pay the minimum amount of taxes. The ways of refraining from paying taxes are not only illegal (tax evasion); it is possible to avoid paying taxes also in a legal way (tax avoidance), using for that purpose the existing tax loopholes or by redirecting revenues (tax flight) (Kirchler, Maciejovsky 2001).

Mostly, tax noncompliance is associated with illegal means of avoiding taxes or with tax evasion. However, on the basis of the content of the term of tax compliance, the non-compliant person is a person who fails to fill at least one principal obligation of a taxpayer in the tax law relationship, may it be failure to register a business, failure to timely submit the declaration, presenting incorrect data or failure to pay taxes in a timely manner (OECD 2009).

Tax compliance can be divided into two parts also on the basis of the way of achieving thereof: voluntary compliance and enforcement compliance (OECD 2008). Measuring solely the enforcement compliance does not provide a clear overview of the level of tax compliance. The rates of auditing and fines are usually so low, that based on rational speculation, most individuals could avoid paying taxes, as they are very unlikely to be checked or penalized. But in spite of this, most people pay their taxes voluntarily. So, what does actually influence the willingness of an individual to pay taxes?

The reasons for peoples tax related behavior have been investigated from different aspects; from the political aspect, paying attention to the complexity of the tax law; from the economic aspect, paying attention to rational decision making, to the possibility of being checked and penalized, and to the rate of the fine.

The basis for good tax compliance is above all a good tax system, a clear legal framework and among other things, a positive relationship between the taxpayer and the tax authority. However, inspiring the taxpayer is considered essential. Besides economic and political considerations, tax compliance is also connected with socio-psychological factors. E.g. the social attitudes of the society and the individual moral norms of the person (OECD 2004).

The importance of the socio-psychological factors of tax compliance as a formative factor of tax compliance next to the economic and political influence factors should not be underestimated. Professor of economic psychology, Erich Kirchler, has pointed out that only in 10% of the cases of publications concerning tax compliance, the term “psychology” or “psychological” is used (Kirchler 2006). Kirchler emphasizes the psychological aspects of tax related behavior of a taxpayer, and upon classification of the influence factors of tax compliance, considers the socio-psychological influence factors as a whole equal to the economical and political influence factors (Kirchler 2007).

The incentive for investigation of the tax related behavior of the taxpayers in the field of economic psychology for the German economist Günter Schmolders was a research into the levying of taxes on alcoholic beverages completed in the year 1932. A small part of this research also touched upon willingness to pay taxes and the tax burden (Schmolders 2006). Tax morale as a term was however brought into the professional literature in the 1960’s, when Schmolders was trying to link the economy and socio-psychology, at the same time emphasizing that the economy should not be analyzed solely from the classical theoretical viewpoints (Schmolders 2007). Upon the first evaluation of tax morale as the expression of tax compliance, subjective tax burden was used as an indicator in the research conducted at the University of Cologne and it was found out that the level of willingness to pay taxes of entrepreneurs is lower than that of employees. Entrepreneurs justified their negative attitude for paying taxes above all because of the high tax rate (Schmolders 1959; Kirchler 2007). In the next similar research, the tax system was used as an indicator, where the differences of the tax systems of the European states and the level of tax morale among the taxpayers of each state were compared (Strümpel 1969; Torgler 2007). The research showed that the way the government treats a taxpayer has an effect on the willingness of the taxpayer to pay taxes – an aggressive tax policy has a negative influence on tax morale and the opposite policy helps to raise the tax morale.

Regardless of the well-established historical background of the term “tax morale”, even as late as at the end of the previous century, in the literature related to tax compliance, tax morale is treated in research papers as a totally underdeveloped field as an influence factor of tax compliance (Andreoni, Erard, Feinstein 1998). Also, in

very recent publications, the lack of an extensive treatment of tax morale in the contemporary professional literature and the regarding of tax morale as a “black box” has been brought up (Frey, Feld 2002).

In order to fill the above mentioned gap and to provide a more versatile explanation of tax related behavior of a taxable person, various empirical researches and analyses have been conducted, evaluating the attitude of taxpayers towards taxation the imposition of taxes (Vogel 1974), tax psychology as a whole (Lewis 1982), the influence of social and cultural norms (Alm, Torgler 2006), the religion, (Torgler 2006), the society (Alm, Martinez-Vasques 2005) and other factors of tax morale on the basis of the data of World Values Survey.

Mostly, tax morale is regarded as one issue in the process of rational decision-making, and its connection with socio-psychological indicators is ignored. But the issue of tax morale is larger than the question of why people are not cheating even if they could? (Torgler 2007) The individual willingness of a person to pay taxes is affected by economic, political and as well as by social factors and the joint concurring effect thereof. The research results have shown that the tax related behavior of an individual is a complex issue and is not based only on the economic behavior of the said individual (Frey, Torgler 2007), therefore it is essential to pay attention to political and society based influence factors.

Pursuant to the heterogeneousness of the research, of the multiplicity of influential factors and the abundant choice of interpretation thereof, there is no clear and disambiguous answer to the question – what makes a taxpayer pay their taxes? It is basically impossible to make a list of the influential factors and to attribute any certain features to them, as one factor may be closely related to another one can be understandable as an economic, a political as well as a social factor.

When generalizing the results of the research conducted in different countries in the course of the latest decades, the following influential factors of individual tax related behavior could be brought forth:

The **economic influence factors** of tax related behavior of an individual are above all connected with a rational choice of the individual. The person performs an evaluation regarding whether the benefits received from avoiding paying the taxes exceeds the gravity of the penalty received for tax evasion. What are the possibilities of avoiding payment of taxes and what is the likelihood of being checked? Therefore, the rational choices of a person are above all influenced by economic benefits, imposition of sanctions and the severity thereof (Kirchler 2007).

The complexity of the tax system and the comprehended fairness thereof are the **political influence factors** having an effect on the willingness to paying taxes. The easier the tax system is, the less there are possibilities for tax evasion and the less redistribution of revenues are performed. The fairness of the tax system reflects itself above all in the principles of redistribution of income. Taxation fulfills its goal – to decrease inequality, to finance the state regulation and to protect the weakest

members of the society – only in one way – by fair redistribution of tax revenues (Leroy 2009). In addition, it is essential for the individual to be aware of what he or she is paying for, i.e. tax payment and the public benefits have to be interrelated. Due to this, it is important, in a consistent manner and in a comprehensive way, to inform the public of the application of the tax revenue. Treatment of a taxpayer with an aggressive tax policy upon the collection of tax revenues by the state rather decreases than increases the level of tax morale. On the other hand, an opposite policy and a respectful attitude help to raise the tax morale.

Pursuant to this, in today's complicated situation of economic recession, continuous attention should be paid to the dissemination of policy related information. Distribution of misleading information through rhetorical articles in the media, using the words “crisis”, “bankrupt”, “budget cut”, “running out of money” etc. create the wrong understanding in people. A crisis is not a causative precondition, it is rather a process. But negative information what is occurring in political life, search for guilty party cause political disappointment and influence the tax related behavior in a negative way. Political stability, including the efficiency of the activity of the government, quality assurance, clarity, control over rules and corruption are important shapers of tax related behavior. Based on that, politics has an important role as the shaper of the tax related behavior of individuals specifically in crisis situations. As a rule, an individual is rational in his or her decisions, and she or he makes several of his or her decisions based on the information received from the media. Therefore, fictional publications with a negative tonality should rather be avoided during the period of a crisis and the media should more reflect the political debates and discussions that would reveal the political choices and would not make it possible to make decisions about politics and about the state on the basis of rhetorical articles.

The political factors of influence like direct democracy, involvement of citizens in the process of decision making about economic politics, the tax policy and the consequent relation between the state and the taxpayer, trust in for the state as an institution and a well functioning public administration is the basis for many different decisions of an individual (Torgler 2007). Therefore, transparency of the usage of taxpayer's money, trust for the government (Bergman 2002; Torgler 2003), and fairness of the tax system (Taylor 2003) are the main political factors, which influence the willingness of a taxpayer to pay taxes.

Besides economic and political influence factors, the general mores of the society and the individual attitudes of the person or **socio-psychological influence factors** are essential as the shapers of tax related behavior. A human being in his or her nature is a social creature and upon the shaping of his or her understandings the general attitude of the society or the behavior of other persons in the society is important. The social norms of the society and the atmosphere of the positive social capital influence the tax related behavior and the general ideas of the tax compliant behavior of a person. If the message is spreading in the society that tax evasion is a regular activity, i.e. a rule rather than an exception, the individual willingness to pay

taxes decreases. If the general tendency of the society is to pay taxes honestly, the tax morale will increase.

Besides social interaction, attention should be paid to the individual and cultural characteristics of the person and the effect thereof to tax related behavior. These influential factors are, besides the amount of the income for instance, the level of education, gender, nationality, age, religion, etc.

The individual willingness of a person to pay taxes is the result of the complex behavior of the person affected by various factors. Based on the above, pursuant to the multiplicity of the influential factors of tax morale, the scene of interpretation of the economic behavior of the taxpayer is much diversified, and there are no disambiguous answers to the questions. The reason for this is, among other things, the lack of a clear definition of tax morale, a scanty usage of the term and the heterogeneity of the empirical research.

## **2. The methodological possibilities of evaluation of tax compliance**

In most cases, tax compliance is researched with the help of economic models and economic interpretations. Tax compliance in social sciences, where the tax related behavior of a taxpayer is caused by psychological factors, like has been said before; it is quite a recent phenomenon (Kirchler 2007).

OECD provides several different methods for evaluating tax compliance, starting from auditing, the usage of referenced data, changing of declarations and the researches based on monitoring, analysis, laboratory experiments etc (OECD 2009). But it has not been possible to apply a single universal method that would take into account all the needs and perspectives. Different indicators are interconnected, coming from different methodologies and constituting a single dimension of assessing tax compliance.

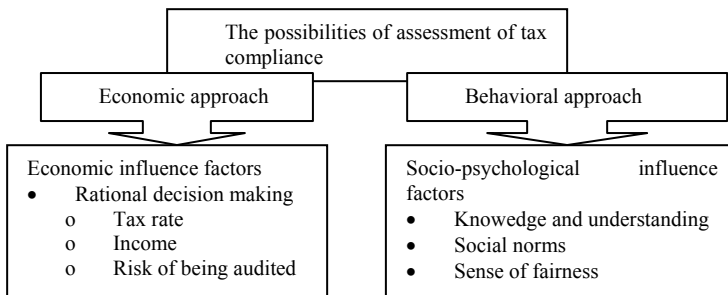
The above methods of determining the level of tax compliance are generally applicable in the case of technical tax compliance, the measuring of which begins with determination the correct taxable amount and the amount of which may vary depending on the application and the knowledge of the taxpayer and on the ambiguity of the tax law. The ambiguity of the tax law is defined mainly by three different forms: different interpretation of the laws, variation of application of the law on a specific practical situation and evaluation of the adequacy of the evidence.

Many tax administrations have, besides their organizational goals, an important goal to improve tax compliancy (OECD 2009). But it is very difficult to evaluate one's contribution upon achievement of increase of tax compliance, as until now, there have been no efficient means of measuring with which it would be possible to measure and evaluate the change of tax compliance in the course of time. Solely the increase of tax revenue is not the synonym of improved tax compliance.

Pursuant to the complexity of evaluation of the social psychological influence factors and the ambiguity of the tax law, the emphasis of the professional literature lies on the area of auditing and thereby on the technical tax compliance, where the tax administrator has primarily targeted his or her activity towards checking the correctness of tax accounting, in order to thereby influence the tax related behavior of the taxpayers and to guarantee the necessary percentage of tax revenues in the state budget.

Less is being spoken of the administrative tax compliance or of the procedural rules, of keeping the deadlines and of duly paid taxes. In other words, the basis for evaluation of tax compliance is timely fulfillment of both non-monetary and monetary liabilities. The complexity of measuring the administrative tax compliance brings about the need for scientific research performed outside of the tax authorities. For the purpose of evaluation of the person’s tax compliance, multidimensional research is necessary, in order, among other things; to be able to assess the role of socio-psychological influence factors in the tax related behavior of a taxpayer. The efficiency of such applied research depends above all on the cooperation between scientists, tax authorities and the relevant international organizations.

Tax compliance can mainly be assessed from two aspects – evaluating the behavior of individuals on the basis of an economic analysis or tax related behavior based on psychological and social reasons (Figure 1). Tax compliance is the result of the social behavior of persons and the World Values Survey and the experiments of social sciences indicate that although tax morale varies from country to country, it is still one of the essential influence factors of tax compliance (Torgler, Alm, Frey etc). Regardless of the fact that upon interpretation of tax compliance, the economic and the behavioral approach are often competing, the administrative tax compliance that is above all influenced by socio-psychological factors cannot be left unnoticed.



**Figure 1.** The main possibilities for assessing tax compliance. (Compiled by the author)

Tax compliance is defined mainly as the willingness of the taxpayer to pay taxes, i.e. to comply with the tax liability, and the non-tax compliant behavior is defined as tax evasion with legal and illegal means. But the question of tax morale is broader than



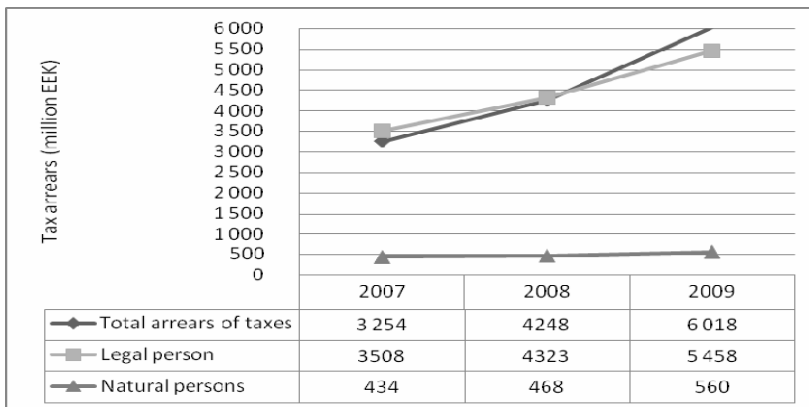
why people do not cheat even if they could do so. As the author of this article, I deem it necessary to complement the discussion with the term of failure to pay taxes, i.e. the tax debt as an indicator of payment compliance. A tax debt is created when a tax liability has been calculated, declared or determined and the taxpayer has failed to fulfill his or her obligation by the deadline. Thus, a tax debtor is a person who has failed to fulfill his or her payment obligation after the due date of the payment.

In the framework of interoperability of economic recession and the deficient fulfillment of the state budget, it is feasible to analyze payment compliance, including the dynamics of tax debtors, on the basis of personal based factors that form the basis for development of moral values and to interpret the possible role of the society upon the shaping of tax related behavior.

### **3. The willingness of the taxpayer to pay taxes**

Tax morale is a socio-psychological influence factor of tax compliance, which is connected to the internal motivation of the person to pay taxes. Tax compliance is the individual willingness of a person to pay taxes that is influenced by the person's idea of the principles and the values of morale, of the fairness of the tax, of his or her trust in for the country, of the awareness of how the tax revenues are used, of the tax system of the country, of the tax policy, of the administrative policy, of the individual and the cultural characteristics of the person. Beside all the above influence factors, one should not leave unnoticed the biologically inherited and the socially acquired norms that form the basis for shaping of moral values. The socially acquired norms are first of all characterized by the wish to be and to operate in a similar way, the norms about what is right spreading in the society etc. Tax morale includes, in addition to the individual willingness to pay taxes, also the belief in social contribution as a result of payment of the taxes. Thus, the society has an important role in shaping tax related behavior of an individual. Individuals agree to payment of the taxes and they pay the taxes as long as they believe that tax compliance is a social norm (Alm, McClelland, Schulze 1999). If avoiding payment of taxes, tax evasion and untimely payment of taxes is accepted in the society, it affects the tax related behavior of the taxpayers in a negative direction. The higher the tax moral, the better are the indicators of tax compliance (Torgler 2007).

The main symptoms of economic recession – decrease of the internal consumption, slowing of the growth of export and of the service sector, increasing inflation and the increase of the tax burden – have significantly affected the willingness of payment of the taxes by the taxpayers, as well as the ability to pay the taxes in the obligated amount. While the tax debts decreased in the years of the so-called economic growth, 2005 through 2006, since the year 2007, tax debts have been rapidly growing in Estonia (Figure 2).



**Figure 2.** The dynamics of tax debts 2007-2009. (Author’s calculations based on the data of ETCB)

The unfulfilled collectible tax liabilities as regards the state taxes as of the beginning of the year 2010 in Estonia – ca 124 482 persons, out of who, 102 166 are individual persons. From the total population<sup>2</sup>, individual tax debtors make ca 8%. The tax debts of individuals in the course of the year 2009, in comparison with the year 2008, have risen by 20% or from 469 million kroons to 560 million kroons.

The rapid growth of tax debts has undoubtedly been brought about by the decline of economic growth, however, at the same time one should not underestimate the attitudes of the society as a shaper of social norms. The continuous coverage of negative information in the media and permanent calls for frugal lifestyle has an influence on the daily decisions made by most of the members of the society. However, saving on account of the state revenues should not be acceptable from the point view of the existence of the country, of its continuity and sustainability.

As individual persons actually shape the general tax behavior, both as individuals and as representatives of a legal person, then in the present article, the focus lies from now only on the tax related behavior of an individual and the statistical numerical indicators about the tax related behavior of the legal person tax debtors have only an illustrative value.

### 3.1. An individual person as a shaper of tax related behavior

The tax behavior of individual persons regarding failure to fulfill their tax liabilities provides evidence of the attitudes towards paying taxes and of the general level of tax morale in the society. In spite of the fact that the Estonian tax burden as regards the social security taxes and direct taxes is lower than the average in comparison with the other EU member states, ca 8-10% of the total population of Estonia still

<sup>2</sup> Last published survey period, 01.01.2010.

owes taxes, regardless of the economic situation in the country. As a comparison, out of the Nordic countries we could bring forward Sweden that has a high tax culture, where only 1.5% of the total population owes taxes.

Approximately 102 000 individual persons have unfulfilled tax obligations towards the state of Estonia. Out of them, ca 87% or 88485 persons have a tax debt of fewer than 5000 kroons, i.e. a so-called small tax debt. It has to be pointed out, though, that approximately 21500 people owing taxes actually only owe up to 50 kroons (Table 1).

**Table 1.** Division of people owing taxes based on the amount of the owed debt (02.01.2010)

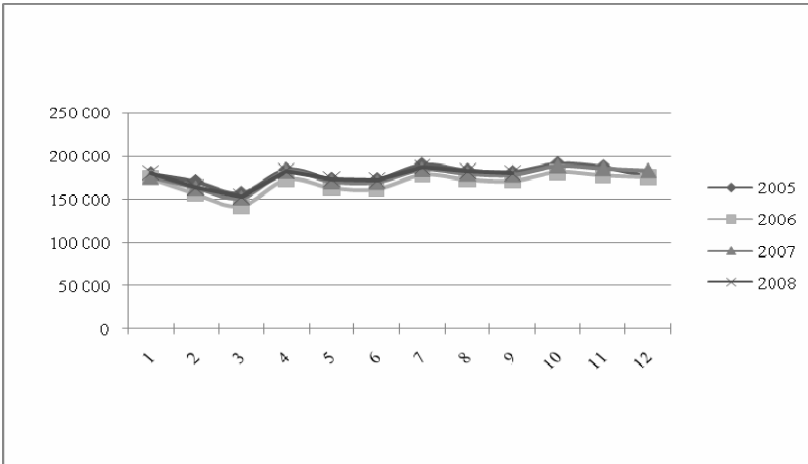
The amount of the debt	The number of people owing taxes	The amount owed (Thousand kroons)
0 - 50	21 684	590
51 - 1 000	52 327	15 298
1 001 - 5 000	14 474	34 074
5 001 - 10 000	4 465	32 179
10 001 - 25 000	5 202	83 860
25 001 - 50 000	2 678	92 727
50 001 - 100 000	760	50 758
100 001 - 500 000	465	95 642
500 000 - 1 000 000	70	49 516
1 000 000 - 5 000 000	39	78 409
x > 5 000 000	2	27 321
<b>Total</b>	<b>102 166</b>	<b>560 374</b>

Source: ETCB.

The multiplicity of such debts and the amount of the debt does not reflect the ability of the taxpayer to fulfill his or her tax liability, but, based on the professional experience of the author and on the feedback of the taxpayers, it often reflects the person's unawareness of his or her tax liability, conscious failure to pay, and also convenience, hoping to clear their tax debt with the amount to be returned by the tax administrator on the basis of their income declaration.

Above all, the dynamics of a person owing taxes is influenced by the tax related behavior of individual persons (ca 83% of the total number of the people paying taxes is made up of individual persons). The time series provided in Figure 3 confirms the influence of a individual person upon changing the amount of persons owing taxes along the arrival of different due dates of payments of individual persons. The number of persons owing taxes is annually the smallest by the end of the first quarter, where the accounts of individuals are settled with the excess payment emerged on the basis of their income tax return, and it is the biggest by the beginning of the third quarter, where the due dates of both the land tax and the individual's income tax have arrived. Above all, the amount of the individuals owing

taxes decreases through the tax administrator's initiative upon settlement of accounts and compulsory collection of the tax arrears.



**Figure 3.** The dynamic of the persons owing taxes along the years. (ETCB, compiled by author)

In spite of the complicated economic situation and the fast growing unemployment, the so-called small tax debts of a person in temporary economic difficulties can be liquidated in cooperation with the tax administrator, but at the same time, the person has to feel the initiative and the internal motivation to get his or her tax arrears paid. The tax authority has by the current moment created for an individual taxpayer a favorable opportunity to pay their small tax debt in parts, i.e. by timing the payment of their tax arrear according to a simplified procedure. Timing, according to a simplified procedure, means for an individual a minimum time spent in a service point, service independent of their place of residence, a more favorable interest rate and the opportunity to live without the fear of application of coercive measures. As of the beginning of the year 2010, only 2.9% individuals or 3002 persons have timed the payment of their tax arrear. 3002 persons, in turn, are not fulfilling correctly the agreement to pay their tax arrears in part on the basis of an agreed schedule concluded with the tax authority.

Timing of paying of the tax arrear in case of a temporary solvency problem helps the taxpayer to be relieved of their arrears by paying it off in parts, taking into account the real ability of the taxpayer to fulfill the responsibility taken by them and at the same time to be protected from the application of coercive measures by the tax authority. But only the initiative and the will of the taxpayer to fulfill their obligations towards the state help to be relieved from tax debts and to avoid the procedures of compulsory collection conducted by the tax authority. The statistical abundance of the persons owing small amounts of taxes, the relative low interest of

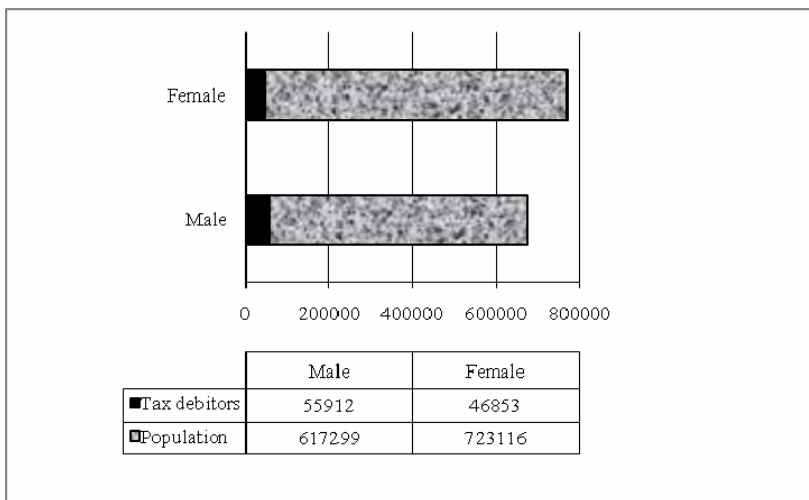
individuals towards liquidating their tax arrears can be interpreted as a negligence of the taxpayers towards the obligation of paying the taxes and thereby also as a low individual

### **3.1.1. Person based indicators as the factors affecting the tax morale**

Socio-demographic parameters like gender or age are important factors shaping the tax related behavior of a taxpayer (Torgler 2007). According to numerous empirical researches, advanced age and tax compliance are in correlation, i.e. the more advanced age of a taxpayer is connected to a bigger willingness to pay taxes. Social psychologists have pointed out that the higher level of willingness to pay taxes of older people in comparison with younger individuals is connected with the decline of the social activity, with a better material security and with the fear of the sanctions taken for failure to pay taxes.

A similar influence on tax compliance is also observed depending on the gender of the taxpayer. The higher level of tax compliance of women is related mainly to their lower willingness for taking risks, in comparison to men (Tittle 1980; Torgler 2007). Socio-psychologists claim that the higher tax morale of women is related to the traditional role of the woman both in the family and in the society as a whole. However, we should not leave unnoticed the change in the position of the woman in the contemporary equal society, where the independence of women can bring along a lower level of willingness to pay taxes. At the same time there is the possibility that in spite of the above statement, women will remain less prone to taking risks than men. Pursuant to the research based on the data of World Values Survey, women's willingness to pay taxes is significantly higher in comparison with men, and no difference has been observed when comparing the developed and the developing countries. This in turn excludes the possibility that the role of the women in society has an affect on payment of taxes (Tittle 1980; Torgler 2007).

Based on the personalized numerical data in the possession of the author of this article, the percentage of the males out of the general number of people owing taxes is 55, whereas the percentage of the males in the Estonian population is 46. Regardless of the smaller percentage of males in the population, the number of male persons owing taxes exceeds that of the women by 10%. Thus, the above research results regarding the connection between gender and willingness to pay taxes, according to which, the relevant willingness is lower are also confirmed by the statistical indicators of tax arrears and the data of the structure of the general population. Based on the above, the statistical indicators of the persons owing taxes and the gender structure of the population in comparison are in an opposite relationship (Figure 4).



**Figure 4.** Gender division of persons and the amount of persons owing taxes in the population. (Author's calculations based on the data of Statistics Estonia and data of ETCB)

Comparing the indicators provided with the indicators of the same period of the last year, the percentage of men, out of the number of people owing taxes, has remained the same, making up 54% of the total number of the persons owing taxes. At the same time, the numerical values characterizing the population have also remained the same. Regardless of the changes in the economic situation and in the number of people owing taxes, the gender division of the persons owing taxes has remained constant. Similarly to the gender division, no significant changes have occurred in the age and gender related division of the persons owing taxes in comparison with the last year (Table 2). Thus, the complicated economic situation has not had any effect on the gender and age indicators of the persons owing taxes.

**Table 2.** The age and gender related interval scale of the persons owing taxes

	Men <sup>3</sup>		Division in entirety (%)		Women		Division in entirety (%)	
	2008**	2009***	2008	2009	2008	2009	2008	2009
0-29	11 859	8 721	15	16	8 557	5 952	13	13
30-39	20 273	14 855	26	26	14 205	9 720	21	21
40-49	18 691	13 248	24	24	15 097	10 388	23	22
50-59	14 037	10 019	18	18	12 498	8 878	19	19
60-69	6 762	4 555	9	8	6 349	4 427	9	9
70-...	6 337	4 514	8	8	9 854	7 488	15	16

<sup>3</sup> From 01.01.2009 offsets the tax arrears and prepayments, which explains the decrease in the number of debtors to 2008/2009 comparisons.

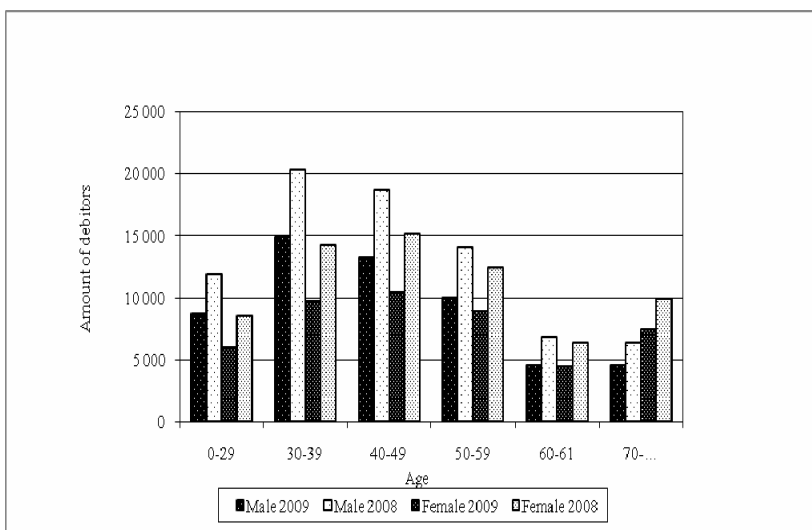
	Total		Division in entirety (%)	
	2008	2009	2008	2009
0-29	20 416	14 673	14	14
30-39	34 478	24 575	25	24
40-49	33 788	23 636	23	23
50-59	26 535	18 897	18	18
60-69	13 111	8 982	9	9
70-...	16 191	12 002	11	12

\*\*01.08.2008

\*\*\*01.08.2009

Source: ETCB; compiled by authors.

In the total number of persons owing taxes, the least number of persons owing taxes is in the more advanced age group, i.e. among people over 60 years of age, in comparison with those of a younger age. At the same time, the statistical indicators of the persons owing taxes as well as the data of the structure of the population show the level of willingness to pay taxes of both men and women according to the different age groups (Figure 5, Table 3). Men have the largest amount of unfulfilled tax liabilities from the total number of persons owing taxes as well as according to the data of the structure of the population at the age of 30 – 39 and for women, the respective age is 40 – 49, which decreases in each following age interval. Such tax related behavior can be interpreted by the gender related social activity, according to which men are socially active at the age of 30 – 39, and women by a decade later, when the children have gained their independence and there is the opportunity and the need for social activity.



**Figure 5.** Age and gender based comparison of the persons owing taxes. (ETCB, compiled by authors)

**Table 3.** The percentage of persons in the total number of persons owing taxes and in the total structure of the population

	Division in entirety among persons owing taxes		Division in entirety of the number of persons in the population	
	Men	Women	Men	Women
0-29	16%	13%	3%	2%
30-39	26%	21%	14%	9%
40-49	24%	22%	13%	10%
50-59	18%	19%	11%	8%
60-69	8%	9%	8%	5%
70-...	8%	16%	9%	6%

Source: Author’s calculations based on the data of Statistics Estonia and data of ETCB.

Based on the statistical data of the persons failed to fulfill their tax obligation that are confirmed by the data of the structure of the population, the tax related behavior of an individual taxpayer of Estonia is age and gender wise similar to the research results received on the basis of the data of World Values Survey (Torgler 2007), where the level of willingness of an individual to pay taxes depends on the age and the gender of the individual. On the basis of the reference data of the persons owing taxes and the structure of the population, changing the economic environment has not had an affect on the tax related behavior of the taxpayers in the total amount of the persons owing taxes based on the socio-demographic indicators.

In addition to the age and the gender, education is brought forward as the third independent parameter in the capacity of a shaper of the tax morale. However, it is the education that raises the most questions. According to the presumption, more educated persons are expected to have a better knowledge of the tax law, of the usage of the tax revenue and of the necessity thereof, which gives them an advantage to be consciously more tax compliant. At the same time, highly educated persons are more knowledgeable of the possibilities of tax evasion; they are above average critical of the righteous usage of the tax revenue and as a result, may also be of a lower level of willingness to paying taxes. Different research results about the integrity of the level of education and of the tax morale are ambivalent, pursuant to which, the effect of education on the tax morale has not yet found statistical evidence.

Upon shaping and the evaluation of the willingness of a taxpayer to pay the taxes, it is also essential, in addition to the above, to pay attention to the risks and the general attitudes arising from the society, the main aspects of which have been pointed out in the following subchapter.

### **3.2. Attitudes arising from the society**

Besides the personal beliefs, tax morale is significantly affected also by the treatment of the taxpayer by the state and is closely connected to the trust in the



taxpayer towards the state (Torgler 2002). Good relations between the state and the taxpayers, a well functioning public administration and the atmosphere of a positive social capital is the basis for a higher level of tax morale, i.e. the willingness of the persons to pay the taxes.

Based on the results of the research about the state recognition and the general values carried out among the inhabitants of Estonia in the spring of 2008, 74% of the participants are of the opinion that the most important attribute of a decent citizen is to honestly pay taxes, 23% consider it rather important, only 2% consider it rather unimportant and 1% does not consider it important at all (a special report of the RISC research).

Research conducted about the credibility of the state institutions in the first quarter of the year 2009 by Turu-uuringute AS provided a result according to which ca 78% of the inhabitants of Estonia continue trusting the Tax and Customs Board (Turu-uuringute AS 2009).

The positive research results regarding the necessity of paying taxes and the high level of trust towards the Tax and Customs Board should be a prerequisite for a high level of tax morale. It is the cooperation between the tax administrator and the taxpayer that is supposed to make possible the increase of voluntary collection of taxes (Kirchler, Hoelzl, Wahl 2008). An antagonistic atmosphere increases the reluctance of paying taxes, whereas synergy in the tax law relationship and trust towards the tax administrator as a partner improves the tax related behavior of individuals.

The statistical indicators of tax arrears, however, do not confirm high tax morale in the society. Based on the research of the state awareness and the general values, individuals feel that honest paying of taxes places them into the status of a decent citizen, but at the same time they are not asked if they really are that. Contradictory results raise the question of whether failure to pay taxes among persons owing small amounts (up to 5000 kroons) is rather connected to the ignorance of the obligation of paying taxes than to the unwillingness to pay the taxes in the obligated amount.

However, OECD has pointed out that it is essentially impossible to assess the results of influencing the tax related behavior of a taxpayer by various social programs. Even if it is possible to find taxpayers in the population with the purpose to demonstrate the positive impact of a program on the tax revenues, it is not possible to verify that tax compliance of the population would be ambiguously influenced (OECD 2009).

## **Conclusion**

The statistical indicators – tax debts of individual persons, the gender and age related structure of the persons owing taxes in the population – serving as the basis of this article confirm the earlier results of the empirical research supported by values, based on which the willingness level of paying taxes is connected to the

person-based independent indicators as gender and age. The frequency indicators of gender and age in the population of persons owing taxes and in the structure of the general population confirm the lower level of willingness of men to pay taxes in comparison with women, and the link between tax debts and a social activity. The question arises pursuant to the amount of the tax debts; where 90% of the persons owing taxes actually owe under 5000 kroons is whether failure to pay taxes is connected with the ignorance of the obligation to pay taxes, with the unwillingness to pay taxes in the obligated amount or whether there are other subjective reasons – this question will be the next research task of the author of this article.

Like levying taxes, taking and giving loans are among the most ancient human activities arising as a result of the development of civilization. Social life is organized in such a way that with no obligations, life would practically come to a stop. By loaning, the society has acknowledged the model of living with a debt and thereby accepted the respective life style. Upon analyzing a life with debt, the difference has to be made, on whose account it is done. As the state of Estonia lacks the so-called national wealth measured in money on account of which it would be possible to finance the expenses of the state administration, it is not acceptable and the society should not favor living with debts on account of the state revenues. Therefore, the society (the state) has an important role upon educating the individuals and upon shaping their tax related behavior.

What are the possibilities to increase voluntary payment and to influence the shaping of tax morale in a positive direction? Is it sufficient to explain the importance of tax revenues to the inhabitants of the country and/or should we initiate teaching of taxation as early as on the level of secondary education? (Lillemets 2007) Conducting tax related studies and information work among the potential taxpayers on the level of secondary education is in the opinion of the author of this article one of the possibilities of raising the tax morale, but not the only one. In today's economic situation, where the well-being of the state depends on the tax revenues, the state must be ready to contribute not only to the function of tax administration and tax collection, but also to preventive activities, including the shaping of tax related behavior of the taxpayers.

Upon creation and development of tax policy, involvement and informing the public and raising of their awareness of the necessity of paying taxes is essential. It is important in specialty literature and in the broader society to spread the awareness of the importance and the meaning of the tax morale. Demographic changes, the changes in the behavioral manners, attitudes and beliefs of individuals in the course of time offer new challenges not only to tax authorities but to the entire society.

Taxation is a means of economic control on which the financial power of a state depends, as well as the well being of the entire state. The vitality of the tax system is reflected in the application of its administration. From the point of view of social sciences, it is not important how many different taxes have been established; important is how the collection of taxes has been organized. Tax evasion, including failure to fulfill one's tax liabilities using legal and illegal means, will never

disappear, the question is only how well the taxpayers, and the political ideology and the administrative methods limit its impact on the administrative capacity and the financial power of the state.

Taxes are the price of being a state, and for a small nation, nationhood is expensive. Obtaining revenues for the state, i.e. collecting tax revenues, is an art, the success of which depends on what and how we contribute to it.

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# PERFORMANCE OF SELECTED ESTONIAN FIRMS FINANCED WITH START-UP GRANT: ABILITY TO FOLLOW PLANS AND GRANT USAGE EFFICIENCY

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## Abstract

Whereas start-up firms are important engines of growth and face at the same time many impediments in the market, government aid to start-ups has been used extensively in different countries. In this article we have studied the performance of a small sample on new Estonian firms that received public start-up grant. For the analysis we use the rather unique data on the firms' plans for the 3 successive years after the start-up. The decisions to grant the start-up aid were made based on these plans. The results indicated that while many firms could not meet their reported goals (in terms of turnover, profit and the number of jobs created) and more than half of the firms had tax arrears, the estimated labour taxes paid by these firms were much higher compared to the sum of the grant, thus indicating the positive net impact of grants on the state's fiscal position.

**Keywords:** start-up firms, start-up grants, Estonia

**JEL Classification:** H50, L20

## 1. Introduction

State budget and welfare in different European Union countries are to high extent dependent on taxes paid by firms, among them small and medium sized ones. That is the reason why guaranteeing efficient environment for the development of firms is one of the key aspects of assuring state success in global competitive environment. Among different measures used to support entrepreneurship one can also find financial start-up aid to firms, which can be in the form of grant, loan, interest rates lower than the one prevailing in the market, and other measures.

In case of start-up grants it is highly important that firms getting the grant would remain vital and serve as good tax payers, in this way guaranteeing efficiency (i.e. quick "payback") of financial aid. Determining firm vitality is often very complicated, as vitality assessment at certain time might not consider future market

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situation or the action of management, which both can have crucial impact on firm's future performance. Constant improvement of start-up policy helps to guarantee more efficient usage of state resources and also increase country's sustainable growth.

Current article focuses on the performance of 39 Estonian start-up firms that received financial aid from the state in the form of start-up grant during 2005-2008. We use rather unique data of the firms' plans made for the 3 successive years after the start-up. The decisions to grant the start-up aid were made based on these plans. That data is combined with data on their tax payment records and the financial indicators from the Estonian Business Register.

The rest of the article is structured as follows. At the beginning previous research on start-up grants is reviewed, especially the few existing papers on the available evidence on the impact of start-up grants on Estonian firms as well as the changes in the Estonian policy towards start-ups has been viewed. This is followed by introducing the data that is used in the empirical analysis. The empirical part of article views performance of start-up firms after obtaining grants, their ability to meet planned financial indicators and eventually rationality of start-up grant from state's viewpoint has been considered, also taking into account the tax paying performance of analyzed firms. The article ends with conclusive policy recommendations in order to improve start-up grant practice in Estonia.

## **2. Review of literature on start-up grants**

The literature covering start-up firms has analyzed various issues like start-up firms' performance, vitality, their problems, support measures, their efficiency etc. A lot of materials can be found from studies about other countries, but important research has been done about the topic in Estonia as well.

In the literature there can be found many studies estimating the impact of government grants to enterprises (for literature reviews, see e.g. Masso and Vildo 2006, Klette *et al.* 2000). Quite a few of these are about the R&D grants (see e.g. Czarnitski and Licht 2006). There have been made much less studies on the impact of start-up grants. The few examples are as follows. Del Monte and Scalera (2001) estimated the life duration of the new firms in Italy; their results demonstrated that the subsidies proportional to the size of projects induced a bias towards larger and more risky firms. Almus (2001) showed in case of Germany that firms receiving public start-up assistance performed better in terms of employment growth over a six-year period. Crepon and Duguet (2003) found from the analysis of French data with propensity score matching that start-up subsidies increased significantly the survival of the firms created by former unemployed people; and the allocation of subsidies acted as a screening process improving the performances of the bank loans; the effect of subsidies was stronger than that of bank loans. Reid and Smith (2000) found from the sample of Scottish start-up firms that the group of firms with the highest performance (created with cluster analysis based on employment growth, return on capital and labour productivity) had the lowest frequency of grant support;

in the regression analysis the grant had however no impact on the firm survival variables.

Moving on to the existing studies about the start-up aid in Estonia, Masso and Vildo (2009) found that start-up grants had positive impact on job creation in second year after getting the grant, but for all viewed years concerning the sales growth. At the same time they concluded that start-up grants did not increase firm's survival chances. Praxis research report (Kuusk, Jürgenson 2007) concludes that start-up grant program in Estonia is necessary and well functioning. It also emphasises high survival rate of start-up firms two years after getting the grant (for firms that got the grant in the year 2004) – 89%. For comparison, according to Masso et al. (2007) the survival rate 2 years after entry was 79% during 1996-2002. From negative side it states that firms moving from start-up phase to growth phase should also be supported and by different support scheme – this problem has been actually already solved with current start-up grant policy and has been viewed in following section. Also the report points out poor counselling of start-up firms by grant provider. The aim of the study conducted by the National Audit Office of Estonia (NAOE) was to estimate the impact of different governmental entrepreneurial support measures to employment in supported regions. They claimed that the objectives specified so far in the regulations were not clear enough and they emphasized the need to work out a unitary set of desirable outcomes which would contribute to a more aligned government policy package (Riigikontroll 2004).

A research report by Enterprise Estonia (Popman 2008) about start-up grants from 2004-2006 lists several important aspects. In that period 682 firms got start-up grant and from them 584 firms (86%) were still active in year 2007<sup>2</sup>. This does not show actual failure rate, because the failure probability increases in time and is definitely smaller just after getting the start-up grant. For instance in case of firms that got start-up grant in 2004 the report marks failure rate of 77%. Average grant size for firms was 118,400 EEK (approximately 7567 Euros) and average total investment during start-up project 189,516 EEK. Among the supported firms the most represented region was Tartu county with 126 firms<sup>3</sup>, which makes 18.5% of all firms. In 2007 411 firms from 584 had positive net income; although the ability to meet their net income projections was only 13%-21% depending of the grant provision year (older firms achieved their goals with lower frequency). The turnover forecast was fulfilled by 23%-28% of firms depending of their grant application year. Average number of employees was 3.91 and 155 firms out of 584 (27%) could achieve their forecasts.

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<sup>2</sup> Though one may conclude that this number is fairly high, it needs to be considered that by 2007 some firms had existed for 1 and some others for 2 years, thus the figure is some average of 1-year and 2-year survival rates and thus a bit hard to compare with national average survival rates.

<sup>3</sup> While the biggest number of the firms in Estonia is concentrated in Tallinn (the capital of Estonia) and Harjumaa, in that period the firms from that region were not eligible for the start-up aid. Firms from Tallinn could start applying for grant only in 2009. Till that time, the town government of Tallinn provided start-up aid to the firms registered in Tallinn.

Thus one serious problem concerning the start-up grant measure is the inability of firms to meet their projections. As main reasons for such scenario firms have stated economic recession (which has been especially severe in Estonia<sup>4</sup>), lack of qualified labour and quick rise of salaries, lack of raw material and quick rise in its price, increase of competition, lack of equity and financing possibilities, distrust against Estonian firms in case of exporters and high prices at real estate market. Authors suggest that systematic overestimation of prospects in order to get the grant could be one potential reason, which brings us to the question how the start-up policy can be improved.

### 3. Start-up business support grant in Estonia

Hereby we give an overview of the conditions under which the institution governing the programme, Enterprise Estonia, assigns start-up grants. We also outline the changes made into the conditions over time as this is important to analyze the data that is described in the next chapter. The legal framework for start-up grant is created by the acts of the Ministry of Economic Affairs and Communication (Start-up firm's... 2004; Start-up firm's... 2008). Current draft of mentioned act is in force since the 30<sup>th</sup> of August 2009, but it has gone through various changes starting from the year 2002, when the start-up grant provision was started in current form by Enterprise Estonia.

Table 1 presents the upper limits of the size of the start-up grant over the years. As one can see, the upper limit for the grant size has increased over time and there has been differentiation between small and large size firms from the year 2005 onwards. In case of different grant sizes the criteria for grant application evaluation is also different, whereas in case of large grant firm must reach certain turnover limit annually. Large grant can also be called export-oriented one, as the presence of export activities is very important in order to get the grant.

**Table 1.** The upper limit for the size of the start-up grant from 2002 till 2010

<b>Year</b>	<b>Maximum application sum</b>
2002-2003	Up to 100,000 EEK
2004-2005	Up to 160,000 EEK
2005-2007	Up to 50,000 EEK or up to 160,000 EEK depending of firm type
2008-2009	Up to 50,000 EEK or up to 200,000 EEK depending of firm type
2009-today	Up to 100,000 EEK or up to 500,000 EEK depending of firm type

Source: Start-up firm's... 2004; Start-up firm's... 2008.

<sup>4</sup> The global economic recession hit especially hard Estonia, e.g. the annual GDP decline in the 3<sup>rd</sup> quarter of 2009 relative to the 3<sup>rd</sup> quarter of 1998 was 15.6, being among EU countries the second highest after Latvia.



The usage possibilities of grant and other application criteria have changed in time also, but the differences between original and current measures are not remarkably different. At the same time start-up business plan assessment criteria have become more sophisticated over time.

Start-up grants can be used to finance the purchase of fixed assets needed in firm's business process. Also the transportation, set-up and other costs concerning fixed asset implementation can be covered. Recently the program has been made more flexible and also certain type of software, patent etc. purchases, marketing costs and others are eligible.

Additionally important was the aspect that before 2009 firms in Tallinn (the capital of Estonia) could not apply for Enterprise Estonia start-up grant, but at the moment those firms can also apply. This is also one reason why firms from Tallinn are not represented in current sample that discussed in the data section.

#### **4. Data**

The sample used in the current analysis consists of 39 firms that successfully applied for start-up grant from Enterprise Estonia from May 2005 to July 2008. The number of firms by year of application breaks down as follows: 2005 – 6 firms, 2006 – 18, 2007 – 5, 2008 – 10. Firms belong to quite different industries, from manufacturing of houses and furniture to kindergartens and security services. In summary, 14 of these firms can be classified as manufacturing firms, 17 as different service providers and 8 as construction firms. The place of activity at the start moment was for most firms Tartu County, although during enlargement phase many have started activities in other municipalities as well.

For analysis purposes we used data from three different sources: applications for start-up grants submitted to Enterprise Estonia, annual financial reports of firms (from years 2005-2008) submitted to the Centre of Registers and Information Systems (Estonian Business Register data) and the data about tax arrears from Estonian Tax and Customs Board (available since 2007).

Start-up business grant applications include data about the firms' previous activities and planned activities after getting start-up grant. Planned activities include data about planned sales revenues (incl. export sales revenues), net income, investments made into fixed assets and number of employees (males, females and total) during three years after applying for start-up grant. Also the application lists the amount of start-up grant applied by entrepreneur.

Centre of Registers and Information Systems gives annual reports of firms submitted to the register according to Estonian business code, which is publicly available information. The latest available business year reports were from year 2008, as during the composition of article the business year of 2009 had not ended yet, but also it must be taken into account, that normally business year reports become

available not earlier than half a year after previous business year has ended, so they could not have been obtained at the time the article was written.

Estonian Tax and Customs Board data is composed of tax arrears data at the end of every month starting from year 2007. Publicly available is only the current information about tax debt of different firms. The historical data comes from special database collected by an Estonian firm, which made this available to authors for research purposes.

## 5. Results

### 5.1. Performance of start-up firms after obtaining the grant

The following section outlines the developments in main performance measures of start-up firms after getting start-up grant. The following performance measures are afterwards compared with the plans given in grant applications, to point out differences and impacts connected to them. As firms in analysis vary by fields of activity and size, authors have used median values of performance indicators in order to control for the influence of outliers, as arithmetical average can be somewhat confusing.

Table 2 shows that contrary to theory and expectations the firms are not developing over time and one can see decrease in turnover, net income and profitability. This aspect is problematic, as start-up grants are often given with the assumption of quick growth and creation of jobs, which currently seems not to be fulfilled. Additionally a question rises concerning the turnover, as the precondition of getting the start-up grant is to have average turnover of three years above certain limit after applying<sup>5</sup>, which in many cases has not been achieved.

**Table 2.** Median turnover, net income and number of workers of start-up firms in the first and second year after getting start-up grant

Indicator / year	First year	Second year
<b>Turnover (thousands EEK)<sup>6</sup></b>	966.4	890.1
<b>Net income (thousands EEK)</b>	30.6	6.8
<b>Number of workers</b>	3	3

Source: Composed by authors.

Table 3 gives total investment plans given in start-up grant application forms of those firms and total start-up grants given to them by different years. The total investment indicator only reflects those investments that firms have planned in the start-up project, which does not mean that firms did not have any additional investments that are not reflected in start-up grant application.

<sup>5</sup> In case grant sum was the same for all firms, the turnover limit was 0.5 million EEK and after dividing grants in two, the larger grant has turnover limit of 1 million EEK

<sup>6</sup> In order to provide evidence that arithmetical average can give confusing results, the first year arithmetical average value would be 1.97 million EEK and second year 1.66 million EEK accordingly, thus the difference of median and arithmetical average is about twofold.

**Table 3.** The sum of start-up grant and planned investments by the year in which the grant was given

Year start-up grant was given	Number of firms that got start-up grant on specific year	Total investments planned according to start-up grant applications (million EEK)	Total grant sum of firms (million EEK)	Average investment per application (thousands EEK)	Average grant sum (thousands EEK)
2005	6	1.26	0.78	210	129
2006	18	3.54	2.32	197	129
2007	5	1.26	0.79	253	158
2008	10	2.52	1.25	252	125
Total	39	8.58	5.13	220	131

Source: Composed by authors.

Table 4 presents the number of firms with tax arrears and the total sum of tax arrears. The table presents a problematic aspect – more than half of the start-up firms have tax arrears, although the situation is not so bad in case of all years that are under observation. When taking into account unpaid interest payments from tax arrears, the mentioned sum would be even bigger.

**Table 4.** Tax arrears of start-up firms on 20<sup>th</sup> of January 2010

Grant receipt year	Number of firms with tax debt	Total sum of tax arrears (millions EEK)	Number of firms without tax debt
2005 <sup>7</sup>	5	1.65	1
2006	8	0.34	10
2007	3	0.89	2
2008	4	0.56	6
Total	20	3.43	19

Source: Authors calculations based on the database of tax arrears.

From previous discussion the question arises whether the tax arrears have dramatically risen during last year or even months caused by the worsening economic conditions. For that purpose the authors used the tax arrears' database to check the situation at the end of years 2007 and 2008. The results given in table 5 show that hypothesis about the unfavourable economic environment having impact on the tax paying performance of firms is indeed supported by that data. The analyzed start-up firms had practically no tax debt in the end of year 2007 and year 2008. When comparing their tax arrears with the overall trends in the tax arrears in Estonia, it is revealed that the viewed start-up firms perform remarkably worse as their tax arrears' growth rates are much higher. Also the question rises, whether

<sup>7</sup> One start-up firm is currently bankrupt and its unpaid tax debt is 1.26 million EEK.

supported firms would not be competitive also in more favourable economic environment. Giving grants to firms that would potentially fail in worse economic conditions would be inefficient for state.

**Table 5.** Tax arrears of start-up firms at 31<sup>st</sup> of December 2007 and 30<sup>th</sup> of November 2008

<b>Date</b>	<b>Total tax arrears of viewed start-up firms (EEK)</b>	<b>Total tax arrears of all Estonian firms (billion EEK)</b>
31.12.2007	244	2.88
30.11.2008	1340	4.03
20.01.2009 for start-up firms and 30.10.2009 for all Estonian firms	3 431 401	30.5

Source: Composed by authors; Tax arrears database.

## 5.2. Fulfilment of start-up firms' plans

Whereas the provision of start-up grant is dependent on the plans of firms that were presented when applying for grant, it is important to consider the financial plans of the firms. In some cases firms have submitted plans for the first, second and third year after applying (it is not the same as their business year and can be called project based approach). In other cases firms have presented plans for full calendar years, which in case of the sample used is the same as their business year. There can be seen small differences in case of comparing project based years (first year starts after getting start-up grant) with business years, but there is no possibility to convert one data to another. Still the impact from using business year approach to results can be considered minimal.

**Table 6.** Median turnover, net income and number of workers as planned for 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> year after applying for start-up grant

<b>Indicator / year after application</b>	<b>First</b>	<b>Second</b>	<b>Third</b>
Turnover (million EEK)	2.44	3.14	3.64
Net income (thousand EEK)	298	433	474
Number of workers	5	6	7

Source: Composed by authors.

The previous results show, that firms have on an average planned remarkable growth in turnover, profit and employment. One explanation could be that during the period when viewed firms received the grant, Estonian economy experienced rather high growth rates, and the projected high growth may reflect that the previously observed high growth translated into positive expectations regarding future developments. There can be also several other reasons, which include different market situation during application, wish to meet criteria set in start-up grant application rules or too

optimistic (and unreasonable) view at firm's growth potential. It is interesting to compare those figures from plans with the actual economic performance; that has been done in the following table. While yet another possible explanation for not fulfilling the plans made for the years after start-up could be the sum of granted aid being smaller than applied, to our knowledge that was not the case.

**Table 7.** The ratio of actual median result to the planned median result

<b>Indicator / year after application</b>	<b>First</b>	<b>Second</b>
Turnover	40%	28%
Net income	10%	2%
Number of workers	60%	50%

Source: Composed by authors.

Table 7 shows that there is remarkable overestimation compared to median values. Concerning the value of turnover, among the 27 firms for which first year results were available through business year reports, only 7 could perform at least as well or better they had planned. Two years after getting start-up grant the differences are even more remarkable when compared to first year after getting start-up grant, but this is somewhat logical, as high growth rates have been projected in most of the business plans.

During this research it has not been possible to inquiry into the reasons why the real performance has been lagging behind so seriously concerning those analyzed firms—this will be the task of additional research on the topic. Still a previously assumed reason – remarkably different market situation during the time of application and the following years – could be the most logical reason.

### **5.3. Taxes paid by start-up firms**

There are various other arguments for giving start-up grants. In addition to the fulfilment of the goals, the rationality of giving start-up grant to firms could be evaluated also based on whether the tax income created by the supported firm is larger than the amount of money given to them as support. Although the analyzed Estonian start-up grant programme is funded from structural funds, not national funds, still its efficiency needs to be estimated.

Among different kinds of taxes levied on firms it is perhaps the easiest to calculate the sum of taxes paid on labour that in the Estonian case is composed of personal income tax, social tax and unemployment insurance tax. Although there are also corporate income tax (applied only on dividends, retained earnings are tax free since 2000) and value added tax, they are not taken into account in the current case. In case of dividend payments, they are not paid regularly and are dependent on the decision of owners – in case of the viewed firms, annual reports for year 2008 did not show any dividend payments and eight firms had problems with equity not

meeting the criteria set in law, which does not allow them paying dividends. What concerns value added tax, then the analyzed firms certainly pay it, but the question is who will be the final customer of products and services. In case firm pays value added tax and the client is private individual who cannot balance it like firm with value added tax paid by itself, then it could be said that firm has created value added tax payments to state. In order to say that, we would need to have an overview of internal reporting of firms that was not available to authors in current study. Another limitation of the analysis is that we can not consider the business stealing effect, i.e. the possibility that the new entrant forces some of the existing firms to exit that would limit the impact of entry.

In case of labour taxes we take into account the number of workers one year after establishment given in business year reports and hypothetically make calculations with year 2009 average Estonian salary and taxes, that are 11 770 EEK (approximately EUR 752), income tax 21%, social tax 33%, unemployment tax 1.4% (the unemployment insurance tax paid by the employer, in addition to that employee pays 2.8%)<sup>8</sup>. During the first year firms for which data was available had declared 107 jobs, which taking into account previously given variables would give the following results as presented in table 8.

**Table 8.** Estimated annual labour tax payments in case of 107 workers using year 2009 average salary and tax figures

<b>Tax</b>	<b>Annual tax amount (million EEK)</b>
Income tax	3.08
Social tax	4.99
Unemployment tax paid by employer	0.21
Unemployment tax by employee	0.42
<b>Total labour taxes</b>	<b>8.70</b>

Source: Composed by authors.

As it can be seen, the total sum of grants given to firms is less than the labour tax income calculated just in one single year (2009). The net impact is 3.57 (=8.70-5.13) million kroons. In fact, it would be more appropriate to compare the discounted sum of all labour taxes paid at various years to the amount of grant. If additionally to consider the aspect, that unpaid taxes at 20<sup>th</sup> January 2010 of the analyzed firms were of the size of 3.43 million EEK, it is still evident that those grants have provided positive net value to Estonia. Thus it can be concluded, that even one-year

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<sup>8</sup> We note that the assumption of the average wage very likely overestimates the sum of paid labour taxes because among small firms the wages are usually lower than average due to the reasons like e.g. the costs of employee monitoring, capital-skill complementarity and the complementarity between labour skills and advanced technology capital (Troske 1994), thus the calculations should be repeated with other assumptions.

labour tax income is bigger than total value of grants and derived from that future value of labour taxes would definitely be much higher than one-year value, so grants can be considered efficient.

In the light of this additional question of the efficiency of those grants rises – whether the firms would have needed such grant at all or it was the most reasonable place to grant money. For that question the answer could be derived from firms' first year equity values. In case firm's equity at the end of first year after getting financial support exceeds the total investment amount (including grant and self-finance), then it is evident the project could have been financed through equity. In 8 cases out of 27 the net income during first year after getting the grant was higher than grant, so this would lead to the suggestion, that for those firms grant would have been unnecessary and they would have managed without it. Of course such conclusion is to some extent speculative, as one must look into the business process of firm (how quickly assets produce money) and what other financing option the firm could have used.

## **6. Conclusive remarks for start-up policy improvement**

In the current paper we analyzed the performance of a small sample (39) of start-up firms after entry, in particular using unique data on the projections of their performance indicators reported at the time of application and used for evaluating the application. In addition to that the data on the tax arrears was used. The results showed that while many firms could not meet their reported goals (in terms of turnover, profit and the number of jobs created) and more than half of the firms had tax arrears, the estimate labour taxes paid on the jobs in these firms were much higher compared to the sum of the grant, thus indicating the positive net impact of grants on the state's fiscal position (subject to the assumptions behind the calculation). From these results the following recommendations could be made as regards to the future development of the start-up grant programme.

1. The observed tendency for start-ups to not achieve their plans sets to the grant provider an important task to try to recognize the firms that have likely overestimated their potential and calculate whether that wrong estimate can lead to potential bankruptcy in worse case or just inability to meet its liabilities in time.
2. The necessity of grant in case of some firms could be questionable whereas they obtain larger equity than the grant already in the first year after they got grant. The idea of start-up grants' is to solve financing problems at start-up phase, but in mentioned case those problems seem to not exist. So such firms should not be financed at all or financed with lower proportion compared to other firms.
3. As tax paying ability (and creation of jobs) of firms is vital to guarantee the efficiency of grant usage, this objective should be set as first priority. Authors on the one hand suggest putting more weight on that dimension when deciding upon grant application. On the other hand it should be emphasised that the ability to meet those tax obligations in reality is also important (see previous point 1).

4. As industries of firms differ a lot, it would be rational to remove minimal turnover requirement of firms and change it against tax creation indicator. Some firms are able to create large turnover, but with very little workforce. In case they are exporting firms and not paying dividends regularly, state's tax income would be not proportional to grant size.
5. The grant's size should be differentiated according to the perceived vitality of the start-up firms. On the other hand it is also not possible to sort out the viable firms at the first place because the entry of firms naturally involves some kind of experimentation with the market whereby start-ups do not know their viability beforehand, but acquire information about it during the activity from the realized profits (the idea is formalized in the "noisy selection" or passive learning model according to Jovanovic's (1982) "noisy selection" or passive learning model).

Current paper poses several additional research questions, which can be developed in future studies. Firstly firms could be interviewed to find out the exact reasons why their initial plans did not realize. Secondly the sample could be made larger to get more support to the ideas brought out in this article.

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# PPP-PROJEKTE BEI REGIONALEN SOZIAL-WIRTSCHAFTLICHEN ENTWICKLUNG

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## Abstract

The purpose of this paper is to analyze the legal and economical problems of the PPP-projects (mainly in Tallinn) and the comparative analysis of the PPP-projects in some EU countries. Unfortunately the PPP-projects in Estonia is such a new topic that there have been no scientifically qualifying publications written about it. Quite many topic-related articles have been published in journalism but the purpose of them has been mainly political. In Estonia (mainly in Tallinn) the PPP-projects have been exercised since year 2000. Since then the PPP-projects have been debated over by the state (Ministry of Finance) and the City of Tallinn about whether the PPP-projects should be counted into the debt obligations of the city or not? According to the Rural Municipality and City Budget Act a rural municipality or city may take loans, on the following conditions, the total amount of unrepaid loans shall not exceed 60 percent 20 per cent of proposed budget revenue for that budgetary year. Until 2008 Tallinn counted the costs of the PPP-projects only as yearly payments to the private sector but not as a loan. Since 2009 the new bookkeeping rules were enacted and the PPP-projects were counted upon the local government debt obligations. Thereat it is relevant to mention that the methodics of the Eurostat don't calculate PPP-projects as dept obligations of the public sector. Until now the PPP-projects in Estonia have been exercised only for some years and it has been done only for renovation of the social infrastructure objects (schools) or construction (dwelling houses, sport structures). Although the PPP-projects have been planned to be used in development of the technical infrastructures (roads) these plans haven't been accomplished yet. PPP-projects have been Tallinn-centered and the reason for this is that Tallinn has compared to other cities a lot more potential to administer and finance the complicated projects. More extensive use of the PPP-projects has been obstructed by the lack of the statewide regulations.

**Keywords:** Public Private Partnership, PPP-Model, co-operation, New Public Management, economic development, government, capital city, city council, school, dwelling house, rural municipality and city budgets act, borrowing, financial supervision

**JEL classification:** H, J, R

## Einleitung

Viele sozialwirtschaftliche Aufgaben im Bildungswesen, öffentlichen Transport usw. gehören in Estland zum Zuständigkeitsbereich von Kommunalverwaltungen. In Estland mit seiner einstufigen Kommunalverwaltung sind es Gemeinden und Städte, die nach Lösungen der Entwicklung der Infrastruktur dieser Wirtschaftszweige zu

suchen haben. Als einer der perspektivreichsten Wege, besonders in der Hauptstadt Tallinn, hat sich die Zusammenarbeit des öffentlichen und privaten Sektors in der Form von PPP-Projekten erwiesen. Leider handelt es sich bei diesen Problemen in Estland noch um eine dermaßen junge Thematik, dass es kaum Untersuchungsarbeiten und wissenschaftliche Publikationen gibt, auf die Rücksicht genommen werden könnte. Es gibt zwar diesbezügliche Artikel, die in der Presse publiziert worden sind, aber sie dienen meistens politischen Zwecken.

Dieser Artikel setzt sich zum Ziel, die rechtlich-wirtschaftlichen Problemen der Entwicklung von PPP-Projekten in Estland (vornehmlich in Tallinn) zu analysieren und in einigen anderen Staaten (vornehmlich in den Mitgliedsstaaten der Europäischen Union) aufzuzeigen.

### **PPP-Projekte in den anderen Staaten**

Das Konzept der PPP hat seinen Ursprung in den USA, wo ein Erfahrungshintergrund besteht, der bis in die 1940er Jahre zurückreicht. In Europa wurde das Konzept der öffentlich-privaten Partnerschaften erst in den 1980er Jahren aufgegriffen. (Glock, S. 330)

Im Jahre 1979 begann mit der Wahl von M. Thatcher zur Premierministerin des Vereinigten Königreiches von Großbritannien und Nordirland ein großflächiger Umbau der öffentlichen Verwaltung, um diese effektiver und effizienter zu gestalten. Diese Reformbewegung hat unter der Bezeichnung „*New Public Management* (NPM)“ weltweite Nachahmer unter den Regierungen gefunden. Der Infrastruktur-Ansatz entwickelte sich in den 80er und 90er Jahren des letzten Jahrhunderts und findet seine ideologische und theoretische Begründung in der Reformbewegung des NPM. Das Vereinigte Königreich von Großbritannien und Nordirland ist als Mutterland des NPM als zugleich Erfinder der *Public Finance Initiative* (PFI), welche zum weltweiten Vorbild für privat finanzierte Infrastrukturprojekte geworden ist. (Promberger, S. 202-204)

Professor Kurt Promberger (Universität Innsbruck) schreibt: „*Public Private Partnership* (Öffentlich-Private Partnerschaft) sind weltweit zu einem beliebtesten Instrument der Politik geworden. Regierungen, insbesondere die, die sich dem dritten Weg verschrieben haben, betonen mit Nachdruck, daß Öffentlich-Private Partnerschaften ein wichtiges Mittel zur Modernisierung unserer Gesellschaft darstellen und daß die Einbeziehung von privaten Akteuren in die Bereitstellung von öffentlichen Diensten einen essentiellen Beitrag zur Erreichung politischer Ziele leisten können und damit einen gesellschaftlichen Mehrwert schaffen. PPP-s sind aber auch ein Ausdruck des herrschenden Zeitgeistes, der von Modeworten mit Symbolkraft geprägt ist. Die zunehmende Popularität wird vielleicht auch dadurch gefördert, daß das PPP-Konzept sehr projektionsoffen formuliert ist und die Entscheidungsträger – ganz gleich, ob Politiker, Spitzenbeamte, Unternehmer, Interessensvertreter, Bürger, etc – ihre Vorstellungen von Partnerschaft (Kooperation, Kollaboration, Interaktion) zwischen öffentlichem und privatem Sektor darunter subsumieren können.“ (Promberger, S. 192)

Dr Detlef Lupp definiert: „Wichtig ist, bei Public Private Partnership von einem richtigen Begriffsverständnis auszugehen. Um ein echtes PPP-Projekt handelt es sich nur dann, wenn eine langfristige, vertraglich geregelte und entgeltliche Zusammenarbeit zwischen einem öffentlichen Auftraggeber und einem privaten Partner über den gesamten Lebenszyklus eines Bauwerks vorliegt.“ (Lupp, S. 296)

PPP ist für jene öffentlichen Körperschaften nützlich, die sich in finanziellen Schwierigkeiten befinden, während es eine Chance darstellt, sowohl für private Unternehmen (diese können ihren Gewinn und ihre Synergien mit dem öffentlichen Sektor erhöhen) als auch für Gemeinden, die beabsichtigen die eigenen Kompetenzen zu erhöhen und voll von der Partnerschaft mit dem öffentlichen Sektor zu profitieren. (Gianella, S. 236-237).

Interessant ist die Situation in Österreich. Nach Angaben von Professor K. Promberger ist Österreich eines der wenigen westlichen Industrieländer, denen es weitgehend gelungen ist, den öffentlichen Sektor vor der Auswirkungen der NPM-Reformwelle zu schützen. In vielen Ländern besteht das Hauptmotiv für die Durchführung von PPP-Projekten im öffentlichen Infrastrukturbereich in der Entlastung öffentlicher Budgets durch außerbudgetäre (private) Finanzierung. Diese Überlegungen spielen in österreichischen Bundesverwaltung – wenn überhaupt – eine zumindest untergeordnete Rolle. Im Gegensatz zur Bundesrepublik Deutschland gibt es in Österreich keine spezifischen gesetzlichen Regelungen für PPPs. Sie können auf der Grundlage der allgemeinen zivil-, und haushaltsrechtlichen Normen unter Beachtung vergabe-, beihilfen-, gesellschafts-, steuer-, verfassungs- und arbeitsrechtlicher Regelungen und des gemeinschaftlichen Rechtsrahmens errichtet werden. Eine große Bedeutung bei der Durchführung von PPP-Projekten im Infrastrukturbereich spielt das Vergaberecht. Verglichen mit dem Vereinigten Königreich und den Niederlanden, aber auch mit der Bundesrepublik Deutschland und Frankreich spielen PPP-Projekte in Österreich noch eine untergeordnete Rolle. (Promberger, S. 208-218).

Italien stellt bei der Umsetzung der Projektfinanzierung und der Anwendung der Logik des PPP einen Sonderfall dar (Gianella, S. 230). Dies zeigt sich in der unterschiedlichen Fähigkeiten der Entwicklung und Umsetzung dieser Konzepte auf den verschiedenen Ebenen der öffentlichen Verwaltung (national, regional, lokal), in den verschiedenen Landesteilen (Ober-/Mittelitalien *versus* Süditalien) und in den verschiedenen Sektoren der öffentlichen Verwaltung (Netzdienste, öffentliche Infrastrukturen, Gesundheit, Bildung, etc). Im Jahre 2006 belief sich in Italien die Gesamtsumme der im Rahmen von PPP-Projekten und Projektfinanzierungen durchgeführten Investitionen auf ca. 58 Mrd. Euro, von denen gut 32 Mrd Euro im Jahre 2006 realisiert wurden. Die Finanzierung über PPPs beträgt 30 Prozent des nationalen Marktes für öffentliche Arbeiten. Die fünf wichtigsten Bereiche der Anwendung von PPP und Projektfinanzierung sind: Netzgebundene Dienste (Wasser, Gas, Energie und Telekommunikation) 48 Prozent; Verkehr 21 Prozent; Gesundheit 9 Prozent; Parkplätze 4 Prozent und Stadterneuerung 4 Prozent. Italien ist hinter dem Vereinigten Königreich der zweitgrößte europäische PPP-Anwender im Gesundheitswesen. (Gianella, S. 230-231)

Auch in der Schweiz hat sich in den letzten Jahren die Auffassung durchgesetzt, daß es zur Bewältigung der Herausforderungen in der öffentlichen Verwaltung notwendig ist, sehr intensiv mit privaten gewinnorientierten Unternehmen im Rahmen von PPPs zu kooperieren (Gianella, S. 236). In der Schweiz war der private Sektor immer in den Bau und Betrieb von öffentlichen Infrastrukturen involviert (z. B. Abfallwirtschaft und Alptransit AG). Auf jeder Ebene der Verwaltung (föderal, kantonale und kommunale) ist die Zusammenarbeit zwischen öffentlichen und privaten Akteuren sehr intensiv. Ungeachtet dessen konnte sich das PPP in der Schweiz im Gegensatz zu anderen europäischen Ländern bis jetzt nicht durchsetzen. Zu den Gründen, die diesen Rückstand erklären, zählt zweifelsohne die Fähigkeit der territorialen Schweizer Gemeinschaften, von den sehr günstigen Finanzierungsmöglichkeiten in der Gesamtheit zu profitieren. Die lokalen Körperschaften in der Schweiz etablieren PPP-Projekte hauptsächlich in den folgenden Sektoren: Sozialdienste (14 Prozent), Transportwesen (11,5 Prozent), Kulturgüter (10,8 Prozent), Wasser und Strom (10,5 Prozent) sowie Sportförderung (10,2 Prozent). (Gianella, S. 242)

Die ausländischen Beispiele zeigen – auf kommunaler Ebene ist es möglich und wünschenswert, PPP als alternative Form für die lokale Wirtschaftsentwicklung einzuführen.

### **PPP-Projekte in Estnischer Wirtschaftspolitik**

Gesetze und andere staatliche Rechtsakten haben sich in Estland bisher nicht mit Regulation der mit PPP-Projekten verbundenen Problemen befasst. PPP-Projekte sind einmal im Programm der Regierung der Republik Estland erwähnt worden. Nämlich im Koalitionsvertrag der Estnischen Reformpartei, der Estnischen Zentralpartei und der Volksunion Estlands vom 2005 wurde unter Punkt „Staatlichkeit. Rechtspolitik“ gesagt, daß „19. Von der Regierungskoalition eine rechtliche Umwelt für Benutzung der Investitionen des privaten Sektors zwecks Erweisen öffentlicher Dienste geschaffen wird (PPP-Modell).“<sup>1</sup>

Das andere Dokument, worin PPP-Projekte erwähnt werden, ist der Entwicklungsplan des Wohnbaubereichs für die Jahre 2008-2013, wonach die Vision und der Hauptziel des Vorhabens darin bestehen, dass Anschaffung einer Wohnung für jeden Einwohner Estland zugänglich gemacht werden muß. Man ist bemüht, den bisherigen geringen Anteil von kommunalen und Privatwohnungen am ganzen Wohnungsfonds zu erhöhen. In diesem Zusammenhang wurde zum Ziel gesetzt, die Zahl von kommunalen Mietwohnungen bis zum Jahr 2013 um 6000 Einheiten zu erhöhen und im Rahmen von PPP 700 neue Wohnungen zu bauen.<sup>2</sup>

Die Tatsache, daß die Investitionen des öffentlichen Sektors merkbar gestiegen sind, weist auf das Bedürfnis nach Umsetzung unterschiedlicher Investitionsschemata und

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<sup>1</sup> Koalitionsvertrag der Estnischen Reformpartei, der Estnischen Zentralpartei und der Volksunion Estlands vom 2005. [www.valitsus.ee](http://www.valitsus.ee)

<sup>2</sup> Entwicklungsplan der Wohnungsbranche Estlands für 2008-2013. [www.mkm.ee](http://www.mkm.ee)

unter anderem nach Vergrößerung des Umfanges der PPP-Projekte hin. Als der Geldumfang aller öffentlicher Ausschreibungen in 2000 insgesamt 4,7 Milliarden EEK (300 Millionen EUR) betrug, dann war dieser Betrag im Jahr 2006 auf 22,4 Milliarden EEK (1,43 Milliarden EUR) gestiegen, d.h. um fast 5 Mal<sup>3</sup>. Im Jahr 2006 wurden von Kommunalverwaltungen fast genau so viele Investitionen getätigt (4 Milliarden EEK oder 255 Millionen EUR) wie vom Staat im Jahr 2000 insgesamt. Die Zahl von öffentlichen Ausschreibungen stieg in gleicher Periode von 1 800 bis auf 8 800. Im Jahr 2007 wurden 7 408 öffentliche Ausschreibungen mit einem Gesamtpreis von 21,6 Milliarden EEK (1,38 Milliarden EUR) umgesetzt. Dabei haben Bauarbeiten vom Gesamtumfang aller öffentlichen Ausschreibungen in Jahren 2006/2007 ganze 53% bzw. 39% ausgemacht.

In Tallinn wurde mit Planung von PPP-Projekten in 2001 angefangen, und das Hauptaugenmerk galt dem Ausbau des Straßen- bzw. Wegenetzes. In Rechtsakten der Stadt erschien das Stichwort PPP-Projekt in 2002, als von Tallinner Stadtversammlung die Haushaltsstrategie der Stadt Tallinn für die Jahre 2003-2005 genehmigt wurde.<sup>4</sup>

Unter anderem wurde als eines der Hauptziele der Haushaltspolitik der Stadt gesagt die Einnahmehasis der Stadt ist zu erweitern und zu vergrößern – zu für die Entwicklung der Stadt wichtigen Investitionen sind im größeren Umfang Mittel unterschiedlicher außer-städtischen Fonds und des privaten Sektors einzubeziehen. Die Umsetzung von PPP-Mitteln für die Finanzierung des Straßen- bzw. Wegenetzes gilt als eine der Prioritäten des städtischen Haushalts für 2003. Kurz nach Genehmigung der Haushaltsstrategie der Stadt wurde von Tallinner Stadtversammlung auch der Entwicklungsplan der größeren Straßen der Stadt<sup>5</sup>, worin bei zwei großen Objekten (a) Ausbau einer verkehrsbelasteten Kreuzung zur Kreuzung mit mehreren Ebenen und (b) Ausbau einer neuen Hauptstraße für Umleitung des Verkehrs um das Stadtzentrum, eine konkrete Umsetzung der Grundsätze der Zusammenarbeit des öffentlichen und privaten Sektors (PPP) vorgesehen wurde. Leider teilte das Finanzministerium darauf der Stadt mit, dass die PPP-Projekte zur Kreditbelastung der Stadt zu rechnen sind, und damit ist es für die Stadt unmöglich geworden, diese Objekte auf die geplante Art und Weise auszubauen. Und dies trotz der Tatsache, dass vom Gesetz her (bisher) keine Einschränkungen bezüglich PPP-Projekte festgelegt worden sind.

Von da an ist eines der größten finanzrechtlichen Streitprobleme zwischen der staatlichen Zentralmacht (Finanzministerium) und der Hauptstadt Tallinn die Frage gewesen, ob der Umfang von PPP zur gesetzlich eingeschränkten Kreditbelastung

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<sup>3</sup> Benutzt sind hier die Angaben bis die Wirtschaftskrise (ab Jahre 2008-2009), weil diese Zahlen zeigen (hoffentlich) besser die Investitionsmöglichkeiten für die Zukunft.

<sup>4</sup> Verordnung der Tallinner Stadtversammlung Nr. 36 vom 13. Juni 2002 "Haushaltsstrategie der Stadt Tallinn 2003-2005" [www.tallinn.andmevara.ee](http://www.tallinn.andmevara.ee)

<sup>5</sup> Verordnung der Tallinner Stadtversammlung Nr. 43 vom 20. Juni 2002 „Genehmigung der ersten und zweiten Etappe des Entwicklungsplanes des Tallinner Hauptstraßennetzes“ [www.tallinn.andmevara.ee](http://www.tallinn.andmevara.ee)

der Gemeinde oder der Stadt zu rechnen ist oder nicht? Gemäß Gesetz über Gemeinde- und Stadthaushalt darf eine Einheit der Kommunalverwaltung in Estland einen Kredit aufnehmen, dessen Höhe keine 60% des Haushaltes des laufenden Jahres dieser Einheit übersteigt und für deren Rückzahlung in keinem der Rückzahlungsjahre mehr als 20% des Haushaltes der Einheit benötigt werden (Gesetz ...). Der Haushalt der Stadt Tallinn für 2008 betrug mehr als 7 Milliarden EEK (447 Millionen EUR) und die ganze Kreditbelastung ca. 3 Milliarden EEK (192 Millionen EUR), was weniger als die Hälfte des Haushalts des betreffenden Jahres bildete<sup>6</sup>. Bisher sind die Kosten der PPP-Projekte von der Stadt Tallinn nur als jährliche Zahlungen an den Privatsektor berechnet worden, und nicht als Kredit. Gemäß neuen Regeln der Berechnung buchhalterischer Kreditverbindlichkeiten, die ab 2009 in Kraft treten, ist auch der Umfang der PPP-Projekte zu Schulden der Kommunalverwaltung zu rechnen (Partnerschaftsprojekte ...).

PPP-Projekte gelten in Estland als Auslöser von diametral entgegengesetzten Meinungen sowohl unter Politikern als auch in Medien. Einerseits ist zu lesen und zu hören, dass der öffentliche Sektor in Estland zukünftig mehr Investitionen und Know-how bräuchte, um effektiver über den Staat verwalten zu können. Über PPP könne der öffentliche Sektor die Innovationskapazität des Privatsektors ausnutzen, optimale Bau- und Nutzungskosten der Objekte gewährleisten, Aufgaben zwischen dem öffentlichen und privaten Sektor je nach ihrer Zuständigkeit verteilen, zur Entstehung der Konkurrenz beitragen, die Qualität der Dienstleistungen sichern und noch vieles mehr. Für den privaten Sektor sei PPP aber eine zusätzliche Möglichkeit für Geschäfte und Schaffung zusätzlicher Arbeitsplätze. Es gibt aber auch diametral entgegengesetzte Stellungnahmen. In der Presse sind Artikel gerade zu PPP-Projekten unter Überschriften „Tallinn ins Schuldgefängnis – wird gemacht“<sup>7</sup> oder „Partei vergoldet ihre Goldsponsoren“<sup>8</sup> usw. erschienen, in denen die PPP-Projekte der Hauptstadt kritisiert und die Behauptungen ausgesprochen werden, daß alle Ausschreibungen dieser Projekte von Unterstützern der in der Stadt regierenden Partei (der Estnischen Zentralpartei) gewonnen werden.

Im Artikel „PPP in Tallinn – Mythos und Wirklichkeit“<sup>9</sup> steht geschrieben, dass beim guten Management von PPP-Projekten sowohl Unternehmer als Stadtbevölkerung einen Nutzen davon ziehen werden. Beim schlechten Management das Ganze aber in der Regel so endet, dass die ganzen Kosten von der Stadt getragen und Einnahmen von Geschäftsleuten in ihre Tasche gesteckt werden. Gerade und vor allem Immobilienmarkt sollte ein besonderes Interesse für PPP-Projekte haben, weil ab 2008 ein gewisser Rückgang auf diesem Markt eingetreten ist, und dies für

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<sup>6</sup> Der Finanzminister bestätigte am 30. Mai 2008 vor dem Parlament, daß die Kreditbelastung von Tallinn in mit momentan gültigen Gesetzen vorgeschriebenen Grenzen liegt. Laut Angaben der Tallinner Stadtverwaltung betrug die Kreditbelastung der Stadt Ende 2007 49,4% und gemäß Haushaltsplanstrategie der Stadt sollte sich diese Zahl bis Ende 2012 auf 43,5% reduzieren.

<sup>7</sup> „Tallinn ins Schuldgefängnis – wird gemacht“, Tageszeitung „Eesti Päevaleht“, 30.04.2008

<sup>8</sup> „Partei vergoldet ihre Großsponsoren“, Wochenzeitung „Eesti Ekspress“, 05.07.2007

<sup>9</sup> „PPP in Tallinn – Mythos oder Wirklichkeit“, Wochenzeitung „Eesti Ekspress“, 05.07.2007

Unternehmen dieser Branche besonders schwer zu überleben ist, weil man bis dahin nur Früchte der extrem schnellen Wachstumsperiode genossen<sup>10</sup>. Natürlich muß man zugeben, daß die Firmen, die mit der Stadt (besonders mit der Hauptstadt) einen großen PPP-Projekt schließen, bestimmt ein glückliches Los gezogen haben. Für diese Firmen sind Geschäfte für eine längere Periode garantiert. Ein langfristiger Vertrag und Geldflüsse der Stadt mit ihren (niedrigen) Risiken sollten auch Privatpartner von der Attraktivität des Projektes, deren Notwendigkeit kaum ignoriert werden kann, überzeugen. Im Entwicklungsplan der Stadt Tallinn für die Jahre 2006-2015<sup>11</sup> wird bei Förderung der Zusammenarbeit mit dem Privatsektor eine Qualitätskontrolle über die Erfüllung der PPP-Projekte vorgeschrieben, um eine höhere Qualität der zu erweisenden Leistungen zu garantieren.

Das Verhalten seitens Medien zu PPP-Projekten der Kommunalverwaltungen ist in offensichtlicher Abhängigkeit davon, welche politische Kraft in betreffender Kommunalverwaltung an der Macht ist. So ist es in Tallinn ziemlich gewöhnlich, daß zur Koalition diese Parteien gehören, die im Parlament (*Riigikogu*) in Opposition sind. Und dementsprechend hat fast jede Aktivität der Tallinner Stadtverwaltung in Richtung Umsetzung der PPP-Projekte Warnungen seitens der Oppositionspolitiker mitgebracht, im Stil, dass Tallinn am Rande der Finanzkrise ist oder daß Tallinn sich tot leiht usw. Und dies trotz der Bestätigung des Finanzministers im Mai 2008, dass die Kreditbelastung von Tallinn durchaus in gesetzlichen Grenzen liegt (s. auch die Anmerkung unten). Der auf Staatshaushalt bezogene Streit zwischen staatlicher Zentralmacht und der Hauptstadt verschärfte sich ganz besonders im Winter 2008, als die Estnische Wirtschaft, die sich seit Ende der 1990-er schnell entwickelt hatte (Zuwachstempo vom BIP zum Teil sogar bis zu 11%), plötzlich in Depressionsperiode geriet. In diesem Zusammenhang wurde Tallinn wegen seiner großen Kreditaufnahmen und konsequenter Umsetzung der PPP-Projekte, u.a. wegen Einleitung neuer Projekte, scharfer Kritik unterzogen.

Im Mai 2008 wurde vom Rechnungshof dem Parlament der Bericht „Über Organisation von Ausschreibung für Bauvorhaben in Gemeinden und Städten“<sup>12</sup> vorgelegt, worin unter anderem bekannt gegeben wurde, dass im Fall von Partnerschaftsprojekten des öffentlichen und privaten Sektors das Gesetz über staatliche Ausschreibungen den Partnern breite Möglichkeiten zur selbständigen Deutung des Gesetzes gewährt, und dass diese Projekte deshalb für die Öffentlichkeit nicht unbedingt transparent sein sollen. Bei allen Finanzierungsschemata der Bauprojekte sollte die Kommunalverwaltung darauf achten, daß Gelder sparsam und zielgebunden benutzt werden, daß aus vorhandener Konkurrenz

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<sup>10</sup> Laut Angaben (2006) von Global Property Guide haben Immobilienpreise in Estland den höchsten Aufstieg (54%) in der ganzen Welt durchgemacht, es folgen Dänemark mit 23% und Norwegen mit 14% (s. Sulev Mäeltseemes. Wirtschaftlicher Erfolg und sozialer Preis. Ost-West Gegeninformationen. Nr. 4/2006, S. 23)

<sup>11</sup> Verordnung der Tallinner Stadtversammlung Nr. 64 vom 16. November 2006 „Änderung des Tallinner Entwicklungsplanes 2006-2015“

<sup>12</sup> Organisation von Bauausschreibungen in Gemeinden und Städten. Bericht des Rechnungshofes ans Parlament (Riigikogu) 2008. [www.riigikontroll.ee](http://www.riigikontroll.ee)



ausgegangen und daß das eventuell bestmögliche Verhältnis vom Preis und Qualität gewährleistet wird.

Auf die Notwendigkeit nach Ergänzung der mit PPP-Projekten verbundenen Anleitungen und Instruktionen weist gemäß Einschätzung des Rechnungshofes der Umstand hin, dass trotz der Tatsache, daß unterschiedliche Zusammenarbeitsprojekte des öffentlichen und privaten Sektors vom Finanzminister als Konzessionen gedeutet werden, sind Gemeinden und Städte bei Planung dieser Projekte doch nicht aus Anleitungen des Ministeriums ausgegangen. Erst im März 2008 wurde im Estnischen staatlichen Ausschreibungsregister die Mitteilung über Vergabe der ersten Konzession veröffentlicht.

Die in Estland bestehenden widersprüchlichen Meinungen zur Frage, was denn überhaupt als PPP-Projekt betrachtet werden kann, sind anscheinend in so mancher Hinsicht dadurch bedingt, dass PPP-Projekte nicht durch Gesetze geregelt werden. Und bestimmt kann auch nicht jede Zusammenarbeit zwischen öffentlichem und privatem Sektor bei Entwicklung der Infrastruktur als PPP-Projekt bezeichnet werden. Von der Bundes Task Force wird PPP definiert als „... *langfristig vertraglich geregelte Zusammenarbeit zwischen öffentlicher Hand und Privatwirtschaft, bei der die erforderlichen Ressourcen von den Partnern zum gegenseitigen Nutzen in einem gemeinsamen Organisationszusammenhang eingestellt und vorhandene Projektrisiken entsprechend der Risikomanagementkompetenz der Projektpartner optimal verteilt werden.*“ (Jacob, S. 121)

Die von Buchhaltungsarbeitsgruppe des Estnischen Finanzministeriums in 2006 ausgearbeitete Anleitung setzt folgende Grundsätze der PPP-Projekte fest (Partnerschaftsprojekte ...):

1. PPP-Projekte werden meistens in solchen Bereichen öffentlicher Dienste umgesetzt, die traditionell von Staat oder Kommunalverwaltung geregelt werden und für die große Startinvestitionen notwendig sind, wie z. B. Bau von Wegen bzw. Straßen, Brücken, Krankenhäusern, Schulen und Gefängnissen sowie ihr weiteres Betreiben während gemäß Vertrag festgesetzten Termine. Als Ziele der Umsetzung eines PPP-Projektes können Benutzung der Kompetenzen des privaten Sektors, Erhöhung der Qualität der Dienstleistung, Kostensparen, Verteilung von Risiken oder andere Gründe gelten.

2. Die Hauptfrage eines PPP-Projektes besteht darin, in welcher Bilanz (ob in der des öffentlichen oder privaten Sektors) das durch Einbeziehung des PPP-Projektes geschaffene Vermögen widerspiegelt werden muss. Das im Rahmen eines PPP-Projektes geschaffene Vermögen wird in der Bilanz dieser Einheit widerspiegelt, von der die hauptsächlichlichen, sich aus dem Vertrag des PPP-Projektes ergebenden Risiken getragen werden. Falls als Träger von hauptsächlichlichen, sich aus dem Vertrag des PPP-Projektes ergebenden Risiken der öffentliche Sektor gilt, werden PPP-Vermögen und PPP-Verbindlichkeiten in der Bilanz der entsprechenden Einheit des öffentlichen Sektors widerspiegelt, und im entgegengesetzten Fall in der Bilanz der Einheit des privaten Sektors. Für Einschätzung der Risiken eines PPP-Projektes ist

eine detaillierte Risikoanalyse durchzuführen. Bei Risikoeinschätzung müssen alle eventuellen Aspekte berücksichtigt werden. Als die wichtigsten Risiken gelten meistens:

- a) Baurisiko;
- b) Risiko der Benutzungsbereitschaft und
- c) Nachfragerisiko.

Wird der größte Teil vom Baurisiko von der Einheit des öffentlichen Sektors getragen, wird das PPP-Vermögen im allgemeinen Fall in der Bilanz der Einheit des öffentlichen Sektors widerspiegelt. In der Bilanz der Einheit des öffentlichen Sektors wird PPP-Vermögen in der Regel auch dann widerspiegelt, wenn dieser Sektor zwar keinen wesentlichen Teil vom Baurisiko trägt, aber das Risiko sowohl der Benutzungsbereitschaft und auch der Nachfrage zum Zuständigkeitsbereich des Sektors gehören.

Bei Einschätzung von Bau-, Benutzungsbereitschafts- und Nachfragerisiko müssen Bedeutungsstufe und Vorkommenswahrscheinlichkeit (oder der eventuelle Einfluss dieser Komponenten auf aus PPP-Projekten kommende zukünftige Geldflüsse) berücksichtigt werden. Größeres Augenmerk sollte diesen Risikokomponenten gelten, deren eventueller Einfluss auf sich aus PPP-Projekten ergebende Geldflüsse als größer einzuschätzen ist. Die Risikokomponenten, deren eventueller Einfluss auf Geldflüsse des ganzen PPP-Projektes unbedeutend oder deren Vorkommenswahrscheinlichkeit äußerst klein ist, sind auch bei Risikoanalyse mit kleinerem Anteil zu berücksichtigen.

3. PPP-Projekte unterscheiden sich von Pachtverträgen dadurch, dass außer Vergabe des Vermögens in Benutzung als eine der Vertragsbedingungen auch Erweisen von mit gleichem Vermögen verbundenen Dienstleistungen innerhalb von der Einheit des privaten Sektors vertragsmäßig festgelegter Zeit, gemäß entsprechendem Umfang und mit geforderter Qualität gilt. PPP-Projekte werden durch den Umstand charakterisiert, dass im Allgemeinen Ausbau oder Anschaffung eines für Zwecke des konkreten Projektes zu schaffenden Vermögens oder Rekonstruktion eines vorhandenen Vermögens durch den Partner des Privatsektors vorausgesetzt wird.

Zweifellos kann man sich mit dem ersten und dritten Prinzip einverstanden erklären. Doch muß darauf hingewiesen werden, daß die im zweiten Prinzip enthaltene Forderung, wonach das vom privaten Sektor errichtete Objekt in der Bilanz der Gemeinde oder der Stadt zu widerspiegeln ist, zweifellos hemmend auf die regionale Wirtschaftsentwicklung wirkt. Kommunalpolitiker (Gemeindeälteste) U. Arumäe hat im August 2008 sogar behauptet, daß dadurch sogar die Zusammenarbeit des öffentlichen Sektors mit dem privaten Sektor (PPP) ausgeschlossen wird.<sup>13</sup> Der Hauptgrund besteht darin, dass die Möglichkeiten der Kreditaufnahme abrupt eingeschränkt werden und wie schon erwähnt, der Umgang der PPP-Projekte ab 2009 innerhalb der Kreditbelastung der Gemeinde oder Stadt (in 20% und 60%)

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<sup>13</sup> Urmas Arumäe. Kommunalverwaltungen in Erwartung harter Zeiten. Zeitung der Partei Isamaa und ResPublica Liit, 7. August 2008

berechnet werden muß. Und von genauso wichtiger Bedeutung (vor allem bezüglich Tallinn, das PPP-Projekte bisher im größeren Umfang umgesetzt hat) ist die Frage über die rückwirkende Kraft dieser Forderung bezüglich der schon sich im Umsetzungsprozess befindenden PPP-Projekte?

Laut Autors dieses Artikels können ohne irgendwelche Zweifel als PPP-Projekte solche Vorhaben bezeichnet werden, wie z. B. die eingeleiteten Projekte der Renovierung der Tallinner allgemeinbildenden Schulen sowie die des Wohnungsbaus, wo man sich nicht nur auf Renovierung oder Bau beschränkt, sondern es folgt auch eine langfristige Instandhaltung und Wartung des Objektes innerhalb längerer Zeit.

Die Chancen von PPP im Bildungssektor hat in der Region Ingolstadt (Bundesrepublik Deutschland) Prof Harald Pechlaner mit seinen Kollegen analysiert. Sie schreiben (Bachinger, S. 139-155): *„Die häufigste Form von unternehmerischem Engagement im Bildungsbereich ist das Schulsponsoring. Hintergrund für die Entwicklung von PPP-Modellen ist der Umstand, daß ... aufgrund der Schwerpunktverlagerung staatlicher Pflichtaufgaben auf untere kommunale Ebenen zustande kommt. Auf der anderen Seite hat sich die öffentliche Einnahmesituation verschlechtert. Um ihren Aufgaben trotzdem auf ausreichendem Niveau nachkommen zu können und in manchen Fällen auch Spielraum für innovative Projekte zu haben, greifen Kommunen immer häufiger auf eine Kooperation mit der Privatwirtschaft zurück. Bringt man die so definierten Begriffe CSR<sup>14</sup> und PPP in Bezug zum Bildungssponsoring, so zeigt sich, daß unternehmerisches Engagement in Schulen sowohl CSR-orientiert (Unterstützung von Schulveranstaltungen) als auch PPP-zentriert (Sanierung eines Schulgebäudes) sein kann.“* Die Autoren kommen zur Schlußfolgerung (Bachinger, S. 161), daß die Zusammenarbeit zwischen Schule und Wirtschaft in der Region Ingolstadt durch vielfältige Weise gefördert werden könnte. Beide Seiten sind konzeptionell nicht weit voneinander entfernt. Beide bevorzugen Arrangements, die eher in Richtung PPP-Modell gehen und damit gekennzeichnet sind von einer langfristigen Zusammenarbeit, die auf oberster Ebene der Schule oder des Unternehmens koordiniert wird.

### **Die größten PPP-Projekte in Tallinn**

Bei Umsetzung von PPP-Projekten ist zu berücksichtigen, daß die Einheiten der Kommunalverwaltung über einen ausreichenden Umfang sozialwirtschaftlicher Dienstleistungen und *last but not least* über eine ausreichende Verwaltungskompetenz verfügen bildet<sup>15</sup>. Um es anschaulicher auszudrücken, ist es

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<sup>14</sup> Unter Corporate Social Responsibility (CSR) versteht man im Allgemeinen die Wahrnehmung einer gesellschaftlichen Verantwortung durch ein Unternehmen (Bachinger, S. 144)

<sup>15</sup> Als einen der wichtigsten Einflußfaktoren auf die Verwaltungskompetenz gilt zweifellos die Bevölkerungszahl der kommunalen Einheit. Davon sind abhängig sowohl die Höhe des lokalen Haushalts, die Möglichkeiten der Anstellung von zuständigen Beamten, Umsetzung von PPP als auch eigentlich der ganze Bedarf nach Investitionen überhaupt. Die Einheiten der

wichtig, daß der öffentliche Sektor nicht in die „Falle“ des privaten Sektors gerät. Da es in Estland bisher keine gesetzlichen PPP-Regulationen gegeben hat, ist es ganz besonders wichtig, zu gewährleisten, dass Kommunalbeamten und Politiker, die Schlußentscheidungen zu treffen haben, nicht Opfer der Desinformation des Privatsektors mit seinen tatkräftigen Juristen werden. In dem Zusammenhang sei erwähnt, daß sogar Tallinn mit seiner starken rechtswissenschaftlichen Kompetenz vor Ausnahme von PPP-Projekten juristische Gutachten bestellt hat.

Zu größten PPP-Projekten in Tallinn gehören das Projekt für Renovierung von allgemeinbildenden Schulen und das Projekt für den Bau von kommunalen Wohnhäusern, die auch schon eingeleitet worden sind. Bei Schulhäusern hat die Stadt sich zum Ziel gesetzt, innerhalb von einer maximal kurzen Zeit für Schüler eine moderne Lernumwelt und für Lehrer richtig motivierende Arbeitsbedingungen zu schaffen.

In Wohnungsbauwesen hat und hatte man mit einem Bedarf anderer Art zu tun – nämlich schnell und mit mäßigem Preis Mietwohnungen zu bauen.

Das größte PPP-Projekt, das unter Politikern und durch sie auch in Öffentlichkeit am meisten Aufsehen erregt hat, wurde 2006 zwischen Tallinner Stadtverwaltung und zwei Privatfirmen über Renovierung von allgemeinenbildenden Schulen der Hauptstadt und ihre spätere technische Instandhaltung vereinbart.

Von der Stadt wurde beschlossen, dieses PPP-Projekt umzusetzen, weil es eine Möglichkeit gibt: 1) die Renovierung von Schulen in Bedingungen eingeschränkter Finanz- und Verwaltungsressourcen zu beschleunigen; 2) die mit Renovierung und Verwaltung von Schulen verbundenen Handlungen und die größten Risiken wie z. B. das Finanzierungs-, Bau-, Verwaltungs-, Instandhaltungs- und andere Risiken, an professionelle Partner zu übertragen, von denen gewisse Risiken besser verwaltet werden können als von der Stadt; 3) die Renovierungs- und Verwaltungsarbeiten effektiver auszuführen als die Stadt es tun könnte, weil die Mehrheit der im Laufe der Lebensdauer des Projektes gemachten Kosten vom privaten Partner getragen werden und diese Kosten deshalb zeitlich besser geplant und ausgeglichen werden können.

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Kommunalverwaltungen in Estland sind relativ klein. In diesem Land mit einer Fläche von 45 000 km<sup>2</sup> und mit einer Einwohnerzahl von 1,35 Millionen Menschen gibt es 193 Gemeinden und 33 Städte (im Jahre 2010), also insgesamt 226 Einheiten von Kommunalverwaltungen. Die Hauptstadt Tallinn zählt 400 000 Einwohner (1/3 der Bevölkerungszahl des ganzen Landes). Die relative Bedeutung der Estnischen Hauptstadt an der Bevölkerungszahl gehört zu bedeutendsten auf europäischen Festland (nur in Lettland ist dieser Index noch höher). In der zweitgrößten Stadt von Estland (Tartu) gibt es 100 000 Einwohner. 80% aller Einheiten der Kommunalverwaltungen in Estland haben unter 5 000 Einwohner, und für Umsetzung von PPP-Projekten haben sie praktisch gar keine Perspektive. Mindestens zehn Jahre lang ist in Estland über die verwaltungs-territoriale Reform gesprochen worden. Ergebnisse (d.h. Zusammenschlüsse von Gemeinden und Städten) hat es aber relativ wenig gegeben.

Durch die Rolle der Stadt als Pächter und durch die Übertragung wesentlicher Risiken auf den privaten Partner bekommt die Stadt die Möglichkeit, die Erhöhung der Verschuldung der Stadt über die im Gesetz über den Haushalt der Gemeinden und Stadt vorgeschriebene Obergrenze zu vermeiden.

Zwecks Lösung komplizierter rechtlicher Fragen und unter anderem auch um eine Wiederholung der Bestreitung seitens des Finanzministeriums der PPP-Projekte auszuschließen, wie es 2002 beim Entwicklungsprojekt des Tallinner Straßennetzes der Fall war, wurden aus dem städtischen Haushalt dem Tallinner Bildungsamt 1,6 Millionen EEK (100 000 EUR) bereitgestellt für den Einkauf von Rechtshilfe und Finanzberatung im Zusammenhang mit Renovierung und Verwaltung der Schulen im Rahmen des PPP-Projektes.<sup>16</sup> Mit nachfolgendem Beschluß der Stadtversammlung<sup>17</sup> erhielten Privatfirmen das Recht auf Renovierung von insgesamt zehn Schulen und ihre Verpachtung an die Stadt für die nächsten 30 Jahre.

Um die Umfänge der Renovierungsarbeiten und ihre Stelle im städtischen Bildungssystem einschätzen zu können, muß erwähnt werden, daß es in Tallinn 55 kommunale Gymnasien (*ca.* 39 000 Schülern) gibt, in denen in Klassen 1-12 unterrichtet wird, und 11 im kommunalen Eigentum befindende Grundschulen (*ca.* 3 000 Schüler), wo in Klassen 1-9 unterrichtet wird<sup>18</sup>. Mit Ausnahme von einigen wenigen Schulen im Stadtzentrum, die schon vor 1940-er Jahren (vor sozialistischer Periode) gebaut wurden, stammt die absolute Mehrheit der Schulen aus der sowjetischen Zeit und ist, wie für diese Zeit üblich, von relativ schlechter Bauqualität. Obwohl viele dieser Schulen vor Jahrzehnten errichtet worden sind, d.h. während des extensiven Wachstums der Stadt in 1960-1970-er Jahren oder sogar früher, ist da bis zu letzten Jahren keine Grundrenovierung vorgenommen worden. In wieder selbständig gewordener Republik Estland hatten Kommunalverwaltungen, einschließlich der Stadt Tallinn, keine Mittel, um mit Sanierung dieser öfters stark amortisierter Gebäude anzufangen.

Um die Ergebnisse von PPP deutlicher zu machen, kann in diesem Zusammenhang erwähnt werden, dass allein im Herbst 2008 ganze 5 800 oder 15% aller Schüler der Tallinner Kommenschulen ihr Schuljahr in neurenovierten beginnen können.

Von Bedingungen der PPP-Projekte für Renovierung der Tallinner allgemeinbildenden Schulen können folgende wichtige Grundsätze hervorgehoben werden. Zu Gunsten als Ergebnis der von der Stadt durchgeführten öffentlichen Ausschreibung zum Projekt einbezogener Privatfirma wird ein entgeltliches und auf

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<sup>16</sup> Anordnung der Tallinner Stadtverwaltung Nr. 614-k vom 29. März 2006 über Bereitstellung von Mitteln an das Tallinner Bildungsamt für den Einkauf von Rechtshilfe und Finanzberatung im Zusammenhang mit Renovierung und Verwaltung der Schulen im Rahmen des PPP-Projektes.

<sup>17</sup> Beschluß der Tallinner Stadtversammlung Nr. 184 vom 1. Juni 2006 „Über die Renovierung und Verwaltung sowie Instandhaltung Tallinner Schulen auf Grund der PPP-Projekte“

<sup>18</sup> Neben kommunalen Schulen gibt es in Tallinn auch 11 allgemeinbildende Privatschulen mit insgesamt 2 200 Schülern, aber bei diesen Schulen handelt es sich in der Regel um neue oder innerhalb der letzten 10-15 Jahre renovierte Gebäude.

30 Jahre terminiertes Erbbaurecht bestellt, und für jede Schule wird ein separater Vertrag geschlossen. Die privatrechtliche Firma übernimmt als ihre Verpflichtung den wesentlichen Teil mit Renovierungsarbeiten des Schulgebäudes verbundenen Tätigkeiten (Beschaffung der Baugenehmigungen, Projektierung, Untersuchung vom Grund und Boden, Bauarbeiten). Zu Aufgaben der Privatfirma als Verpächter der Schule gehört Verwaltung des Schulgebäudes während der ganzen Vertragsperiode. Innerhalb dieser Zeit ist die Privatfirma verpflichtet, notwendige Renovierungsarbeiten durchzuführen und eine Aufbewahrung des Gebäudes im guten Zustand zu gewährleisten.

Die Privatfirma hat das Schulgebäude gegen wichtigste Risiken (Brand, Vandalismus, Naturkatastrophen) zu versichern und eine technische Überwachung in der Zeit, wenn das Gebäude nicht benutzt wird, zu organisieren. Auch ist die Firma verpflichtet, die Vorschriften für Instandhaltung, einschließlich der Reinigung und Aufräumung der Gebäude zusammenzustellen und diese der Stadt bekannt zu geben. Zum Zuständigkeitsbereich der Privatfirma gehört auch Pflege des außerschulischen Territoriums, mit Ausnahme der Schneeräumung auf Stadien. Die Stadt nimmt die Schulen im deren vollen Umfang zur Pacht und organisiert bei Bedarf ihre Unterpacht an Dritte. Im PPP-Projekt werden hauptsächlich drei Typen von Gebühren vorgesehen: Pachtgebühren, Nebenkosten und Gebühren im Zusammenhang mit eigentümerbezogenen Verpflichtungen (Gebühr für Erbbaurecht und Grundsteuer). Von der Stadt wird an die Privatfirma monatlich Miete bezahlt, deren Änderungen an Verbraucher-Preisindex gebunden ist. Die Stadt hat auch alle Nebenkosten zu zahlen und Verträge mit Trägern kommunaler Dienstleistungen abgeschlossen. Von der Stadt werden auch die Risiken im Zusammenhang mit eventuellen Änderungen des Wechselkurses vom Euro und Änderungen vom Verbraucherpreisindex übernommen. Nach Auslaufen des Erbbaurechtes wird das Schulgebäude ins Eigentum der Stadt übertragen und die Stadt hat der Privatfirma eine Entschädigung in einem Betrag, der sich als Ergebnis des bei Beendigung des Vertrags (Auslaufen des Erbbaurechts) durchzuführenden Gutachtens herausstellt, zu bezahlen. Schulen müssen sich während der ganzen Vertragsperiode in einem für ihre Benutzung geeigneten Zustand befinden. Die Stadt ist berechtigt, das Erbbaurecht von der Privatfirma vor Ablauf der Frist zurückzukaufen.

Das zweite große Tallinner PPP-Projekt befasst sich mit Wohnungsbau. Als Hintergrund und Erläuterung der Notwendigkeit dieses Projektes muß erwähnt werden, dass im Laufe der Wohnungsreform der 1990-er Jahre in Estland und darunter in Tallinn fast alle Wohnungen privatisiert wurden. Damit wurde Estland im Vergleich zu anderen Ländern Europas zu einem der Länder, die einen sehr hohen Anteil vom Privatsektor (über 90%) in Wohnwirtschaft haben. Außerdem kamen auch sog. Zwangsmieter in den an ehemalige Eigentümer zurückgegebenen Wohnhäusern hinzu, mit denen der Eigentümer den Mietvertrag relativ schnell auflösen konnte. In Tallinn gab es 5 000 Familien, die als Ergebnis der Restitution gefährdet waren, auf Straße gesetzt zu werden. Es gab praktisch keine kommunalen Wohnungen. Bei den wenigen vorhandenen kommunalen Wohnungen handelte es sich um in den Jahren 1945-1990 gebaute und aus unterschiedlichen Gründen nicht privatisierte Wohnungen. So bildete die im Jahr 2005 im städtischen Eigentum

befindliche Wohnfläche in Tallinn nur 2,5% der ganzen in der Stadt vorhandenen Wohnfläche. In den ersten zehn Jahren nach Wiederherstellung der Selbständigkeit wurde nirgendwo, weder in Tallinn noch woanders, eine Kommunalwohnung gebaut. Erst 2002 wurde von Tallinner Stadtversammlung das erste Programm des kommunalen Wohnungsbaus „5 000 Wohnungen in Tallinn“ verabschiedet.<sup>19</sup>

Wie die ganze Wirtschaftspolitik Estlands gilt auch hiesige Wohnpolitik als äußerst liberal, und dementsprechend dominieren hier Mechanismen des freien Marktes, d.h. daß für viele Menschen (Bevölkerungsgruppen) die Möglichkeiten der Anschaffung einer Wohnung trotz dem schnellen Wachstum in der Wohnungsbaubranche sich sogar verschlechtern haben. Vor allem sind davon betroffen junge Familien und aus dem Kommunalhaushalt bezahlte Lehrer, Kulturarbeiter usw., deren Vermögensstand und Einnahmen es nicht ermöglichen, sich auf freiem Markt eine Wohnung anzuschaffen oder zu mieten. Um diesen Bevölkerungskategorien Wohnungen bereitzustellen, wurde von Tallinner Stadtversammlung am 6. Oktober 2005 das Wohnbauprogramm „Jeder jungen Familie eigenes Heim“<sup>20</sup> eingeleitet und am 12. Juni 2008 das zweite Tallinner Wohnbauprogramm<sup>21</sup> verabschiedet. Im Rahmen des PPP-Projektes „Jeder jungen Familie eigenes Heim“ werden in einem der in der sowjetischen Zeit entstandenen Wohnbezirke noch weitere 650 Wohnungen gebaut und diese für 30 Jahre an die Stadt verpachtet. Die Stadt hat ihrerseits dort einige Kommunikationen auszubauen und den Eingang der Mietgebühren zu sichern. Gemäß Haushaltsstrategie kostet dieses Projekt der Stadt um die 1,2 Milliarden EEK (77 Millionen EUR).

Mit dem PPP-Projekt der Wohnwirtschaft ist Schaffung des Systems für den Bau von privaten Wohnungen und ihrer Vermietung eingeleitet worden. Es handelt sich um Wohnungen, in denen alle direkten Kosten durch Mietpreise gedeckt werden. Mit so einem System werden im Vergleich zu Marktmieten niedrigere Mietpreise erreicht, und dies vor allem durch folgende Maßnahmen:

- die Stadt kann im Vergleich zu einer Privatfirma Kredite für beträchtlich längere Periode aufnehmen und auch mit niedrigeren Kreditzinsen;
- in Mietpreisen ist weder der Entwicklungsgewinn noch der spekulative Preis für Grund und Boden enthalten (bei Berechnung des städtischen Mietpreises wird Grundlage für den Preis vom Grund und Boden dessen Besteuerungspreis genommen);
- durch langfristige Bauprogramme werden niedrigere Baukosten gewährleistet;
- durch langfristige Bauprogramme werden niedrigere Baukosten gewährleistet.

Eine Festlegung von diesen Kosten ist bei PPP-Projekten zweifellos kompliziert und auch umstritten, vor allem wegen der Tatsache, dass zukünftige Preise für

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<sup>19</sup> Verordnung der Tallinner Stadtversammlung Nr 175 vom 18. April 2002 „Tallinner Wohnbauprogramm 5000 Wohnungen in Tallinn“

<sup>20</sup> Beschluß der Tallinner Stadtversammlung Nr. 253 vom 6. Oktober 2005 Initiierung des Wohnbauprogramms „Jeder jungen Familie eigenes Heim“

<sup>21</sup> Beschluß der Tallinner Stadtversammlung Nr. 116 vom 12. Juni 2008 „Genehmigung des zweiten Tallinner Wohnbauprogramms“

Dienstleistungen (Benutzungskosten) mit dem heutigen Stand der Dinge ganz schwer vorauszusagen sind. Dieser Umstand bietet für Kritiker dieser Projekte gute Chancen. Das zweite wichtige Argument für Kritiker der Projekte bezieht sich auf die schon erwähnte ab 2009 in Kraft tretende Änderung, wonach der Umfang der PPP-Projekte zur Kreditbelastung der Kommunalverwaltung gerechnet wird. Gemäß neuer Regelung sollte Tallinn den Gesamtbetrag der an Privatfirmen für den Bau von Schulen und Kommunalwohnungen geleisteten Zahlungen an eigene Darlehen hinzufügen.

Nach dieser Formel können wir eine vereinfachte Berechnung machen, wonach Tallinn nur wegen vorhandener PPP-Projekte seiner bisherigen Kreditbelastung, die 3 Milliarden EEK (172 Millionen EUR) beträgt, noch weitere mindestens 7-8 Milliarden EEK (440-510 Millionen EUR) hinzufügen muss. In diesem Fall würde die Kreditbelastung von Tallinn anstatt der jetzigen 45% des Haushaltes ganze 150% ausmachen. Aber wie schon oben erwähnt, ist die rückwirkende Kraft der ab 2009 in Kraft tretender Vorschrift fraglich, und bezüglich dieser Frage ist auch von Estnischen Rechtskanzler, dessen Aufgabe es ist, Aufsicht über Rechtsakten auszuüben und Verfassungsmäßigkeit der verabschiedeten Rechtsakten zu überprüfen, keine Antwort gekommen. Inanspruchnahme neuer PPP-Projekte wird aber für Tallinn bald in jedem Fall praktisch unmöglich sein, obwohl die bisher umgesetzte Zusammenarbeit zwischen dem öffentlichen und privaten Sektor erfolgreich gewesen ist.

In diesem Zusammenhang ist es gar nicht bedeutungslos zu erwähnen, daß Tallinn als die einzige Einheit der Kommunalverwaltungen Estlands ist, die sich auch internationale Einschätzung (*Reiting*) eingeholt hat. Gemäß Beurteilung der Agentur *Moody's* ist die Kreditbelastung von Tallinn mäßig und die Struktur vom Kreditportfolio gut. Als Kritik wurde von der Agentur die Anmerkung gemacht, daß die Kostenseite der Stadt nicht flexibel genug ist. Und diese Feststellung muß wirklich akzeptiert werden, obwohl Einnahmequellen von Kommunalverwaltungen nur durch Gesetze festgelegt werden. Die Einnahmenbasis einer estnischen Kommunalverwaltung ist stark auf Lohnsteuer konzentriert, weil 11,4% dieser Einnahmen (in 2010 beträgt der Lohnsteuersatz 21%) in den Haushalt der Kommunalverwaltung laufen. Im ganzen Land bildet es durchschnittlich mehr als 90% aller Steuereinnahmen der Kommunalverwaltungen. Kommunalen Selbstverwaltungen ist kaum Möglichkeit gegeben, Steuersätze zu ändern. Die einzige Ausnahme ist Grundsteuer, die 5% von Einnahmen des lokalen Haushalts bildet und bei der die lokale Abgeordnetenversammlung das Recht hat, den Steuersatz in der Spanne 0,1-2,5% vom Preis vom Grund und Boden zu ändern. Lokale Steuern, die als finanzwirtschaftliche Drehscheibe für die Kommunalverwaltung gelten könnten, bilden in Estland nur 1% von allen Steuereinnahmen lokaler Haushalte, und damit ist dieser Anteil einer der niedrigsten unter europäischen Ländern, was auch in Berichten des Europäischen Rates erwähnt worden ist.



## Zusammenfassung

Die Einheiten der Kommunalverwaltungen sind gezwungen, bei PPP-Projekten nach Hilfe zu suchen, unter anderem wegen der Tatsache, daß von staatlicher Zentralmacht den Kommunalverwaltungen immer weitere Aufgaben auferlegt werden, die nicht aus dem Staatshaushalt finanziert werden. Und dies trotz der Tatsache, daß gemäß Grundgesetz Estlands auf Kommunalverwaltungen auferlegte Aufgaben vom Staatshaushalt zu finanzieren sind. Die Einheiten der Kommunalverwaltungen müssen mit dem privaten Sektor noch viel mehr Zusammenarbeit leisten, wenn sie sich vorgenommen haben, auf freiwilliger Initiative entstandene Aufgaben zu lösen und in der Stadt oder Gemeinde Infrastruktur fürs Sporttreiben oder Freizeitgestaltung zu entwickeln. Einmalige PPP-Projekte oder Projekte vom kleineren Umfang sind für diese Zwecke auch außerhalb Tallinns umgesetzt worden. So wurde z. B. in der Stadt Haapsalu von der Stadtverwaltung in Zusammenarbeit mit dem privaten Sektor in 2003 der Wasserpark mit Schwimmhalle mit einem 25-Meter-Becken gebaut; von der Stadtverwaltung Rakvere in 2004 ein Sportzentrum mit 2 400 Sitzplätzen errichtet, wo auch Konzerte veranstaltet werden können; die Stadtverwaltung Pärnu war Initiator für den Bau der Sporthalle mit einer Fläche von 3 300 m<sup>2</sup> in 2006 usw.<sup>22</sup>

Damit sozialwirtschaftliche Dienstleistungen auf eine effektivere Art und Weise und mit höherer Qualität erwiesen und darunter auch PPP-Projekte umgesetzt werden könnten, müssten die Einheiten der Kommunalverwaltungen in Estland entweder sich zu einem Zusammenschluß entscheiden oder Zusammenarbeit miteinander leisten, doch sind bei diesen beiden Prozessen bisher nur bescheidene Fortschritte gemacht worden. Außerdem kann man hier wohl behaupten, dass falls ab 2009 die Umfänge der PPP-Projekte zur Kreditbelastung der Kommunalverwaltung gerechnet werden müssen, die Zusammenarbeit von Gemeinden und Städten in diesem Bereich kaum weiter möglich sein wird.

Zusammenfassend kann gesagt werden, daß PPP-Projekte in Estland erst einige Jahre lang umgesetzt worden sind, und es nur zwecks Renovierung der Objekte sozialer Infrastruktur (Schulgebäude) oder Bautätigkeit (Wohnhäuser, Sportanlagen) gemacht worden ist. Obwohl PPP-Projekte auch für Entwicklung technischer Infrastruktur (des Straßennetzes) geplant worden sind, sind sie bisher nicht umgesetzt worden. Die bisherigen PPP-Projekte haben sich auf Tallinn konzentriert, und einer der Gründe dafür besteht darin, dass Tallinn im Vergleich zu anderen Städten über ein größeres Potential für Verwaltung und Finanzierung komplizierter PPP-Projekte verfügt. Die Umsetzung von PPP-Projekten ist wegen Fehlens staatlicher Regulationen bisher erschwert gewesen. Gleichzeitig besteht auch die Gefahr, dass die ab 2009 in Kraft tretende diesbezügliche Regulation, wonach die Umfänge der PPP-Projekte zur Kreditbelastung der Kommunalverwaltung gerechnet werden, eine hindernde Wirkung auch auf die in Tallinn sich erst im Anfangsphase befindende Zusammenarbeit zwischen dem öffentlichen und privaten Sektor haben wird.

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<sup>22</sup> Public Private Partnership Projects. <http://english.yit.ee>

Eurostat teilt die Risiken in die Kategorien Baurisiko, Ausfallrisiko und Nachfragerisiko ein. Diese Tatsache darf nicht ungeachtet bleiben. Zusammenfassend empfiehlt Eurostat, Vermögenswerte, die im Rahmen von PPP-Projekten entstehen, nicht als Vermögenswerte des Staates zu klassifizieren und folglich nicht in der Bilanz des Sektors des Staat zu verbuchen, wenn der private Partner sowohl das Baurisiko als auch das Ausfalls- oder das Nachfragerisiko trägt. Wenn das Baurisiko vom Staat (der Stadt – S.M.) getragen wird oder wenn der private Partner nur das Baurisiko und kein anderes Risiko trägt, so werden die Vermögenswerte dem öffentlichen Partner zugerechnet. Damit verbunden sind negative Auswirkungen für das Budgetdefizit und den Schuldenstand. (Promberger, S. 214-216)

Die Tallinner Stadtverwaltung unterbreitete im August 2008 der Stadtversammlung den Vorschlag<sup>23</sup>, sich an den Obersten Gerichtshof zu wenden, um die gemachten und ab 1. Januar 2009 in Kraft tretenden Änderungen im Buchhaltungsgesetz und in anderen Rechtsakten der Buchführung (vor allem die Änderungen in der Instruktion der Buchhaltungsarbeitsgruppe beim Finanzministerium „*Konzessionsvereinbarungen der Dienstleistungen*“) als nichtig zu erklären, „weil sie im Widerspruch zu verfassungsmäßigen Garantien der Kommunalverwaltungen und Prinzipien der Rechtsklarheit stehen“. Im Fall der Umsetzung dieser Grundsätze werden die Möglichkeiten der Kommunalverwaltungen, sich an PPP-Projekten zu beteiligen, eingeschränkt. Eine rückwirkende Anpassung entsprechender Regulationen wird die Situation für Kommunalverwaltungen äußerst kompliziert machen. Gemäß Tallinner Stadtverwaltung wird das Recht der Kommunalverwaltung auf Umsetzung eigener Entwicklungspläne durch Partnerschaftsprojekte des öffentlichen und privaten Sektors und dementsprechend das Recht auf die Wahl einer passenderen und effektiveren Art und Weise zwecks Erfüllung kommunaler Aufgaben durch die neue Ordnung wesentlich eingeschränkt.

Nach dem Beschluß des Obersten Gerichtshofes (3-4-1-14-08) vom 14. Oktober 2008 wurde ungültig und verfassungswidrig bestätigt § 11 (%) der Verordnung des Finanzministers (Nr 105, vom 11. Dezember 2003). Aber sehr viele mit den PPP-Projekten verbundenen finanzjuridischen Probleme sind nicht gelöst.

Eine interessante Frage „was bedeutet PPP?“ stellt Michael Wübbels (Wübbels, S. 436) – Public Private Partnership oder Public Public Partnership?

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<sup>23</sup> Tallinn verlangt Aufhebung von einschränkenden Buchhaltungsregeln.  
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# THE EFFECT OF SOCIAL CAPITAL ON INVESTMENTS: EVIDENCE FROM EUROPE<sup>1</sup>

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## Abstract

The purpose of the current paper is to investigate empirically the effect of social capital on investments as a key production factor. Theoretically, investments are expected to be higher in societies where there is more social capital between economic agents. Based on the data from World Values Survey, ten components of social capital are considered as factors of investments. Although the regression results are rather mixed, it can be generalised that components related to trust and norms dominate as predictors of overall investment activity, while networks have some effect only for foreign investments. Additionally, it appeared that the relationship between social capital and investments is similar in democratic Western European countries and Central and Eastern European countries with communist background.

**Keywords:** social capital, economic growth, investments, European countries

**JEL Classification:** A13, O11, O16, O52

## Introduction

Investments into physical capital are considered to be one of the most important prerequisites for economic growth and development. However, empirical studies about the differences in the levels of income between the peoples and nations show that these enormous differences cannot be fully explained by the traditional capital-based theory of economic growth (e.g. Solow 1956). During the times, alternative additional explanations for development differences are provided, including differences in human capital endowment (Lucas 1988; Romer 1990), institutional quality (Olson 1982; North 1990) and lately also social capital (Knack and Keefer 1997). The following empirical work has proved that human capital has strong explanatory power in growth regressions. However, individuals and their human capital do not exist in isolation – instead, the value of the abilities and skills of individuals depend on the social and institutional context within which they are embedded (Schuller 2000).

The current paper concentrates specifically on social capital as a possible new development factor. A key question for a convincing operationalisation of social capital in the context of economic development is whether the role of social capital in development processes is most plausibly seen as a separate key production factor

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<sup>1</sup> The research leading to these results has received funding from the European Community's Seventh Framework Programme (FP7/2007-2013) under grant agreement n° 216813.

similarly to physical or human capital (e.g. Knorringa and Staveren 2005), or whether social capital influences the accumulation and effectiveness of other production factors. For now, the dominating view in the literature is that the latter perception is more plausible and useful. As such, social capital is expected also to work indirectly via interactions with other growth factors like human capital, physical investment and institutional regulations, all of which tend to make a greater contribution to economic growth in societies with more social capital (Whiteley 2000).

The purpose of the current paper is to investigate empirically the effect of social capital on investments as a key production factor. Another sub-task of the paper is to find out whether the relations between social capital and investments differ between Western European and Central and Eastern European countries. Such a comparative perspective is taken because much of the development problems – including lack of investments – of Eastern European transition countries can be seen as a deterioration of the rules, norms and trust (including institutional trust), i.e. social capital. So the question is, whether the possible increase in social capital near the levels of Western Europe would help to equally increase investments and welfare levels in post-communist countries, or are these mechanisms different in Central and Eastern European countries.

Rest of the paper is structured as follows. The first section presents shortly theoretical background about the nature of social capital and its relations with economic growth and investments. The second section introduces data and methodology. The third section comprises empirical analysis, followed by discussion of the results. Final conclusions and recommendations for future research are given in section five.

## **1. Theoretical background**

Social capital, in its broadest sense, refers to internal social and cultural coherence of society, the trust, norms and values that govern interactions among people, and the networks and institutions in which they are embedded. Hence, social capital is a multifaceted phenomenon, which can be studied both at the individual or aggregate (community, regional, national) level. At the individual level, social capital has been seen as a resource embedded in the social structure, which is useful for achieving personal aims like higher reputation, power and material welfare (e.g. Bourdieu 1980; Coleman 1988, 1990; Adler and Kwon 2002). At the aggregate level, social capital is considered mostly as a collective resource and public good, which yields the community or nation as a whole through democratisation, higher effectiveness of the governance and faster economic growth (Putnam *et al.* 1993, 2000; Fukuyama 1995). It can be generalised that both at individual and national level, social capital in the form of networks constitutes a powerful information channel, while trust and norms can help to discourage opportunistic behaviour in the presence of risk and uncertainty.

The theoretical literature mostly agrees that social capital consists of different components, which are more or less interrelated. The elements of social interaction can be divided into two parts: structural aspect, which facilitates social interaction, and cognitive aspect, which predisposes people to act in a socially beneficial way (Hjöllund and Svendsen 2000, Stolle 2004). The structural aspect includes civic and social participation, while the cognitive aspect contains different types of trust and civic norms, also referred to as trustworthiness. Although there has been some inconsistency concerning the relative importance of the cognitive and structural aspects of social capital, it could be assumed that these two sides of the concept work interactively and are mutually reinforcing (Brehm and Rahn 1997). For example, informal communication teaches cooperative behaviour with strangers in order to achieve shared objectives, and the importance of common norms and related sanctions necessary to prevent opportunistic behaviour (Putnam 2000). Another important outcome of being involved in different types of networks is that personal interaction generates relatively inexpensive and reliable information about trustworthiness of other actors, making thus trusting behaviour less risky (*Ibid.*). On the other hand, pre-existing generalised, diffused interpersonal trust indicates the readiness of an actor to enter into communication and cooperation with unknown people (Stolle 1998; Inglehart 1999; Delhey and Newton 2005). Based on these relationships, it could be shortly summarised that social interaction requires communication skills and trust, which, in turn, tend to increase through interpersonal collaboration. Therefore, various dimensions of social capital should be taken as complements, which all are related to the same overall concept of social capital.

When analysing the economic effects of social capital, it is suggested that different components of social capital affect different aspects of development differently, and that these effects could work through different channels. The theoretical literature highlights three channels through which the importance of social capital in economy and society as a whole appears: 1) social capital helps to regulate the allocation, 2) social capital helps to solve collective action problems by facilitating cooperation, and 3) it reduces transaction costs and thus increases the efficiency of market relations. Regarding the effect of social capital on investments, the last impact channel seems to be most important. The mechanism leading to lower transaction costs could be described as follows (Putnam *et al.* 1993): higher trust and cooperative behaviour means lower need for state regulations and legal enforcement of agreements, social networks mediate useful information about the trustworthiness of possible business partners, and civic norms effectively constrain opportunism. Altogether, the costs of monitoring and enforcing contracts are likely to be lower in the presence of social capital, thus leaving more resources (time and money) for real productive activities.

More specifically, investments represent the type of economic activities that require some agents to rely on the future actions of others, which are accomplished at lower cost in higher-trust environments (Putnam *et al.* 1003; Whiteley 2000). For example, savings and investments (both domestic and foreign) decisions rely on assurances given by governments or banks that they will not expropriate these assets (Moe 1984; Knack and Keefer 1997). In this sense, higher level of trust reinforces the

overall investment climate in the economy (Hjerppe 2000), meaning that society will be less risk-averse and thus produces greater incentives to invest in both physical and human capital. Trust and networks are especially important for more risky investments into innovations in high-tech industries, which is often dependent on the informal exchange of technological information and property rights (Putnam *et al.* 1993; Fukuyama 2000). Additionally, interpersonal trust can facilitate investment through informal credit markets, if there is no well-developed formal system of financial intermediation, or where lack of assets limits access to bank credits (Knack and Keefer 1997). As such, interpersonal trust can be seen as an imperfect substitute for government-backed property rights or contract enforcement, which becomes especially important if governments are unable to provide them. Lowering transaction costs becomes also especially important in the globalizing world where economic transactions are increasingly taking place among unknown members with different cultural backgrounds.

It could be suggested that investors' motives are mostly the same in different countries (i.e. WE and CEE country groups) – to hold acceptable balance between risks and benefits. Although the overall investment potential is expected to be higher in transition countries (simply due to lower endowment with physical capital and related higher marginal productivity), it is not justified to believe that this is related to differences in social capital. Based on this, its main proposition behind the following empirical analysis is that social capital has a positive effect on investments similarly in WE and CEE countries.

## **2. Data and methodology**

Following empirical analysis covers 14 countries from Central and Eastern Europe (CEE) and 17 countries from Western Europe (WE).<sup>2</sup> Individual-level data about social capital were obtained from the World Values Survey (WVS) round four and refer mostly to year 1999, altogether 29 initial indicators were extracted on the basis of theoretical considerations and data availability. National-level data of investments and other development factors were taken from the World Development Indicators (WDI) database and Kaufmann *et al.* (2008), covering the period over 2000-2006. Altogether, the initial individual-level sample included 21699 observations for WE and 17220 observations for CEE countries, while the pooled sample at national level had 31 observations.

As the available social capital data did not enable dynamic analysis, statistical methods that are applicable for cross-sectional datasets were used. First, in order to clarify the structure of social capital, an exploratory factor analysis was implemented. This method enables to group a larger number of observed and often

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<sup>2</sup> Countries included in empirical analysis are Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Portugal Spain, Sweden and Great Britain from Western Europe, and Bulgaria, Belarus, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Russian Federation, Slovakia, Slovenia and Ukraine from Central and Eastern Europe.

correlated variables into a smaller number of uncorrelated factors. Obtained factors were next re-estimated with confirmatory factor analysis in order to obtain more clear and distinct components of social capital, which were subsequently used as independent variables (regressors) in regression analysis. Multiple OLS regression models were used for investigating the relations between social capital components and different investment indicators. More specifically (and differently from other similar studies where only investments' share of GDP has been considered), the following alternative indicators were used to measure investments as dependent variables: increase in cross capital formation (CAP), cross capital formation and cross fixed capital formation shares of GDP (CAPGDP and CAPFGDP), gross domestic savings as % of GDP (SAVDOM), and foreign direct investments as % of GDP (FDIGDP). In addition to social capital components as basic independent variables, human capital indicators (SEC, TERT), economic openness (TRADE), institutional quality (GOV) and income level (GDP0) were used as control variables in some model specifications (see Appendix 1 for measurement details).

In order to find out possible mean differences in social capital and investment levels between CEE and WE country groups, t-test was applied. Further, as small number of observations at national level did not enable separate analysis of the effect of social capital on investments in WE and CEE subsamples, the possible differences between country groups were tested with two alternative methods – transition dummy and Chow test. Transition dummy for CEE countries was expected to capture wide-range differences in initial conditions and structural characteristics between the two country groups. Chow test enabled to determine whether the coefficients in a linear regression model are the same in WE and CEE sub-samples.

### **3. Descriptive statistics**

Current section introduces latent variables of social capital and presents comparative statistics of the analysed indicators in CEE and WE subsamples. According to theoretical literature, the concept of social capital could be better characterised by its dimensions rather than individual variables. Therefore, the exploratory factor analysis<sup>3</sup> was conducted in order to capture all the information of the initial 29 individual social capital indicators into smaller number of latent variables. To decide the number of factors, first, the Kaiser criterion was used: only the factors with eigenvalue greater than 1 were retained. This method resulted in nine factors which explain 62.44% of the total variance of initial social capital indicators. The KMO test statistic was 0.777, which shows that the factor solution is stable. However, general trust as a core component of social capital did not load into any factor. In order to form clearer basis for regression analysis, social capital components were

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<sup>3</sup> This analysis was done on the basis of pooled sample of individual-level social capital data, using the principal components method with equamax rotation. In order to test the possible differences of the social capital structure in CEE and WE countries, the exploratory factor analysis was repeated separately for CEE and WE subsamples, with basically the same results. However, for the reason of space, the detailed results of exploratory factor analysis are not presented in the paper (these are available on request from the author).



next re-estimated using confirmatory factor analysis. The results are presented in Appendix 2. General trust is included into the following analysis separately with its standardised value. As a summary of factor analysis, Table 1 presents the abbreviations of obtained factors of social capital which are used throughout the paper, together with a short description of their content.

**Table 1.** Content and abbreviations of social capital factors

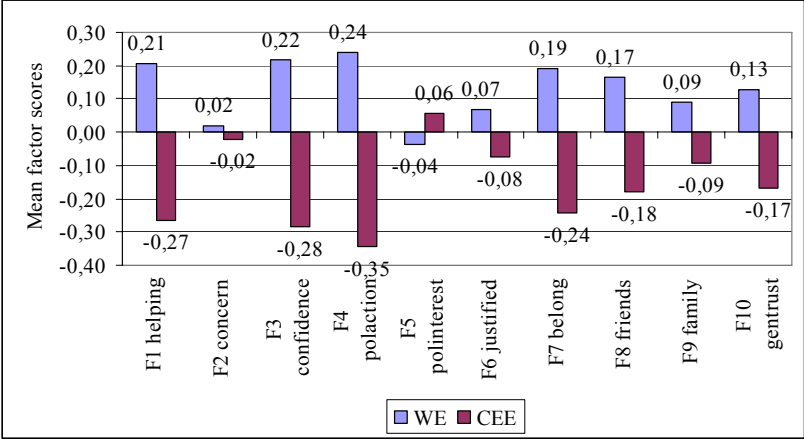
Abbreviation	Content of the factors
F1 helping	Preparedness to help others who are different from yourself
F2 concern	Concern about other people in the community
F3 confidence	Confidence in institutions (institutional trust)
F4 polaction	Real participation in political actions
F5 polinterest	Interest in political matters
F6 justified	Importance of following social norms
F7 belong	Participation in voluntary organisations (formal networks)
F8 friends	Socialising with friends and colleagues
F9 family	Importance of family relations
F10 gentrust <sup>4</sup>	Generalised trust towards unknown others

Source: Compiled by the author.

Summary statistics for the comparison of the components of social capital is given in Appendix 4, which presents the means, standard deviations and t-test of the factor scores for CEE and WE countries. The comparison of the mean factor scores (see also Figure 1) indicates remarkable differences in the levels of social capital between the two country groups. The t-test confirms that majority of the differences in the mean values are statistically significant ( $p \leq 0.05$ ), except in case of F2 concern, F5 polinterest, F6 justified and F9 family. In most cases, the level of social capital components is expectedly higher in WE countries. Generally, it has been suggested that the main reason for the low levels of social capital in CEE countries is related to the legacy of communist past, post-communist transformation processes and backwardness in social development (Uslaner 2003). From Figure 1 it can be seen that the largest differences in the favor of WE countries appear in the factors describing confidence in institutions, readiness to take political action, belonging to voluntary organisations and preparedness to help people from different social groups. These results indicate the overall underdevelopment of civil society in Central and Eastern European countries. Still, interest in politics is on average higher in CEE countries – which is rather logical, as transformation produces (political) instability which affects the welfare, and people want to be informed about the development in these fields. Also, the differences in the means of informal network indicators are also relatively small, showing that informal socialising, especially with close family does not depend so much on (former) social order or development level.

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<sup>4</sup> Although F10 gentrust is not a result of factor analysis, it is marked in a similar way with other social capital components for ensuring better comparability.



**Figure 1.** Comparison of the mean factor scores of social capital by country groups.

As regards investment indicators, Appendix 4 indicates that capital growth is faster and average gross capital formation is higher in CEE countries, as compared to WE countries. Also, the t-test shows that the differences in the mean values of these indicators are statistically significant ( $p \leq 0.05$ ). On the other hand, average relative levels of FDI and domestic savings are slightly higher in WE subsample. However, in case of these indicators the mean differences by country groups were insignificant.

#### 4. Regression results and discussion

The following regression analysis investigates the possible indirect effect of social capital on economic growth through encouraging investments. Five alternative investment indicators are used as dependent variables (see Appendix 1). This approach enables to separate the effect of social capital on total investments, foreign investments and savings. Also, distinction is made between average investment activity over the study period and capital growth during the same period. As there are only few (slightly) similar previous studies – especially in respect of the number of social capital components included –, the empirical analysis in this paper is largely exploratory in the nature. Therefore, in order to more clearly figure out most “investment-friendly” components of social capital, stepwise regression with backward method is implemented. Additionally, alternative model specifications differ from each other in respect of the set of control variables included.

Table 2 presents estimation results with capital growth and investments’ share in GDP as dependent variables. In Model 1A, capital growth (CAP) was regressed by social capital factors F1-F10, among which only F3 (confidence) was a significant predictor of investments. In other specifications, where transition dummy and

traditional growth factors were added in different combinations, none of the social capital factors turned significant (these results are not presented in the table).

**Table 2.** The effect of social capital on capital growth and investments' share in GDP

Dependent:	CAP		CAPGDP		CAPFGDP	
Predictors	Model 1A	Model 1B	Model 1C	Model 1D	Model 1E	
F1 helping	ns	ns	0.672**	0.721**	ns	
F2 concern	ns	ns	ns	ns	ns	
F3 confidence	-0.454***	ns	ns	ns	ns	
F4 polaction	ns	ns	-0.746***	-0.663***	ns	
F5 polinterest	ns	ns	ns	ns	ns	
F6 justified	ns	ns	-0.489**	-0.506**	ns	
F7 belong	ns	ns	ns	ns	ns	
F8 friends	ns	ns	ns	ns	ns	
F9 family	ns	ns	-0.353*	-0.345*	ns	
F10 gentrust	ns	-0.396**	ns	ns	-0.352*	
GOV	- (ns)	- (ns)	- (ns)	- (ns)	- (ns)	
GDP0	-	-	ns	-	ns	
F-statistic	7.270**	5.390**	3.555**	2.671*	3.952*	
Adjusted R <sup>2</sup>	0.178	0.128	0.261	0.182	0.092	
Chow test	1.495	1.762	-	1.786	-	

Notes: Standardised regression coefficients of the backward reduced models

\* Significant at level  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . Ns – insignificant predictor.

Source: Author's calculations.

In Model 1B, CAPGDP was used as investments indicator. When ten social capital factors were used as independent variables (both with and without traditional growth factors SEC, TERT and TRADE), only F10 (general trust) was significantly but negatively related to investments. When GDP0 was added as independent variable (Model 1C), F1, F4, F6 and F9 turned out to be significant predictors of investments share in GDP. However, income level itself remained insignificant in this model specification. Models 1D and 1E use CAPFGDP as a dependent variable. Although CAPFGDP is highly correlated to CAPGDP ( $r = 0.968^{***}$ ), regression results are not the same in similar specifications. When generalised, however, both investment indicators depend on either F10 (Models 1B and 1E), or F1, F4, F6 and F9 (Models 1C and 1D). Except in case of F1, higher investments are associated with lower level of social capital. Still, this result should not mean that social capital retard investments – instead, this could simply indicate the higher investment potential of CEE economies where the levels of social capital are lower. Appendix 4 and Figure

2 also revealed that respective investment indicators are in average higher in CEE as compared to WE countries.

All models in Table 2 were also tested for control variables (i.e. more traditional growth factors like GOV, SEC, TERT, TRADE and GDP0), but their inclusion did not change the results. When transition dummy was taken into account, it turned the only significant predictor in Models 1A-1C, but remained insignificant in Models 1D-1E. As these results did not change the effect of social capital components (except in case of TRANS which changed their effect insignificant), they are not presented in the table. Finally, concerning the possible differences between WE and CEE countries, Chow test was insignificant in Model 1. The conclusion is that there are no significant differences between the country groups regarding the effect of social capital on overall investment activity.

Next, the effect of social capital on domestic savings (reflecting the domestic investment potential) and foreign direct investments is analysed. The regression results are presented in Tables 3 and 4. In case of FDI, the most stable social predictors of investments are F5 polinterest (with a negative sign) and F7 belong (with a positive sign), followed by F8 friends (negative sign). In some specifications, also F4, F6, F9 and F10 have a positive significant effect on FDI.

**Table 3.** The effect of social capital on foreign direct investments

Dependent:	FDIGDP			
Predictors	Model 2A	Model 2B	Model 2C	Model 2D
F1 helping	ns	ns	ns	ns
F2 concern	ns	ns	ns	ns
F3 confidence	ns	ns	ns	ns
F4 polaction	ns	ns	0.606***	ns
F5 polinterest	-0.337*	-0.409**	-0.458***	-0.271**
F6 justified	ns	ns	ns	0.211*
F7 belong	0.521*	0.612***	ns	0.402**
F8 friends	-0.426*	ns	-0.347*	ns
F9 family	ns	ns	0.246*	ns
F10 gentrust	ns	ns	0.463**	ns
GOV	-	-0.621***	-0.710***	-0.864***
TRADE	-	-	0.652***	0.666***
GDP0	-	-	-(ns)	-
TRANS	-(ns)	-(ns)	-	-0.427**
F-statistic	1.891	4.100**	7.292***	11.359***
Adjusted R <sup>2</sup>	0.084	0.243	0.611	0.689
Chow test	0.527	3.589**	-	-

Notes: standardised regression coefficients of the backward reduced models

\* Significant at level  $p < 0.10$  \*\*  $p < 0.05$  \*\*\*  $p < 0.01$ .

Source: Author's calculations.

Institutional quality (GOV) has a negative significant effect on FDI in all models where it was introduced, and TRADE appeared the only significant traditional growth factor with a strong positive effect. As regards transition aspect, TRANS dummy was insignificant in most specifications, except in Model 2D where it has negative effect on FDI. Chow test was significant only in Model 2B, where it is obviously related to differences in institutional quality, but not to social capital components. Altogether, it can be concluded that FDI is mostly related to structural aspects of social capital, but various signs of the coefficients and low explanatory power of social capital components (adj.  $R^2$  in Model 2A where only social capital was included was as low as 0.084) do not enable to draw any solid conclusions. Also, the results support the hypothesis that basic components of social capital (except governance) influence foreign investments in WE and CEE countries in a similar way.

Table 4 presents the effect of social capital components on domestic savings. It can be seen from Model 3A that social capital solely has almost no effect on savings – the only significant component is institutional trust (F3) which, however, is insignificant in all other model specifications, and the overall model fit is very poor. The results did not change when GOV or TRANS were added into model 3A.

**Table 4.** The effect of social capital on domestic savings

Dependent:	SAVDOM				
Predictors	Model 3A	Model 3B	Model 3C	Model 3D	Model 3E
F1 helping	ns	ns	1.461***	1.281***	1.448***
F2 concern	ns	ns	0.275*	0.370**	0.383***
F3 confidence	0.328*	ns	ns	ns	ns
F4 polaction	ns	-0.451**	-0.531**	-0.701***	-0.828***
F5 polinterest	ns	ns	ns	ns	ns
F6 justified	ns	ns	-0.465***	-0.317*	-0.399**
F7 belong	ns	ns	ns	ns	ns
F8 friends	ns	ns	-0.552***	-0.508***	-0.580***
F9 family	ns	-0.330**	-0.701***	-0.696***	-0.750***
F10 genrust	ns	ns	ns	ns	ns
GOV	-(ns)	-(ns)	0.612***	0.414**	0.434**
SEC	-	-	ns	0.202*	0.460***
TERT	-	-	1.022***	0.995***	1.110***
TRADE	-	-	0.436***	0.297**	0.479***
GDP0	-	0.847***	-	0.478**	-
TRANS	-(ns)	-	-	-	-0.669**
F-statistic	3.369	6.572***	8.485***	9.423***	10.594***
Adjusted R <sup>2</sup>	0.076	0.366	0.706	0.768	0.790
Chow test	0.453	-	-	-	-

Notes: standardised regression coefficients of the backward reduced models

\* Significant at level  $p < 0.10$  \*\*  $p < 0.05$  \*\*\*  $p < 0.01$ .

Source: Author's calculations.

When initial income level is taken into account, factors F4 polaction and F9 family turn significant but negative predictors of savings (Model 3B). Together with GOV

and traditional growth factors (Models 3C-E), positive effect of F1 and F2, and negative effect of F6 and F8 appear. It is notable that in addition to political interest (F5), all the so-called traditional social capital components – participation (F7), general trust (F10) and also institutional trust (F3) – are insignificant in all model specifications (the only exception is F3 in Model 3A, as explained earlier). Among control variables, trade together with human capital are significant and positive predictors of savings, and adding them into models improves significantly overall model fit. As regards the influence of initial conditions, savings are higher in countries with higher GDP per capita and lower in transition countries. However, the latter does not mean that social capital has a different effect on savings in transition and non-transition countries, as the respective Chow test was insignificant.

It can be summarised that the results of the regression analysis are rather mixed. Still, the following conclusions can be drawn on the basis of the above analysis. Firstly, the component helping had a positive effect on several investment indicators, while the effect of other social capital components was mostly insignificant or negative (except in case of FDI). Secondly, an increase in capital formation was influenced significantly but negatively only by institutional trust. Thirdly, the shares of gross and gross fixed investments in GDP were similarly and negatively influenced by political action, social norms, family and general trust. The same holds for domestic savings, except the effect of general trust which was insignificant. Additionally, domestic savings were positively influenced by helping, concern, confidence and governance. Some interesting results appeared in the models using foreign investments as a dependent variable. For instance, social capital components which had a negative effect on investment's share in GDP had a positive effect on foreign investment. In addition, FDI associated positively with formal networks and negatively with interest in politics, friends and governance.

Table 5 summarises the effects of social capital on alternative investment variables from the other angle. Firstly, when looking at the extent of these effects, social capital influences on the broader basis foreign investments and domestic savings, while overall capital growth is influenced only by one social capital component (institutional trust). Secondly, the analysis shows that the appearance of significant effect of social capital depends on the inclusion of alternative control variables into models, so it could be concluded that social capital alone has only minor effect on investments. Thirdly, as regards the “usefulness” of alternative social capital components, F1 helping, F4 polaction, F6 justified, F9 family, and F10 gentrust have significant effect on at least three investment indicators.

When generalised, components related to trust and norms dominate as predictors of investment activity, which is in accordance with the theory. Here it should be noted that while in most cases the effect of social capital components is negative, in case of FDI it is mostly positive. This could be explained by simple level-effects: there is less social capital in poorer countries which have higher overall investment potential. At the same time, foreign investments flow more into richer countries which are also more endowed with social capital.

**Table 5.** Comparison of the effect of social capital on different investment indicators

	CAP	CAPGDP	CAPFGDP	FDIGDP	SAVDOM
F1 helping	ns	Positive	Positive	ns	Positive
F2 concern	ns	ns	ns	ns	Positive
F3 confidence	Negative	ns	ns	ns	Positive (only without control variables)
F4 polaction	ns	Negative	Negative	Positive	Negative
F5 polinterest	ns	ns	ns	Negative	ns
F6 justified	ns	Negative	Negative	Positive	Negative
F7 belong	ns	ns	ns	Positive	ns
F8 friends	ns	ns	ns	Negative	Negative
F9 family	ns	Negative	Negative	Positive	Negative
F10 gentrust	ns	Negative	Negative	Positive	ns
GOV	ns	ns	ns	Negative	Positive
TRANS	Positive (but makes social capital ns)	Positive (but makes social capital ns)	ns	Negative (with trade)	Negative (with control variables)
Chow	ns	ns	ns	ns	ns
Notes (additional conditions for significant effect)	The effect is significant only without control variables	The appearance of significant effect of social capital depends on the inclusion of GDP0 into models (in different ways)		In most cases, the effect of social capital appears in conjunction with trade	The effect of social capital is significant only when control variables (education and trade) are taken into account

Source: Compiled by the author.

Finally, on the basis of the results of transition dummy and Chow test, it can be concluded that although post-communist status (i.e. significance of TRANS) associates with faster capital growth, higher share of investments in GDP, lower saving and less FDI, there is no reason to suggest that these differences are caused by social capital. This is so because Chow test was insignificant in all model specifications, except in Model 2B. However, in this case the differences between WE and CEE countries are attributable to the indicator of institutional quality, not to ten social capital components.

## 5. Final conclusions and recommendations for future research

The current paper attempted to give an initial empirical insight into the question, whether and which aspects of social capital could encourage investments as a core factor of economic growth. Broad-based approach to social capital was taken and ten social capital components (more than in any previous study) were formed on the basis of WVS data, relying on the growing consensus that social capital cannot be measured by one single variable, on one hand, and overly-aggregated, heterogeneous indexes or latent constructs, on the other hand.

Theoretically, investments are expected to be higher in societies where there is more trust between economic agents. Higher trust and other aspects of social capital usually associate with better investment climate and lower risk-aversion, encouraging both domestic and foreign investments. However, the regression results of the current study were rather mixed and support only partially the proposed proposition that higher level of social capital encourages physical investments, and that this effect is similar in WE and CEE countries. The proposition was supported in that most social capital components had significant effect on alternative investment indicators, and Chow test did not indicate differences between WE and CEE country groups. On the other hand, the proposition was not supported in that the appeared effect of social capital was mostly negative, not positive as expected. Only foreign investments were positively influenced by several social capital components. Also, capital growth was not influenced by social capital, and some core social capital components like general trust and formal networks were insignificant in most regression models.

There were also several limitations, as lack of the dynamic data of social capital did not enable to perform causality tests. However, this aspect is extremely important when one attempts to give some real policy recommendations for encouraging investments with the help of social capital. In this respect, it is also important to investigate the determinants of social capital components, in order to figure out the causal chains from the roots of social capital to its economic effects. Regarding other possibilities for future research, the effect of social capital in conjunction with institutional factors deserves a much deeper analysis. Additionally, the analysis of social capital can be extended to cover meso-level, which enables deeper investigation of the emergence and outcomes of social capital in business firms and other organisations. At this level, case studies and qualitative data are needed to get reliable results. Meso-level analysis of social capital can also shed some light into the differences between innovation activity among countries, as it is argued in the literature that besides reducing transaction costs and diffusing technological information, social capital creates specific “innovative milieu” which helps to overcome uncertainties related to innovations.

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**Appendix 1.** Indicators of investments and control variables for the regression analysis

	Abbreviation	Indicator	Source
Investment indicators	CAP	Gross capital formation (constant 2000 billions US\$), average increase in 2000-2006, calculated as $(CAP2006/CAP2000)/6$	WDI
	CAPGDP	Gross capital formation (% of GDP), average 2000-2006	WDI
	CAPFGDP	Gross fixed capital formation (% of GDP), average 2000-2006	WDI
	FDIGDP	Foreign direct investments (% of GDP), average 2000-2006	WDI
	SAVDOM	Domestic savings (% of GDP), average 2000-2006	WDI
Control variables	GDP0	GDP per capita in 2000, PPP (constant 2005 international \$)	WDI
	GOV	Governance (sum of six indicators), average 1998/2000	Kaufmann et al 2008
	TRADE	Trade (% of GDP), average 2000-2006	WDI
	SEC	Labor force with secondary education (% of total), average 2000-2005	WDI
	TERT	Labor force with tertiary education (% of total), average 2000-2005	WDI

Source: Compiled by the author.

**Appendix 2.** Results of the confirmatory factor analysis

Component	Indicator	Factor loadings	Variance explained (%)	Valid N (%)
F1 helping	Prepared to help elderly people	0.89	68.19	37027 (95.1)
	Prepared to help sick and disabled people	0.87		
	Prepared to help people in the neighbourhood	0.80		
	Prepared to help immigrants	0.75		
F2 concern	Concerned with people in own region	0.93	76.10	37987 (97.6)
	Concerned with fellow countrymen	0.85		
	Concerned with people in neighbourhood	0.84		
F3 confidence	Confidence in parliament	0.81	60.20	34932 (89.8)
	Confidence in the civil services	0.79		
	Confidence in the police	0.76		
	Confidence in the justice system	0.75		
F4 polaction	Attending lawful demonstrations	0.80	64.13	34792 (89.4)
	Joining in boycotts	0.80		
	Signing a petition	0.80		
F5 polinterest	Discussing political matters	0.81	60.33	37868 (97.3)
	Politics important in life	0.78		
	Following politics in the news	0.74		
F6 justified	Cheating on taxes	0.80	57.98	37050 (95.2)
	Claiming government benefits	0.76		
	Someone accepting a bribe	0.72		
F7 belong	Belonging to voluntary organisations	0.89	79.23	38919 (100.0)
	Unpaid work for voluntary organisations	0.89		
F8 friends	Spending time with friends	0.81	52.95	31313 (80.5)
	Friends important in life	0.68		
	Spending time with colleagues from work	0.68		
F9 family	Prepared to help immediate family	0.77	48.50	38141 (98.0)
	Concerned with immediate family	0.72		
	Family important in life	0.58		

Source: Author's calculations on the basis of WVS.

**Appendix 3.** Country mean factor scores of social capital components at the level of individuals (results of the confirmatory factor analysis)

Country	F1 helping	F2 concern	F3 confidence	F4 polaction	F5 pol-interest	F6 justified	F7 belonging	F8 friends	F9 family	F10 gentrust
AUT	0.14	-0.09	0.42	-0.02	0.18	0.21	0.20	-0.01	0.09	0.07
BLR	-10.83	0.36	-0.21	-0.67	-0.08	-0.88	-0.29	0.03	-0.45	0.26
BEL	0.23	0.00	-0.04	0.37	-0.18	-0.28	0.34	0.02	0.31	-0.02
BGR	-0.01	0.15	-0.34	-0.49	0.07	0.27	-0.34	0.12	0.36	-0.07
HRV	0.43	0.18	-0.25	0.22	0.13	0.15	-0.14	0.40	-0.07	-0.21
CZE	0.14	-0.27	-0.43	0.14	0.27	0.14	0.04	-0.13	-0.83	-0.12
DNK	0.08	-0.86	0.66	0.39	0.29	0.48	0.41	0.28	-0.90	0.79
EST	-0.44	-0.18	-0.18	-0.55	-0.03	-0.31	-0.27	-0.06	-0.14	-0.14
FIN	0.12	-0.64	0.47	0.26	-0.31	0.10	0.43	0.37	-0.84	0.60
FRA	0.00	-0.25	0.04	0.44	-0.10	-0.36	-0.18	0.06	0.24	-0.19
DEU	0.03	0.51	0.17	0.22	0.33	0.09	-0.22	0.13	0.27	0.16
GRC	0.16	0.10	-0.50	0.19	0.16	-0.50	0.37	0.40	0.37	-0.14
HUN	-0.18	-0.28	-0.08	-0.71	-0.30	0.06	-0.32	-0.42	0.50	-0.17
ISL	0.30	-0.04	0.76	0.47	0.05	0.33	0.69	0.25	0.31	0.24
IRL	0.60	0.50	0.52	0.13	-0.25	0.27	0.16	0.46	0.12	0.13
ITA	0.38	0.03	-0.01	0.31	-0.10	0.22	-0.08	0.04	-0.17	0.05
LVA	-0.33	-0.69	-0.11	-0.39	0.09	0.13	-0.32	-0.42	-0.13	-0.28
LTU	-0.83	0.05	-0.63	-0.19	0.44	-0.35	-0.42	-0.40	-0.16	-0.09
LUX	0.17	-0.03	0.49	0.25	-0.15	-0.26	0.24	0.18	0.20	-0.12
MLT	0.36	0.26	0.23	-0.20	-0.20	0.59	-0.11	-0.54	0.52	-0.20
NLD	0.21	-0.08	0.24	0.43	0.28	0.21	10.05	0.37	0.16	0.65
POL	0.15	0.13	0.04	-0.60	0.08	0.16	-0.37	-0.46	0.26	-0.26
PRT	0.19	0.22	0.18	-0.26	-0.34	0.10	-0.35	0.11	0.30	-0.39
ROM	0.06	0.03	-0.35	-0.62	-0.32	0.14	-0.40	-0.21	0.23	-0.44
RUS	-0.62	-0.17	-0.47	-0.56	0.23	-0.05	-0.43	-0.42	-0.30	-0.13
SVK	0.28	0.43	-0.13	-0.10	0.08	-0.30	0.25	-0.10	0.18	-0.31
SVN	0.26	0.11	-0.14	0.01	-0.32	-0.04	0.04	0.16	0.09	-0.18
ESP	0.15	0.33	0.11	-0.25	-0.53	0.03	-0.28	0.13	0.12	0.18
SWE	0.64	0.13	0.42	0.98	0.47	0.08	10.23	0.58	0.37	0.79
UKR	-0.81	0.05	-0.39	-0.54	0.20	-0.30	-0.37	-0.12	0.00	-0.07
GBR	-0.10	-0.02	0.18	0.34	-0.57	0.12	0.05	0.41	-0.19	-0.03

Source: Author's calculations on the basis of WVS.

**Appendix 4.** Mean comparison of the national-level social capital components and investment indicators

Indicator	Sample	N	Mean	Std. dev.	t-test	Sig.
F1 helping	WE	17	0.198	0.192	2.831	0.013
	CEE	14	-0.277	0.603		
F2 concern	WE	17	-0.011	0.340	-0.038	0.970
	CEE	14	-0.006	0.295		
F3 confidence	WE	17	0.244	0.299	5.486	0.000
	CEE	14	-0.258	0.183		
F4 polaction	WE	17	0.210	0.303	5.256	0.000
	CEE	14	-0.365	0.303		
F5 polinterest	WE	17	-0.079	0.299	-1.053	0.301
	CEE	14	0.023	0.223		
F6 justified	WE	17	0.084	0.286	1.622	0.116
	CEE	14	-0.090	0.310		
F7 belong	WE	17	0.254	0.477	3.700	0.001
	CEE	14	-0.242	0.252		
F8 friends	WE	17	0.171	0.249	3.640	0.001
	CEE	14	-0.157	0.250		
F9 family	WE	17	0.067	0.402	0.771	0.447
	CEE	14	-0.038	0.343		
F10 gentrust	WE	17	0.135	0.352	3.189	0.004
	CEE	14	-0.169	0.159		
GDP0	WE	17	30177.91	9234.76	7.405	0.000
	CEE	14	10350.01	4220.89		
CAP	WE	16	0.20	0.04	-4.151	0.001
	CEE	14	0.30	0.08		
CAPGDP	WE	17	21.34	2.93	-3.452	0.002
	CEE	14	25.49	3.76		
CAPFGDP	WE	17	20.95	2.84	-2.368	0.025
	CEE	14	23.57	3.34		
FDIGDP	WE	16	6.14	5.80	0.451	0.655
	CEE	14	5.36	3.05		
SAVDOM	WE	16	24.25	7.90	0.974	0.339
	CEE	14	21.75	5.86		

Source: Author’s calculations on the basis of WVS and WDI databases.

# MANAGING EDUCATIONAL SECTOR VIA SELF-EVALUATION POLICY

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## Abstract

Performance evaluation is not a new concept in private sector, while in public sector organisations it has been taken into use since the implementation of performance management. Evaluation is necessary to make the future-oriented management decisions based on the information available today, in order to achieve desired performance. The authors analysed self-evaluation reports prepared in Estonian general schools in 2008. Self-evaluation reports were analysed to see, if the relationships and roles, patterns of governance and accountability, flow of resources, the headmaster's role, educational and other values in Estonian schools have hanged enough, to provide education service, which responds to the high expectations of contemporary society. Although the analyses of OECD surveys' results show that the organising of the Estonian educational sector is a good example for many other countries, the actual situation in the schools is not as positive. There are high expectations put on schools by the policymakers' level, but schools do not have enough ability to reach them. There is a lack of financial resources, knowledge and organisational willingness.

**Keywords:** self-evaluation, performance appraisal, external evaluation, internal evaluation

**JEL Classification:** I20

## Introduction

While measuring educational sector's performance, the value added to the society is discussed. In education there are two conflicting goals: to achieve excellence and efficiency, while ensuring social, gender, and racial egalitarianism. It is widely accepted, that effective education and training systems can create economic growth, and equitable systems – social cohesion, the positive externalities. Therefore, principles and tasks in education, are multiple and vague, and performance relative to these goals is difficult to measure. Some areas of performance do not allow quantification. For many decisions the immeasurable might be more important than the measurable. Quantification also often means simplification. This is especially true when considering quality, consumer satisfaction and the effectiveness of social services. (Jackson 1988) That is why the question is raised (Neely 2005) – how to develop dynamic rather than static measurement systems and how to ensure an appropriate focus on public organisation's performance management, rather than simply performance measurement.

All the developed countries have taken several steps towards performance oriented education polices. The Business and Industry Advisory Committee to the OECD

(2007), like many other researches suggest that school headmasters should be given extensive authority, which leads to good school performance. Likewise, organised monitoring and evaluation evidence can be seen as more important in a decentralised than in a centralised system (Webb and Vulliamy 1998). With a view to motivate the autonomous local education providers to act in pupils' and parents' interests, competition is heightened between schools via the pupil based funding. To survive, every autonomous school should work with a quality improving management system. The key to this is a cycle of performance evaluation, feedback and improvement. Likewise, the schools accountability to the state as a subscriber of educational service as well as to local community and other stakeholders is increased. The lowest level of governance, with extensive autonomy, accountability and competition enables to overcome the difficulties concerning the evaluation of the offering performance of public sector's service, especially educational service. All that results in schools' bigger efforts in the interests of pupils. Wößmann et al. (2007) recent empirical analysis, based on PISA 2003 results, suggests that different facets of accountability, autonomy and choice are strongly associated with pupil achievement.

There is a survey carried out by OECD (Organization for Economic Co-operation and Development) (2008) in 2007 among 25 OECD member states and candidate countries (including Estonia) in order to investigate the education legislation system in terms of decision making and accountability pattern in education systems. The survey shows that compared to other countries, Estonian general schools have relatively high authority of decision concerning the matters of school curricular, human resource management, development planning and budgeting. The vast majority (66%) of the decisions contained in the questionnaire have been delegated to the school level. A similar result could be seen only six countries (including Estonia) out of 25. 30% of the schools' organisational issues are being decided at local government's level. Less than 10% of the decisions employed in OECD questionnaire are being decided at the national level in 9 countries. In Estonia the corresponding figure is 4%, as well as in Hungary and in England, this is also the lowest level among all the surveyed.

In order to realise schools' accountability, both the state monitoring and social control of school activities have been increased. With the view to monitor school headmasters' and teachers' performance, national examination system, the school self- and external evaluation and the claim for schools for publicising schools' performance indicators has been introduced. Surveys carried out in 2007 among the OECD countries and candidate countries (including Estonia) (OECD 2008) show that school self- and external evaluation system is employed only in half of the countries surveyed (in 14 countries out of 29). The feedback received from self-evaluation directly influences school management decisions only in 11 countries and the feedback from self-evaluation is influential only in 9 countries. Thus the external and self-evaluation of schools' activities is not so wide spread in developed countries' educational policies and this field is relatively poorly studied as well. In Estonia the both, external and self-evaluation are being applied. The renewed self-evaluation system is compulsory for all the schools since 2010. Therefore, with its



highly decentralised education system, Estonia is an interesting example to investigate the performance evaluation policy in the educational system.

The implementation of systematic thinking in evaluation implies the creation of self-evaluation system, which integrates different areas and enables to evaluate the causalities of different activities and performance results. This all demands a new perspective, structure, target setting and systematic data collecting process, as well as determining performance indicators. But unfortunately the main hindrances for an educational institution are lack of knowledge, conservative attitudes, hopes for a universal and “ready-to-use” solution, and certainly human and material resources. Another problem is employees’ as well teachers’ resistance to the new management system, which is often said to result from an opposition to change. Thus perhaps one of the main challenges for the headmasters is to deal with change management, changing attitudes and understandings, and creating a unitary view in their school.

This paper purports to analyse the situation of schools self-evaluation based on the example of the Estonian educational sector and brings out the main problems on the basis of schools’ self-evaluation reports. The article consists of three main parts. Firstly the evaluation in educational sector is being discussed. The second paragraph describes the methodology of the analysis of this article. Thirdly, the findings of self-evaluation reports in 14 Estonian general schools are brought out aiming at assessing how well is the evaluation policy employed in Estonian educational system.

### **Evaluation in the educational sector**

The term “evaluation” in management has broadened substantially over the years. Evaluation used to have a rather elementary and raw control function in which employees’ performances were given quantitative estimations by their superiors (Pratt 1991). Nowadays it also includes several activities by means of which the organisation tries to evaluate, train, develop and promote its employees, as well as improve the organisations effectiveness. Also rewards are provided for efficient work. (Mani 2002) The aim of evaluation has shifted towards self-evaluation, development and motivation, and is more directed to the present and the future rather than the past (Sisehindamise... 2009). Both quantitative and qualitative evaluation criteria and methods (development interviews and group work) are important, and the evaluator and the evaluatee are more like partners who respect and accept each other.

For many years school evaluation has been tantamount to external evaluation, performed by the professional evaluators or inspectors with a view to find out if schools are fulfilling their duties. At the same time it is hoped that such external evaluations would motivate teachers and school headmasters to work harder in order to improve their schools. (Nevo 2001) There are both pros and cons to external evaluation. The most commonly mentioned disadvantage is the inability of the external evaluator to give an objective estimation because he/she does not fully know and understand the context and the fear that comes with it. At the same time

external evaluation provides schools considerable information from the outsider's perspective.

**An external evaluation** is performed by an evaluator or a group of evaluators who are not the employees of the particular school. External evaluators might be the state department of education or the ministry of education, using professional evaluators or regional inspectors, school district, or a district/state/national evaluation department. An external evaluation of the school could also be conducted by an independent evaluation consultant or evaluation firm, commissioned by the school itself or its governing board. (Nevo 2001) The purpose of external evaluation is to give schools and its headmasters' feedback on the school's activity and performance (Kitsing 2008).

The external evaluation of schools is also carried out through nationally developed standardised tests and examinations. Tests and examinations, performed on a uniform basis give schools and teachers an opportunity to assess and compare their pupils' academic performance nationwide. On the other hand, external evaluation of the results provides an input to the planning of changes in the national curriculum, textbooks, and teacher training.

Although school evaluation used to be seen as tantamount to external evaluation, nowadays it is seen as more of a supportive device allowing the more autonomous schools to view their performance through the external perspective. Thus external evaluation provides additional information to schools management, helps seeing themselves from different perspectives. It gives the needed information for comparison, broadening and deepening a school's self-knowledge. (Swaffield, 2005)

In order to increase schools' social responsibility, the results of external evaluation should be made public (Tolofari 2005). This also supports competition between schools, since the results provide more information about schools for parents and usually parents have an opportunity to choose the school for their children. This is also the practise in Estonian education policy, that schools are being evaluated based on the results of national exams and standardised tests which are public information. However, ranking schools by these principles may be dangerous, because schools and teachers may become too obsessive about focusing on just raising tests' and examinations' results (Bay *et al.* 1999). Bevan and Hood (2006) have pointed out that in order to show better results for public, organisations may depart from the recognition on behalf of dishonestly influence the results. At the same time, different schools may not be comparable to the results of a variety of reasons. Tiit (2006), Kass (2007), Piirpuu (2007), Koorits and Kuus (2007) have found that behaviour like this has led to dissatisfaction among parents, teachers and school administrators in Estonia.

The schools which have a larger autonomy are often funded by the central governments per capita. They must compete for higher budget, ensuring the best possible learning and development conditions for pupils. Likewise they have recently started to evaluate and analyse their activities more systematically. More

attention is now given to self-evaluation which is implemented alongside external evaluation. Schools' inclination to engage in self-evaluation emanates from the changing policy environment, the increasing and intense demands for change, and the new competition for pupils (Glasman *et al.* 2002). With a view to turn educational institutions' attention to the need for self-evaluation in school development, self-evaluation is one of the main priorities of states general education policy in Estonia starting from 2001.

**Self-evaluation** can be defined as a continuous and systematic analysis of learning processes, as well as school management and performance evaluation for making strategic decisions about managing the pupils' and school's development. Swaffield and MacBeath (2005) determine school self-evaluation as something that schools do to themselves, by themselves and for themselves. Through self-evaluation, educational institutions' strengths and weaknesses are determined; development and action plans compiled. As Towler and Broadfoot (1992) point out, reflection and evaluation can encourage understanding of what is expected, improve motivation, lead to pride in positive achievement and offer a realistic appraisal of weaknesses. Thus professional self-evaluation should bargain the sustainable development of a school.

The idea of self-evaluation is not to evaluate individuals but processes, and the results are used for creating unity, not to bring out the peculiarities of different individuals. Likewise, self-evaluation is not only about evaluating yourself but consists of evaluating others and also others evaluating you (Lilleste 2007). Self-evaluation is needed to introduce changes in schools and evaluate those actions. It is especially important in the event of rapid changes. Regular evaluation (once a year on average) enables to fixate the organisation's shape, to bring out the dynamics of change, the organisations' problems and its needs for development, also development strategies are specified. Furthermore, self-evaluation allows to see the development of employees and to find out the effectiveness of methods employed during changes. Studies emphasise that the most resultant is self-evaluation process itself rather than specific results.

Literature makes it clear that the context for school self-evaluation is school improvement. But school improvement is defined in various ways. One of the most common views is also pointed out by Saunders (1999), who defines school improvement to all intents and purposes as raising the standards of pupils' performance. Thus working explicitly towards specific measurable improvement year-on-year in pupils' test and examination results is the main idea behind school improvement which can be achieved through evaluation. In the authors opinion this is quite a narrow viewpoint. Academic results are certainly important, but general skills, which are not expressed in test results, also need to be taken into consideration. It is often said that general skills are those that constitute a person's success in the future rather than his/her grades in school.

Self-evaluation implies the selection of appraisal objects and subjects and the use of fitting appraisal criteria and methods. The objects of self-evaluation can be schools'

objectives, the arrangement and the results of the learning process, schools' microclimate and image, teachers' teaching activities and pupils' learning process or the performance of the school's headmaster. The subjects are evaluators themselves. (Aro 2006)

Self-evaluation is not only seen as a good mean of development for a school in general, but for individuals as well. A study of Kyriakides *et al.* (2002) showed that teachers were interested in identifying mechanisms for measuring their performance. They initially suggested that the measuring of their performance could be achieved through a self-evaluation procedure. Some teachers suggested that their efficiency could also be measured by asking pupils and/or parents to express their views. However, this suggestion was not accepted by all teachers. Self-evaluation raises the awareness and responsibility of the teachers and increases the self-respect for their achievements. It also encourages teachers to develop themselves and to apply their competence creatively. In general, there are three values connected with teachers' self-evaluation (Kyriakides *et al.* 2002):

- 1) Teachers are seen as natural learners through the methods they use and the way they behave. They learn and acknowledge when their actions are effective for their pupils;
- 2) Authentic development must come primarily from within the school;
- 3) The preferred mode of commitment arises from ownership of the development process. Asking teachers to name a number of qualities that characterise an efficient teacher gives them the opportunity to reflect upon their work and decide who among them are efficient and who are not.

Accordingly, there is a need for encouraging teachers' involvement in the formation and evaluation of their own school policy of efficiency. Teachers' involvement is crucial not only in the implementation of school policy, but also in its planning and evaluation. One of the common flaws is that organisations are focusing only on the creation process of the performance evaluation system, but they forget to enhance the communication and employees' involvement. The evaluation system works only if it is an integral part of the school's culture; is seen to be fair and open; understood by everyone and based on shared commitment to supporting continuous improvement and recognising success (Performance... 2000). If it is not done this way, evaluation systems will not work even when they are suitable and reflect the organisation's objectives, strategy and other important processes accurately. Likewise, Marsden and French (1998) claim in their study that teachers' resistance to the new performance management system results from their resistance to changes. Employees should not only be aware of the objectives, business plan and evaluation system, but they should also have the opportunity to contribute to their formation.

Hence, by means of the teachers' involvement in the self-evaluation process, they become more sensitive and feel commitment towards matters concerning their work. Thereby the teachers' professional development can be promoted. Recent research carried out by McKinsey&Company (2007) acknowledges that the most important factor of pupil performance is the quality of instruction and teachers. Hanushek and Rivkin (2003) suggest that the magnitude of estimated differences in teacher quality

is extensive. This is why promotion of schools' self-evaluation has a crucial importance when implementing the policies that affect pupil achievement.

The authors emphasise that the implementation of self-evaluation in a school demands a certain framework, where schools have a broader autonomy to create their own policy while also state support in regard to knowledge and practical guidance materials should be present. It is impossible to use one and the same self-evaluation system in all schools because an evaluation system becomes useful and reliable only when it is implemented in accordance with school context and characteristics. Therefore both the external and internal environment of the school should be taken into account. Saunders (1999) points out the conditions that need to be considered while implementing reliable self-evaluation, which must be:

- democratic - promote democratic beliefs and practices through consultation and negotiation;
- responsible - the learning, success and happiness of all pupils are emphasised;
- involve teachers, pupils, parents (and other stakeholders);
- allow for the participation of a critical perspective;
- based on trust, teamwork, ownership and fun, as well as on clear objectives and procedures;
- aim to understand people's real-life experiences, vested interests, as well as to analyse data;
- shared with participants, from setting out the aims to disseminating the outcomes.

Despite the positive gains from school self-evaluation there are also many objections to self-evaluation. Sedikides (1993) argues that the self-evaluation process is likely to be motivating. Individuals involved in self-evaluation strive to enhance the positivism of their self-conceptions or protect the self from negative information. For that reason, people process information relevant to them selectively. For example, people tend to focus on information that has favourable implications for themselves and avoid information with unfavourable implications. But Dunning *et al.* (2004) argue that people rarely have all the information they need to render accurate self-judgments. Therefore, achieving accurate self-knowledge is an inherently difficult task. Secondly, people tend to neglect information which leads them to assessments worse than they are capable of, people overestimate themselves. Likewise, Fitzgerald, White and Gruppen (2003) studied medical students' ability to self-assess their performance. As a conclusion they found that when the task was one in which the students had limited experience, self-assessment accuracy suffered, as did performance.

Thus every evaluation method has its error rate but it can be solved by implementing extra evaluation methods. Therefore it is argued that self-evaluation should be used alongside external evaluation. The authors of this article emphasise that an evaluation system works best if implemented rightly. And because many schools are starting to use performance evaluation, it is vital for the school headmasters to manage the changes happening in their schools. It is time for the schools to start introducing future changes and involving school members in the creation process of

performance evaluation systems. Certainly one must not forget the important role of the policymakers, who are responsible for creating the necessary infrastructure for schools. The authors emphasise the policymaker's role in doing lobbying among school headmasters and other stakeholders with the view to make them realise the importance and necessity of new political perspective to their school. Likewise, they need to create the framework for employing new policies, i.e. self-evaluation. Their responsibility is to ensure schools with financial resources and know how as well creating a network between all stakeholders while implementing new educational policies. Thus the cooperation between policymakers, headmasters, teachers and other schools' stakeholders is crucial in successful implementation of changes.

### **External vs. self-evaluation**

Nevo (2001) elicits that in many educational systems, "everybody seems to hate external evaluation while nobody trusts self-evaluation". At the same time there is proof that self-evaluation has more positive effects for schools. For example, a study by Webb and Vulliamy (1998) showed that external evaluation inspections can cause loss of confidence, feelings of inadequacy, deprofessionalisation and extreme anxiety, which combined with exhaustion from the intensification of work and stress, can halt the creativity and development even of schools deemed successful and render them debilitated. At the same time, schools who implemented self-evaluation despite all the limitations of school self-evaluation, had ownership over their methods of data collection and analysis as well as commitment to respond to evaluation findings, which led to direct and immediate changes in practice.

However, it is essential to mention that despite the development of self-evaluation, schools' external evaluation is also important and one cannot substitute the other. Nevo argued that both types of evaluation are needed as they both have important roles in the development of schools, teachers and educational systems. The results of external evaluations of school performance provide valuable additional input for the school's self-evaluation system. For example, in Finland the National Board of Education has been seeking ways of utilising external evaluation in addition to promoting school self-evaluation, in order to obtain an overview of the impact of the reforms in education policy and to improve the comparability of standards between schools by providing schools with both a broad frame of reference and specific benchmarks against which to judge their own performance. (Webb and Vulliamy 1998). Thus, there are also signs in Finland that the move to a culture of school self-evaluation will be accompanied by serious efforts to systematise the use of external evaluation and to provide national evaluation of school achievements.

Since 1997 the Estonian educational sector has implemented the external evaluation of pupils' achievement. Since 2006 the self-evaluation of education institutions has been legitimated. At the same time the role of the external evaluation of education institutions was reduced. Today, an external evaluation consists of the evaluation of study results and it is conducted by means of national examinations and final examinations and national standardised tests.

According to the law, (Basic... 1993) the self-evaluation of schools is an ongoing process, designed to ensure the schools consistent development and supporting the development of pupils. The results of self-evaluation give an input for elaboration of school development and action plans. School headmasters have an important role to play, because they introduce the order for the self-evaluation process. During self-evaluation teaching and learning process, school management and their performance is being evaluated. Schools are obligated to conduct a self-evaluation report least once in every three school years and to submit it to the Estonian Ministry of Education and Research. The report is approved by the school's headmaster and coordinated by the school's board which consists of the representatives of parents, local government, pupils and teachers.

The self-evaluation reports should be based on educational institution's performance indicators, which are elaborated by the ministry of Education and Research and are available to everyone through the Education Information System. The self-evaluation should be conducted based on the following aspects:

- 1) leadership and management, including strategic management;
- 2) human resource management, including the need-for-staff evaluation, recruitment, involvement, support, development, evaluation and motivation of staff in the results, including the achievements of staff, training, satisfaction, personnel statistics;
- 3) cooperation with stakeholders, stakeholder involvement, cooperation with stakeholders and interested parties relating to the evaluation results, including the school board, parents and other stakeholders in activity, publicity, involvement in decision-making, feedback and satisfaction;
- 4) resource management, including budgetary, material and technical basis for the development of information resources management, sustainable management and the environment;
- 5) teaching and learning process, including the pupil development, curriculum, teaching arrangements and methods, values and ethics, results of the pupils, including pupils with special educational needs, recreational activities, health, statistics of pupils, pupils satisfaction and performance.

The findings of external evaluation in Estonia are met as one input of the self-evaluation process. The central level, ministries role is to ensure the reliable results of evaluation (as well as external, as the self-evaluation). (Kitsing 2008) Self-evaluation reliability should be provided via elaboration of functional system of self-evaluation in schools. The system involves as well as manuals to school leaders and other stakeholders as well the assistance of schools by trained advisors. This advice is intended to provide recommendations about the implementation and the analysis of the results of self-evaluation analysis and the revision, whether everything is done according to the law.

As discussed previously, the changes in the institutional arrangements of the educational systems have led to schools' greater autonomy and larger accountability to society. In turn, this has led to a reduction in schools external evaluation intensity, and more effort is put on schools' self-evaluation. The extensive performance

evaluation in schools must be accompanied by changes in the responsibilities of school headmasters, teachers and other stakeholders, as well organisational climate. Tolofari (2005), has investigated the England's and Scotland's education systems, where the schools are given large authority in managing. They have outlined the structural changes in England's and Scotland's schools and relationship of schools to the wider society as follows:

1. Roles and relationships have changed both within the school and between the school and its environment. For instance, staff participation in decision making, devolved management of schools, statutory powers have been given to parents to be involved in the decision-making process, more intensive collaboration with stakeholders.
2. Pattern of governance – schools themselves now exercise most powers, including planning and budgeting, resource allocation, hiring and firing, as well as evaluation and monitoring.
3. The flow of resources – The number of pupils a school has on its lists determines directly the size of its budget. Schools must compete with each other in attracting pupils.
4. Pattern of accountability – accountability to parents and other stakeholders is emphasised. Teachers are also to be accountable to each other.
5. Headmasters' roles – the headmaster is now more of a manager, in the business style, therefore there is a need for new skills in finance, budgeting, etc., and to spend more time on managing performance and the outward image of the school.
6. The educational and other values that underpin schooling – there is a divergence between the social and cultural values of schooling and managerialism. The impact of managerialism is that the emphasis on performance and output measures and resource management has diminished the traditional collegiality within the teaching profession.

Concerning state policy, the authors emphasise that external evaluation concentrates mostly on inputs and outputs and self-evaluation on outcomes. Because schools' main objective is to offer a good outcome for the society, the role of governmental appraisal should be decreased and instead appraisal based on schools' performance should be valued more highly. It is important to emphasise, however, that self- and external evaluation must become much more mutually supportive and integrated. The synergy must be achieved. Synergy of self- and external evaluation stands for the integration of knowledge and experience coming from different sources and people (Syneva 2007). In a process which creates synergy between self- and external evaluation, the visions of different parties should be shared. The visions are essential because they give directions to the purpose of the evaluation.

## **Methodology**

The empirical part of this article consists of two studies employed in Estonian education sector. The authors have chosen to analyse the Estonian schools, because the analysis of the institutional arrangement of educational system shows that Estonia is quite an interesting example of reforming the educational system in a



developed country. Because of the fact that the Estonian educational system is strongly based on the approaches that have proven to be performance-enhancing, the analysis gives an overview and information to those countries that have not reached so far with the restructuring of the educational system. As the analysis of OECD surveys' results show, the organisation of the Estonian educational sector is a good example for many countries. As discussed previously, the extensive decentralisation of educational sector must be accompanied with school's internal changes – changes in organisational climate, in teachers' and headmasters' competencies and in organisational mindset to ensure the accountability to society and competitive education. These changes are described by Tolofari (2005). Have these changes been taken place as well in Estonian schools, which have been operating relatively autonomously, that will be examined in the next section.

Firstly, the authors analysed the self-evaluation reports prepared in Estonian general schools in 2008. To be more precise, authors analysed the Estonian schools' self-evaluation reports to see whether the structural changes, outlined by Tolofari (2005) – the relationships and roles, patterns of governance and accountability, flow of resources, the headmaster's role, change of educational and other values – have taken place in Estonian schools, in order to provide education service responding to the high expectations of contemporary society.

Although the newly elaborated self-evaluation system is compulsory for the Estonian general schools from 2010, there is already an opportunity to analyse the results of the test-period. This gives an opportunity to appraise the shortcomings of the Estonian general education policy and therefore enables to develop solutions for overcoming them. As the participation in this study was voluntary, only 14 schools participated in this process, which is an important limitation of this study. Only the reports of the schools who participated voluntarily in the trial project could be analysed. Therefore further study should be implemented when all the schools have already practiced self-evaluation as a management mean.

The authors compared these results with a second study – pilot study employed in Estonian general educational schools in 2009. The research was carried out in May 2009 and was executed in five stages:

- 1) collecting background information;
- 2) compiling a questionnaire;
- 3) testing of the questionnaire;
- 4) selecting schools and implementing the research;
- 5) analysing the data.

In the first stage, background information about Estonian educational field was collected. Secondly the questionnaire was compiled based on the gathered information and practices. Before implementing it, the questionnaire was tested among some headmasters and teachers. All the questions that were not understood were redefined. In this stage, the technical solutions for implementing the research were also carried out. Fourthly, authors selected randomly eleven schools from three Estonian counties where the research was held. Altogether 10 Estonian general

schools from three different counties – Lääne (3), Viljandi (4) and Tartu County (3), and one vocational school from Tartu County participated in this research. These schools were selected randomly and all schools' headmasters were contacted by the phone and e-mail. Headmasters informed the teachers about the inquiry who then voluntarily participated in it. In order to achieve the goal of this research, both, headmasters' and teachers' opinions were discovered and compared to each other.

The inquiry was held electronically, while teachers and headmasters had an opportunity to fill out the questionnaire online, via internet. For the research, electronic solution called eFormular was used. It is a unique tool providing possibility for creating electronic forms (eFormulars) and conducting surveys via the Internet. The questionnaire consisted of both open and closed questions. The answers to the closed questions were given in 5-point scale (1 – do not agree at all; 2 – rather do not agree; 3 – hard to evaluate, do not actually know; 4 – rather agree; 5 – totally agree). There was also a possibility to answer 0 which stood for having no information or ineptitude to answer. Altogether 51 teachers and 11 headmasters participated in this inquiry. The data was analysed by Microsoft Office Excel and based on this research recommendations for improving the questionnaire for future research in all Estonian general and vocational schools were made.

### **Findings of the analysis of self-evaluation reports**

In 2008, a new model of self-evaluation for Estonian educational institutions was introduced. The first analysis of the Estonian educational sector's self-evaluation system was executed in 14 Estonian general schools in 2008. The authors analysed these self-evaluation reports to see whether the management principles applied in the Estonian education system are in accordance with the principles viewed by Tolofari (2005), who have outlined the performance oriented structural changes in autonomous schools as follows:

- 1) Changed roles and relationships,
- 2) New pattern of governance,
- 3) The flow of resources,
- 4) The accountability,
- 5) Headmasters' role.
- 6) The educational and other values that underpin schooling.

The results of the analysis can be seen below in the table 1. Firstly, it can be seen, that the relationships and roles in Estonian general schools have not changed much. The Estonian schools' self-evaluation reports show that teachers do not understand their role as a school developer. Teachers are only partly involved in the creation and implementation process of self-evaluation, while the development planning and appraising has so far been quite management centred. For example there was only one school where most of the decisions were previously discussed and decided in teams based on consensus. Likewise, there were only three schools where most of the schools' personnel was aware and understood the self-evaluation system and knew their role in the self-evaluation process.

**Table 1.** Results of the self-evaluation reports

<b>Number of schools giving the positive answer (N=14)</b>	
<b>Roles and relationships</b>	
Most of the decisions are previously discussed and decided in teams based on consensus.	1
Schools' personnel is aware and understands the self-evaluation system.	3
Schools' personnel know their role in the self-evaluation process.	3
School implements the concept of learning organisation while its development and evaluation.	3
School has determined its stakeholders.	3
School has involved all important stakeholders in the self-evaluation process.	8
<b>Pattern of governance and the flow of resources</b>	
School has a great autonomy in managing its budget and resources.	9
Local authorities dictate schools' costs, teachers' salaries and workload, and school budget.	5
<b>Pattern of accountability</b>	
School is routinely interested in parents' expectations and needs.	3
School is conducting satisfaction surveys among parents.	3
School is dealing with external stakeholders by conducting surveys among its alumni.	1
School is compiling leaflets for giving feedback to its stakeholders.	1
The board of pupils conducts satisfaction surveys among fellow pupils.	1
The board of pupils analyses and presents the results of the surveys to school management.	1
Schools' approach to arranging the learning process is motivated by a wish to reach every pupil and offer them help to emphasise their individuality and raise their academic performance.	6
Teachers have active and positive attitude towards changes and learning.	2
Teachers are willing to compare their work performance with colleagues.	2
Regularly conduct development interviews which enable feedback for improving school management and performance.	3
<b>Headmasters' roles</b>	
School's headmaster is a leader in developing school development, self-evaluation and teamwork.	4
School has defined the main objectives of self-evaluation.	3
Schools have selected the evaluation criteria and methods to employ self-evaluation.	2
<b>The educational and other values that underpin schooling</b>	
School has determined its values and traditions.	3
Defined values are shared among school personnel.	3

The second study illustrated the same results (see the table 2). Only half (54%) of the teachers confirmed that they were involved to the creation process of teachers' performance appraisal system; 30% of them could not evaluate it and 12% did not agree with that claim. While teachers are not sufficiently involved to the creation process of performance appraisal, dissatisfaction and negative attitudes are more common. Only half (52%) of the teachers answered that the performance appraisal system and its principles were well understood. At the same time this opinion is shared by 82% of the headmasters. Altogether 12% of the answered teachers shared an opinion that they do not understand the appraisal system implemented in their

school. Thus the headmasters' opinion concerning evaluation is much more positive. This result was predictable, because headmasters are those who are responsible for the creation and development of these systems in Estonia and they also decide whether and how much they involve their subordinates into this process.

**Table 2.** Results of the pilot study – appraisal process (N(HM)=11; N(T)=51)

Claim	Totally and rather agree (%)		Hard to evaluate (%)		Rather do not or do not agree at all (%)		Do not know; do not have information (%)	
	HM	T	HM	T	HM	T	HM	T
The appraisal process of teachers' work performance and activities is organised systematically.	82	69	18	22	0	4	0	4
The performance appraisal system and its principles implemented in our school to appraise teachers' performance are well understood.	81	52	18	34	0	12	0	2
In our school, teachers are involved to the process of creating performance appraisal system.	73	54	18	30	9	12	0	4
The appraisal system used in our school enables to appraise teachers' work fairly.	73	44	27	32	0	18	0	6

\* HM- headmasters; T- teachers.

0 - do not know, do not have information; 1 – do not agree at all; 2 – rather do not agree; 3 – hard to evaluate, do not actually know; 4 – rather agree; 5 – totally agree

Teachers should be more involved in the discussion of the school's vision and values, and their awareness of the self-evaluation and the role that personnel has in it must be increased. Also raising teachers' awareness of the organisational theory (e.g. learning organisation) and different methods of self-evaluation is essential. Only three of the analysed schools implemented the concept of learning organisation while developing and evaluating their schools.

The results of schools self-evaluation also show that there is a need to determine the organisation's stakeholders more clearly. Only three schools who participated in the self-evaluation trial period had determined its stakeholders. At the same time it is quite interesting that 8 schools out of 14 stated that they involved all important stakeholders in the self-evaluation process while they had not even determined who those interested parties that should be involved in important processes were. Furthermore, there is a need for schools to set the purposes of co-operation, to plan and implement it, and evaluate the efficiency of the co-operation with stakeholders. Today we can say that the number of schools' stakeholders is too varied and co-operation is rather random. It is also interesting to point out that schools do not see co-operation with stakeholders as being in their interests. The modest results in

public relations may imply that schools are not aware of the impact of public relations to educational institutions' development and reputation.

While talking about structural changes in the pattern of governance and the flow of resources, schools' increased power is being discussed. In Estonia, schools and local governments are largely responsible for organising educational system. They have quite a broad autonomy in regard to making their own decisions. The law says that schools should deal with planning and budgeting, they manage their resources, as well as make their own decisions about whom to hire or fire. Likewise there has been an increase in the competition between schools, and mostly because of the flow of resources. Starting from 2001 the main factor for allocating money to schools from the central government's budget in Estonia is the number of pupils in the school or region. On even terms with public general schools the private general schools are also subsidised from the state's budget. That increases the competition between local authorities who determine their schools' budgets. But although the survey of OECD showed that schools in Estonia should have great autonomy in managing their budget and resources, the self-evaluation reports show that the headmasters' opportunities in managing resources vary enormously, because often the local authorities dictate schools' budget, costs, teachers' salaries and workload, and school budget. Therefore the authors imply that the efficiency of resource management is difficult to evaluate.

Thirdly, concerning the pattern of accountability, the management of Estonian schools has so far been organised externally through the council, which has a mainly consultative role. The self-evaluation system, which involves the schools' stakeholders like the local authorities, parents etc, is unfortunately not systematic enough. For example, only three schools out of 14 are routinely interested in parents' expectations and needs and are conducting satisfaction surveys among parents. Likewise, only one school is dealing with external stakeholders by conducting surveys among the alumni of the school and compiling leaflets for giving feedback to stakeholders. At the same time there is also one school where the board of pupils conducts satisfaction surveys among fellow pupils, analyses and presents the results of the surveys to school management with a view to improve the school's learning process, security and microclimate. Despite the quite modest results in involving parents and pupils, more than half (6) of the schools indicated that their approach to arranging the learning process is motivated by a wish to reach every pupil and offer them help to emphasise their individuality and raise their academic performance. While the new structural changes in the pattern of accountability should also include teachers being accountable to each other, only two schools admit that their teachers have active and positive attitude towards changes and learning and they are willing to compare their work performance with colleagues. There are only three schools that regularly conduct development interviews which enable feedback for improving school management and teachers performance.

The second study showed (see the table 3) that schools mainly take into account the results of satisfaction surveys while planning its activities. 78% of teachers totally or rather agree with that claim and 92% of the headmasters share this opinion. More

than half of the teachers (58%) and 67% of headmasters participated in this pilot claimed that their school is regularly communicating with its alumni. 14% of teachers disagreed with this claim.

One again it is possible to conclude that headmasters have a much positive opinion compared to teachers. A little problematic is that 18% of the teachers could not evaluate whether it is true that school takes into account the results of satisfaction surveys and in the opinion of 26% teachers, they cannot evaluate whether teachers' opinions and proposals for school development and management are important to school managers. This might be a sign of miscommunication or that schools have not conducted such inquiries at all.

**Table 3.** Schools relationship with its stakeholders (N(HM)=11; N(T)=51)

Claim	Totally and rather agree (%)		Hard to evaluate (%)		Rather do not or do not agree at all (%)		Do not know; do not have information (%)	
	HM	T	HM	T	HM	T	HM	T
	While planning its activities, school takes into account the results of satisfaction surveys conducted among pupils and parents.	92	78	8	18	0	2	0
Teachers' opinions and proposals for school development and management are important to school managers.	100	66	0	26	0	8	0	0
School is regularly communicating with its alumni	67	58	33	22	0	14	0	6

\* HM- headmasters; T- teachers.

\*\* 0 - do not know, do not have information; 1 – do not agree at all; 2 – rather do not agree; 3 – hard to evaluate, do not actually know; 4 – rather agree; 5 – totally agree

The authors of this article discuss the structural changes of educational and other values that underpin schooling. The external evaluation system has been in use since 1997 in Estonia. It consists of schools' inspection, national academic standardised tests and national examinations. Based on OECD's comparative study, schools get a lot of information and feedback on their performance from those sources. Lately also the results of OECD PISA (Programme for International Student Assessment) survey have been added to that feedback, where Estonian pupils' performance was assessed very highly. However, the evaluation of pupils' development in the learning process and acknowledging those results needs much more attention. So far, the pupils' development is seen only through academic performance (exams and academic placement tests). 58% of the teachers participated in the second study claimed that while analysing schools learning and teaching process they are analysing the results of national exams. Therefore the efficiency of learning must be viewed more broadly and schools must also analyse whether the supporting systems are implemented correctly and how efficient they are. The analysis shows that the

supporting systems have been well applied but resources' impacts that are directed to supporting systems are often not evaluated. Likewise, the development of school curriculum is weakly related to the evaluation of pupils' development, personnel's development and extra-curricular activities. Also the relations between the school's defined main values and the learning process are lacking. For example, only three of the analysed schools (via the self-evaluation reports) had determined their values and traditions and that these values were shared among school personnel.

Schools' self- and external evaluation is supported by the Estonian Education Information System's database. Each school has the opportunity to see the main indicators that constitute schools' performance and also to compare their results to other similar schools. The self-evaluation report's analysis shows that schools lack the knowledge and skills to understand these performance indicators and therefore they cannot make any conclusions based on that data, and also they are not able to plan improvement activities.

Last but not least, the headmasters' role has broadened; they are now more seen as managers of the organisation. Unfortunately the analyses of Estonian schools' self-evaluation reports imply that the headmasters' knowledge in leadership and management is lacking. The managers of educational institutions need more support in acknowledging the role of leadership and in viewing the connections between leadership and other criteria and results. For example, only four schools admitted that their headmaster is a leader in developing school development, self-appraisal and teamwork. The headmasters admit that they would need more support in setting measurable objectives. The self-evaluation reports showed that only three schools have defined the main objectives of self-evaluation; likewise, only in two schools have the evaluation criteria and methods been selected.

As a result, authors may imply that the situation with self-evaluation in Estonian general schools is not so positive. Schools have a lot to do and they need the support from the state. Likewise headmasters should be aware what the benefits from self-evaluation is and how could they increase school's performance in general. But because self-evaluation was not compulsory for Estonian schools until 2010, many schools have not dealt with this topic yet. Thus this research is also limited and needs further examination.

## **Conclusion**

Self-evaluation in educational policy is seen as a priority in increasing the performance of general educational system. Swaffield and MacBeath (2005) determine school self-evaluation as something that schools do to themselves, by themselves and for themselves. As Towler and Broadfoot (1992) point out, reflection and evaluation can encourage understanding of what is expected, improve motivation, lead to pride in positive achievement and offer a realistic appraisal of weaknesses. Thus professional self-evaluation should guarantee the sustainable development of a school.

Although the analyses of OECD surveys' results show that the organising of the Estonian educational sector is a good example for many countries, the actual situation in schools is not as positive. There are high expectations put on schools by the policymakers' level, but schools do not have the ability to reach them. There is a lack of financial resources, knowledge and organisational willingness.

There should more cooperation and involvement of all the parties – policymakers, local governments, headmasters, teachers, parents and pupils. Because the implementation of new management means and policies usually come with reluctance and negative attitudes, the policymakers' responsibility is dealing with lobbyism among school headmasters and other stakeholders. They should guarantee the necessary financial resources and framework for knowledge sharing, including the precise manuals to carry out self-evaluation.

Likewise headmasters' responsibility is to create the supportive organisational culture for employing new management means. But the problem is that although headmasters are the ones that impose regulations and orders for self-evaluation in their schools, there is a lack in their knowledge in doing it correctly. Also they are usually doing it by themselves, by not involving teachers and other stakeholders into this process. One of the common flaws is that organisations are focusing only on the creation process of the performance evaluation system, but they forget to enhance the communication and employees' involvement. Therefore headmasters should encourage teachers' involvement in the formation and evaluation of their own school policy of efficiency. The self-evaluation should not only be a formality in school but should be seen as a way of raising school performance and effectiveness. Otherwise schools do self-evaluation themselves, by themselves but not for themselves.

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# THE LIGHTHOUSE IN ESTONIA: THE PROVISION MECHANISM OF “PUBLIC GOODS”

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## Abstract

The purpose of this paper is to discuss the incentive structure or the mechanism that defines the private and public provision of public goods. Analytic narratives are used based on historical studies of the provision of lighthouse services in Estonia. The latter allows a theoretical discussion over the boundaries of private initiatives in public good provision and also allows a dialogue with Coasean principles. Findings show that there is no clear-cut division between private and public provision, rather throughout history there have been some combinations of private and public provision. Private agents are only able to provide lighthouses with the aid of supportive institutions – rewards for lighthouse owners and credible threat of punishments to the ship owners. Rewards must be at least as big as costs of exclusion, e.g. central collection of light dues; punishment of the ships that shrink in payment; provision of information about light dues and technical matters.

**Keywords:** public goods, analytic narrative, history of public economics

**JEL Classification:** C72, H41, N4

## 1. Introduction

The purpose of this paper is to discuss the incentive structure or the mechanism that defines private and public provision of public goods. The hypothesis tested states – can pure public goods be privately provided under a publicly provided institutional system? This institutional system may differ, but it is a combination of property rights, legal order and financial support. Methodologically, analytic narratives are used based on historical studies of the provision of lighthouse services in Estonia. The method enables a theoretical discussion over the boundaries of private initiative in collective goods provision and also a dialogue with Coasean principles.

Starting from Coase (1974), a lighthouse is debated as being or not being a perfect example of public goods which instead of private individual or firm should be provided by the government. Looking at the historic mindset until the Coasian “revolution”, we see that lighthouses are considered to be a perfect example for public provision. In Mill’s *Principles* (1984), the government was mentioned as a builder and maintainer of lighthouses. Furthermore in 1883, Sigwick stated: “[...] there are some utilities which, from their nature, are practically incapable of being appropriated by those who produce them [...]. It may easily happen that the benefits of a well-placed lighthouse must be largely enjoyed by ships on which no toll could be conveniently imposed” (Sidgwick 1901: 406). Pigou considered the lighthouse a perfect example of a service where “marginal product falls short of marginal social

net product” (Pigou 1938: 183-184), which is an often used concept to relate the public good provision to the broader issue of externalities. The latter also defines the boundaries of private enterprise and agrees that there are “some indispensable public services without which community life would be unthinkable” (*ibid.*) and thus the role of the government is imminent. Classical writing of Samuelson (1964: 159) states clearly that “[...] a businessman could not build it [lighthouse] for a profit, since he cannot claim a price from each user. This certainly is the kind of activity that the governments would naturally undertake”.

By definition the consumption of public goods is not excludible and nonrivalrous; and the provision is related to nonexistent marginal costs. These arguments are diminishing consumers’ interest in revealing their interest toward such goods and thus the question – is a private enterprise able to provide certain kinds of goods – is more or less the question of ability to charge the consumer. Is charging really impossible? Coase (1974) shows that by the example of the British system all the latter statements must be reconsidered and the “Estonian system” gives similar implications.

The British lighthouse authority – Trinity House – has been, but not always<sup>1</sup>, responsible for the provision of seamarks. However Trinity House has been an ancient institution evolved out of a medieval seamen’s guild, and the patent of the right to regulate pilotage was granted to the institution in 1514. In 1566, it acquired the right to control the maintenance of privately held seamarks, and in 1594 to also place marks. Although Trinity House built some new lighthouses, from 1610-1675 ten were built by private individuals, and none by Trinity House. Also, at this time the King gave patents to private bodies granting the right to levy tolls. Tolls were collected at the ports by private individuals or by custom officials. Tolls varied between the ships, dependent on the size of vessels. In the late 17<sup>th</sup> century, Trinity House adopted a policy of cooperation with private individuals – giving grants for a lease to build and maintain a lighthouse and share profits with Trinity House. In 1820 there were forty six lighthouses: twenty four operated by Trinity House and twenty two by private individuals. Only eleven of them were actually built by Trinity House. Trinity House, because of strong support by Parliament to purchase them, left only fourteen lighthouses to be run by private individuals by 1834. In 1836 an Act of Parliament vested all lighthouses in England to Trinity House, and this was more or less accomplished by 1842. Centralization was justified by the too high light dues.

Leaving the discussion of light dues’ rates open, we note that even a centralized lighthouse service provision has been based on the collection of dues from ship owners. Thus the orthodox argument is overruled – ships were made responsible for their own “consumption” of lighthouses. And the lighthouse services were not financed from general state revenue. For a comparison, let us have a few insights into the Estonian experience of providing such services.

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<sup>1</sup> The review of the British system is based on Coase (1974, p. 362-372).

Compared to the British sources, no systematic study of the financing of the building and maintaining of Estonian Lighthouses exists. The memoirs about the history of lighthouses provides us some insights. Luige (1982) states that Estonian lighthouse history started at the second half of the 15<sup>th</sup> century, when the Hansa league was initiating the building of the Kõpu lighthouse. The Swedes initiated building two more lighthouses in 1646. From this time on, private individuals were maintaining and building lighthouses even after the Uusikaupunki Peace Treaty by which Estonia became part of the Russian Empire. The Swedish-German nobility retained the privileges of owning and charging tolls. Although all new seamarks were initiated by the state primarily for military purposes, the toll or light dues were still collected from ships. Almost all lighthouses and other main seamarks were finally owned by the state in the end of the 18<sup>th</sup> century. At least seven new lighthouses were built by the central authority and one by a private initiative during the second half of the 19<sup>th</sup> century, increasing the total amount of lighthouses and marks to approximately fifty. During the first Estonian Republic (1920-1940) a new agency – *Mereasjanduse Peavalitus* – was created, which outsourced building to private firms until 1934 and was still financed from light dues. Starting from 1934, thirteen new lighthouses were built by the state brigade, all financed by the state budget. This system came to an end in 1940 after Soviet occupation.

The preceding review of the Estonian system is far from complete, and a more detailed description of the Estonian system is one of the objectives of the current study. Collected data (mainly archive documents) are used to construct an analytic narrative. This narrative is a combination of a rational choice game, theoretic deductive logic and historical study. Narratives are not used, like historians or anthropologists usually do, for describing ethnical and cultural ideologies building up people's identities, rather *vice versa*. The analytical part of a narrative is coming from the analysis of choice rules and payoffs of the individuals using non-cooperative games. Bates *et al.* (1998: 10) proposes that "...it [analytic narrative] combines analytic tools that are commonly employed in economics and political science with the narrative form, which is more commonly employed in history". What is meant to be a narrative and analytic is explained – "Our approach is narrative; it pays close attention to stories, accounts, and context. It is analytic in that it extracts explicit and formal lines of reasoning, which facilitate both exposition and explanation" (Bates *et al.* 1998: 10). Games are used to make the framework comprehensive, while archive, anthropological and ethnographical sources are mixed to provide information for reliable narrative building.

The paper proceeds as follows. Section II gives an overview of the theoretical discussion over the public-private dilemma. Section III reports on the relevant history. Presenting the history is not a subject on its own. It encompasses the narrative, which is used for building the game theoretic analyses. Section VI presents the "rules of games". These institutional rules may permit or promote private provision. Section V discusses the narrative in the light of a game theoretic model and alternative academic findings. The conclusion is the elaboration of ideas that give historical insights into the current mindset over the boundaries of private-public dilemma, if there is a dilemma at all.

## 2. Private versus public – discussion of theory

The terminology of public goods was developed in economics by Samuelson (1954) and has been expanded later on by many. Head (1974) enumerates ten different characteristics of public goods: decreasing costs of production; externalities; joint supply; nonexclusion; nonrejectability; benefit spillovers; unenforceability of compensation; indivisibility; nonappropriability and nonrivalness. We can add the free rider possibility (Buchanan 1975: 207) and lumpiness (Head 1974: 168). Many of these characteristics are evidently related to each other and thus reduction to a few crucial ones is possible. According to Ver Eecke (1999), the ideal concept of public goods has only two factors that distinguish those from private goods: (1) they are “joint in supply”, so that consumption by one person does not diminish the amount available to others (also called nonrivalness). (2) They are “nonexclusive” so that if the good is available to one person, it is automatically available to all others. This narrow economic interpretation of public goods helps to define two main problems of the public goods provision. The first problem is that if one person purchases public goods, others will also be able to consume the goods and thus take a “free ride”. That arises the question of the “fair distribution” of costs – who must pay for public goods? The second problem is the optimal or at least suboptimal provision of the good. The possibility to free ride gives consumers an incentive not to reveal their preferences for the goods and hope that others will meet the costs of their provision. This result lowers the level of production less to than optimal from a societal standpoint. Pigou (1932) states that this constitutes an externality problem – marginal revenue and social marginal benefit is much higher than the marginal cost of production.

If our aim is to assess the possibility of private agents to provide public goods, then both factors need clarification. First, “jointness of supply” technically means that each of the next customers will not create any additional costs to the provider, thus marginal costs of extension ( $MC_e$ ) are zero. This doesn't mean that the second type of costs – marginal costs of production ( $MC_p$ ) – are zero as well. But public goods are not free goods, and  $MC_p$  can be positive and decreasing. In the case of lighthouses, we have high fixed costs but also nonexistent  $MC_p$ . Thus a lighthouse is a perfect example of good that satisfies the first necessary condition from the definition of public goods.

Second, it is important to understand that “nonexclusivness” is not the same as the producers' inability to control exclusion (Snidal 1979: 541). If producers cannot control exclusion, the marginal cost of exclusion ( $MC_{ex}$ ) is infinitely big. The level of  $MC_{ex}$  will depend on many aspects, but most of all the physical properties of the good and the social context of the consumption. The latter is a combination of social structure, government power and property rights. It is clear that the physical conditions of the lighthouse do not make exclusion a low cost activity. However, the social context – protection of the property rights facilitated by a strong powerful central force and enforcement of laws can lower the  $MC_{ex}$ . Thus even in such goods where physical properties will not make exclusion easy, it may be possible to exclude “free riders”.

Conclusively the ideal type of public goods is defined by  $MC_e=0$ ,  $MC_p=0$  and  $MC_{ex}=\infty$ . Snidal (1979) states that if

$$MC_{ex} > MC_p, \quad (2.1)$$

then no private attempt will be made to exert exclusion over the goods, since control over exclusion is more costly than the provision of the units themselves. Therefore all production in this range will be in terms of public provision. Theoretically, in the case of lighthouses, private provision is possible only when social context will totally take over the control of consumption, meaning that for a private producers  $MC_{ex} = 0$ . Thus the notion of control over the exclusion is the fundamental question and the existence of an authority system to enforce price exclusion is a vital question.

However the question remains – is the public control over price also enough to ensure economic efficiency in private provision of public goods? It is clear that any restriction on the distribution of the goods having jointness in supply that serves to restrict the extent of distribution of already produced units of those goods is suboptimal. Whenever  $MC_{ex} = 0$ , then, if there exists any potential consumer who has positive marginal benefit from the good, optimality requires that the good be extended to them. Thus the ideal price system from the efficiency perspective would be a system of perfectly discriminating monopolist who has perfect knowledge of the preference functions of all shippers. This system will grant Pareto efficiency and private provision of the lighthouses at the same time. How difficult is it to collect information about these preference functions? Generally speaking not too easy, but we may use proxies because in ports there it is quite easy to acquire information on particular vessels, such as length, draft, gross tonnage, cargo, owner, etc. It should therefore be straightforward in terms of levying a charge on any such a ship entering a port (Baird 2004: 378). Those who refuse to pay such charges would be subject to legal proceedings brought against them.

Of course we may state that the Snidal condition ( $MC_{ex} > MC_p$ ) does not pay any role to a public benefits created by the seamounts, ports and lighthouses in general. Public benefits such as the development of maritime trade as a part of the creation of economic welfare, or public military interest related to territorial claims or mercantilist public benefits from greater territory, have not been included in the analyses. The “standard efficiency condition” related to large-number case is set by

Samuelson (1954) that  $\sum_{i=1}^n MRS_i = MRT$ , where  $MRS_i$  is  $i$ 's individual marginal

rate of substitution between the public goods and arbitrarily chosen private goods and  $MRT$  is marginal rate of transformation between the same goods. MRS can be interpreted as the disposable income the economy is ready to sacrifice for an additional unit of public goods (Bergstrom *et al.* 1988). In large  $n$  situations “welfare calculus”, like “Samuelson efficiency condition” demands, has a marginal analytic value, because of the subjective and dynamic nature of vital information. *Ex ante* predictions are hard or impossible to make.

However in some circumstances lighthouses could provide this additional utility to only certain restricted groups, such as local seamen or local village in general. Thus in some circumstances lighthouses can rather be club goods, which are excludable with congestion (Buchanan 1965). Buchanan (1975) suggests that in small groups organization and enforcement of efficient institutional arrangements for provision of such goods is possible, but rarely successful under a large  $n$ . Wicksell's unanimity rule (Buchanan 1975) also supports the argument that the free-rider motivation can be eliminated only when an individual is made aware that their own choice among alternatives does affect, and in some positive and measurable sense, the outcomes of others in the group, even if the membership is large. This of course leads us to the game theoretic definition of the public good dilemma.

To illustrate the need for institutions, Taylor (1976) established public-goods problems as prisoner's dilemma (PD) game where agents can state true preferences or lie about their rates of marginal substitution between public goods and an all purpose private goods. Taylor (1976) showed that if no binding contracts can be enforced between the agents, a nonoptimal equilibrium will result in which the public good would be underprovided. If there is no planner who has information about the preferences of the agents, then it is difficult to imagine that planner can organize the economy efficiently. Although, as is the case for Shubik (1973) and Hurwicz (1973), social institutions can have various rules of conduct that are defined by the planner and whose definition determines different  $n$ -person games. This kind of institutional scholarship suggests that planners devising optimal allocating mechanisms will make agents reach towards an optimal equilibrium (Schotter 1981). This will lead us again to the idea, that for the private provision at least some kind of institutional mechanism is needed; either for (1) lowering or ceasing the costs of exclusion; or for (2) changing the game structure so that private agents have incentives to reach to the optimal allocation in PD framework.

### **3. Narrative: The Estonian system**

Chronologically we can divide the Estonian lighthouse system into four periods: (1) The Swedish and Hansa period of foundation (from the first half of the 16<sup>th</sup> century till the end of the 17<sup>th</sup> century); (2) Private property under the Russian Empire (18<sup>th</sup> century); (3) Nationalization (19<sup>th</sup> century till the Estonian Republic in 1920); (4) State and private partnership (1920-1940). The division is initiated from an institutional ownership framework and has only analytic purposes. In all periods we are interested in special features of the system – ownership; who is the provider of service; financing (also administration of it); and initiation of the construction. The change in the general state structure can also initiate the quick alteration of the ownership structure, however the change may also be gradual; vested interest of agents and institutional setup can make quick changes impossible, thus presented chronology will not perfectly reflect change of political regimes.



### 3.1. Foundation

The earliest evidence of the first light-marks reaches us from the first part of 16<sup>th</sup> century. The ownership form of those is not that easily definable – most probably it was some kind of mixture of private and public.

In 1697 *Placat* announces Swedish rules defining punishments to local communities who damage drifted ships and sailors, showing that social evolutionary institutions – consuetude was not self-enforcing. However according to Spafarjev (1820: 10) there existed the so-called ancient *Stranda*, that was an informal institutional rule; according to which “rescue teams” (who where either owners of the private light-marks or local community members) received a part of the rescued cargo. The first indicates the public interest in marital affairs and the second the existence of the “global” informal rules. The economic development as an indicator of naval activity is probably vital here, because initiators of the building of the Kõpu lighthouse in 1531 was Hansa or more concretely the Revals Magistrate, and this encounters a flourishing era for the Hansa League. Kreem (2008) assures that in the case of Kõpu most of the finances came directly from Revals Magistrate, but if they were part of the taxes from the general city revenue is not known, although it is known that buoys mounted near Reval were financed by a separately levied tax. After the building of Kõpu the economic slowdown, that endured approximately a hundred years, started (Küng 2004: 19). This is probably why there is no information about the operation of the lighthouse, and it may even be doubted if the light-mark was operational until 17 century (Luige 1982: 15).

Later the Swedish state became the initiator of building other sea-marks. Relying on Küng (2004: 21) we may argue that Hansa and other private merchandise became a state interest – competing with the threat of the Netherlands sea-monopoly; interest in increasing tariff revenues; and interest in creating a fleet and navy. Offering tariff abatements for Swedish ships was reactivating navigation and in 1646 building of the wooden lighthouses in Sörve and Ruhnu was initiated. Permission to build lighthouses was given to local land owners and this regulation was in force till the 19<sup>th</sup> century and in the interest of local navigation probably also later. However, (as far as we know) in this period the initiators were Hansa, the City Magistrate or Swedish state; and local nobility only built-maintained and also received financing for their effort. As a matter of fact the cost of building and maintaining was high and was assigned to local peasants-bondservants for “optimization” purposes. Costs were financed by collecting light dues from local ports. Luige (1984) assures that all cargoes landing in Riga, Pärnu or Kuressaare were taxed, light dues were four state thalers<sup>2</sup> per ship.

A new economic boost in the Baltic Sea took place at the end of the 17<sup>th</sup> century, with the number of vessels under the “Estonian towns” flags increased almost tenfold (Küng 2004: 25). During the same era the cargo fleet of Estonian and Livland towns was founded (Küng 2004: 27). However, May (1936: 87) confines

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<sup>2</sup> According to Vanamölder (2007) this was approximately the price of 25 kg of wheat.

that in the year 1750, Estonia had only six lighthouses: Kõpu, Keri, Suurupi, Pakri, Sõrve and Ruhnu. The building of three of them – Keri, Suurupi and Pakri – can be enrolled to the “good old Swedish times”. Keri or Kokskäri was ready in 1721, Suurupi was not fully ready until 1760, and the exact foundation date of Pakri is not known, but it was ready before Peter the Great died in 1725.

### 3.2. Private property under the Russian Empire

The 18th century is a new period in ownership-relations. All seamarks under the Russian Empire were officially subordinated to the Tsar State Admiralty, who became a new initiator of building new lighthouses. According to the 1721 Uusikaupungi Peace Treaty Kõpu, Ruhnu, Kolka (Domesnäsi situates in current territory of Latvia) and Vaindloo (Stenskäri or Seiskari was built by 1718) went under Russian supervision. At the same time, all of the aforementioned lighthouses, excluding Vaindloo, still remained under the well known Swedish-Baltic nobility, Osmussaare (built in 1765) was finally given to the state only at the beginning of the 19<sup>th</sup> century (Luige 1984: 28) and Kõpu even later. The institutional structure probably remained unchanged as a part of concessions the state made to the local nobility for their support (Laur 2000: 31). Till the 18<sup>th</sup> century there was no major change in this so called Baltic special-order and only laws, which were not antagonistic to the local confirmed privileges, were applicable in the Baltic territory (Laur 2000: 203). According to privileges, half of the light dues collected from cargos were distributed to the owners (Luige 1984). Light dues were probably collected in custom offices which according to Laur (2000: 60) were located in Pärnu, Kuressaare, Tallinn, Haapsalu and Toolse.

The customs-officials were not subordinates of the provincial government; and whereas the importance of tolls among state revenues was substantial, the size of the bureaucracy of customs was remarkable. Although in all other state-institutions the working language was still German, in customs it was Russian (Laur 2000: 62). At least some orders were taken directly from the “central government”, for example in 1723, the decree of Peter the Great ordered that in dark nights the lights must be ignited only when their “own” ships were on the sea (Luige 1967: 27). Economic policy preferred Petersburg’s port to Riga and Tallinn, also custom tariffs and bans on grain export diminished the amount of cargo remarkably (Laur 2000: 173-176). Probably existing lighthouses still operated. And privately run lighthouses were still operated – equipped with wood and lights maintained – as a natural burden by local serfs (Aitsam 1937: 26). For meeting operation costs, owners received direct allowances from the state and/or according to the contracts still half of the light dues were distributed to owners. Aitsam (1937: 27) states that in the case of Kõpu, there was a contract, according to which 3000 roubles were paid annually for the maintenance of the lighthouse. Predictably the contract was due even until 1910. In addition all kinds of renovation expenditures were met separately (*Ibid.*).

During the second part of the 18<sup>th</sup> century only one more lighthouse was privately built – Osmussaare (May 1936: 87). The first twenty years of the 19<sup>th</sup> century gave a boost to public lighthouse building

### 3.3. Nationalization in the 19<sup>th</sup> Century

The reign of Catherine II also brought changes to the so called Baltic special-order, which had been tolerated for a half of a century. Attitudinal change resulting from the legal change in Baltic affairs also gave ground to alterations in lighthouse legislation. “Global” ideological change probably also played a role: in Britain, an ideological change against private profit earning was emerging (Taylor 2001: 750). There were also some bureaucratic changes as Leonti Spafarjev was appointed as the Head of Lighthouse Supervision and stayed in the position for 35 years (Luige 1984: 38). Spafarjev called for many changes and reorganizations. All publicly owned sea-marks located in Estonian territory were divided into two expeditions of Kronstad and Tallinn. The rest of the lighthouses (e.g. Kõpu, Ruhnu and Osmussaare) were probably privately run. Spafarjev stated that lighthouses in private hands were unsafe, had obsolete technology and hindered safe navigation (Spafarjev 1820: 10). In addition, he condemned the ancient *Stranda*, which delegated part of the cargo to the savours: “This rule can be efficient only accompanied by affection to fellow man and sense of righteousness, which must dominate over greed” (Spafarjev 1820: 9). The military aims must also not be underrated, as there were accusations that the light-ship crews are not sufficiently state-minded (Dampf 1935). In 1805, Spafarjev was ordered to compile data for budgeting the building of new lighthouses. According to Luige (1967: 28) Admiralty-department decided among other things also transfer Kõpu from private hands to public ownership. The grand plan of Spafarjev’s was almost completely implemented. During the first twenty years of 19<sup>th</sup> century, 13 public lighthouses were built, the majority of Finnish and Riga Gulf lighthouses were renovated, and also two light-ships were manned.

In 1807, the majority of lighthouses went to public hands (Mey 1936: 86), but private lighthouse ownership did not disappear completely. Mey (*Ibid.*) states that two Kolka lighthouses, which according to the old Swedish privileges from 1608 belonged to Duke Osten-Saksen, remained the owner’s. Aitsam states (1937: 27) that Kõpu also stayed in private hands and its owner Duke Unger-Sternberg possessed also two additional lighthouses - Paralepa and Hobulaiu (Tallinna Kinnistusamet 1939). There were probably some other local sea-marks or lighthouses, that have been noted in Duke Nolcken’s correspondence (Nolcken 1923; Nolcken 1926) about the Postrova lighthouse in the Alatskivi manor (at the shore of lake Peipsi).

At the end of the 19<sup>th</sup> century, there were about fifty lighthouses and sea-marks. By then, new technology of metal construction prevailed. The first concrete lighthouse was constructed at Viirelaid (Paternoster) in 1857, followed by new lighthouses of Keri (1858), Vormsi (1864), Kihnu (1865), Virtsu (1866), Vaindloo (1871) and Tahkuna (1875). All aforementioned were public premises. There is data about building at least two private lighthouses during this period – in 1840, Ungern-Sternberg built a lighthouse and a keepers-house (later a pub as well) in Harilaid. One wooden lighthouse in Käsmu (1891) was initiated by the local community, financed from fines collected from drunk captains (Luige 1982: 49).

### 3.4. State ownership during the Estonian Republic

The Estonian Republic placed the Department of Waterways (under Transport Ministry) in charge of the maintenance of lighthouses. All private lighthouses belonging to the local Baltic nobility were nationalized together with accompanying manor lands. After nationalization and reallocation of the manor lands, some sea-marks remained on the privatized lands. These lighthouses (Paralepa and Hobulau) were separated from the farms and compensated by the state (Tallinna Kinnistusamet 1939). Renationalization of land under sea-marks lasted until 1939 (Riigikantselei toimik 1939, 1940).

According to payrolls from 1920, the Lighthouse Department had thirty four lighthouses in addition to pilot and rescue-ports. The Lighthouse Department became a contractor to private firms, technical supervision remained the responsibility of the Department of Waterways. In 1934, instead of continuing a private-public partnership, a state brigade started to build and renovate lighthouses. During the following eight years, this brigade built twenty five reinforced concrete lighthouses (Luige 1982: 72).

The revenues of the Department of Waterways came from port dues. According to *Riigiteataja* (1924), differentiated port dues were collected from foreign and domestic vessels, as well as from sailing, steam or motor ships. Port dues consisted of pilotage, lighthouse and cargo fees; also dues for lifesaving, for sailors' retirement homes, for social security, for ice-breaking, for fresh water, and for winterization. Light dues were only paid in the first port in the territory of Estonia and were not dependent on the number of visits to other ports. Light dues were dependent on pilotage, and domestic vessels paid annually for eight voyages, foreign-going vessels for four voyages. Depending on the aforementioned criteria, light dues stayed in between 0.24 to 0.3 golden francs<sup>3</sup> for each net registered ton of cargo. In 1924 port tariffs changed only marginally the arrangements that had been set in 1921 (Riigiteataja 1921).

Although all lighthouses belonged to the state, some private ports remained: Kunda, Tallinn-Beckeri, Tallinn-Balti Shipyard and Kärđla port. State covered costs related to sea-marks also in private ports (Kõpu 1930). All lighthouse servants were on the state payroll, and had long term contracts. In 1930, there was a political initiative to transfer fourteen "strategic" lighthouses under the supervision of the Defence Ministry and substitute life-time servants with soldiers, but this proposal didn't find support in the Senate (Riigikogu kantselei 1930). In state ports, pilots were also on the state payroll, but private pilots in Harilaid and Kärđla were probably also self-employed, because they can not be found on the state payrolls (Kõpu 1930).

On 15<sup>th</sup> May 1940, the Soviet Military Commandatory announced to the Estonian Government that according to the Molotov-Ribbentrop pact they would take over the following lighthouses: Pakri, Osmussaare, Tahkuna, Ristna, Kõpu and Sõrve

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<sup>3</sup> This is approximately the price of ½ kg of butter.

(Sõjamineisteriumi toimik 1940). In addition, a few months later, a telegram was sent letting the Government know that the Soviets have the intention to also take over the lighthouses in Suurupi, Naisaare, Keri and Juminda. Later many other lighthouses were also handed over.

The Department of Waterways was liquidated on the 1<sup>st</sup> January 1941, and all its responsibilities, excluding military holdings in the above-mentioned lighthouses, went to the newly created agency of *Merelaevandus* (Luige 1967: 35). At that time, there were 140 different sea-marks for navigation purposes in Estonian waters: 117 lighthouses, 20 light-buoys and 3 light-ships (Luige 1967: 36).

#### 4. The Lighthouse Game

Non-cooperative game theory is typically used to explain the prisoner's dilemma characteristics in the public goods' dilemma (Schotter 1981). The illustration of a free-rider problem in a  $2 \times 2$  matrices indicates that the players' optimal strategy is to hinder information about their true preferences in public goods. Non-cooperative games are also used in experiments, where different aspects of the dilemma are studied. Dawes (1980) showed the role of small groups; Maxwell and Ames (1980) and Axelrod (1984) indicated the vital role of repeated action; Schwartz-Shea and Simmons (1993) presented the importance of framing; and Turner (1981), Kramer and Brewer (1984) introduced the role of group identities. In experimental games the PD is typically presented via return function – choices of the individuals are contributions to the cost and payoff functions depends on the total contributions of the players (Goetze 1944: 66). Experiments also indicate that the credible threat of punishing will solve the under-contribution problem in the public goods games (Noussair, Tucker 2005; Bochet *et al.* 2006). However there are not many empirical papers, besides experimental ones, which rely on non-cooperative games. Bates *et al.* (1998) starts almost a methodological innovation in this area. One of the proposals of this methodological “new wave” is to use structural solutions in explaining empirical phenomena. Structural solutions change the rules of the game through modifying the social dilemma (Swedberg 2001). Altering payoff profiles, affecting available strategies or including players – all these belong to the toolbox of structural solutions. The current model follows the “new wave”.

Our lighthouse game, as a public-good provision game, is a PD where two players, “private owner of the lighthouse” (*lighthouse*) and “ship owner” (*ship*), both have two options. The *Lighthouse* can provide either credible or non-credible service, and the *ship* may pay light dues in the nearest port or evade the due. The credibility of the lighthouse has been an empirical problem mentioned in all eras of our narrative and is considered one of the main reasons for public interference by Spafarjev (1820). Also commonly told stories about shore-robberies and false lighthouses were common even continuing up to the present, supported by Otzen-Hansen (1884) and Aitsam (1937). The *Ship* has the classical choices of a free-rider – to pay or not to pay. Payoff profiles indicate possible interdependent mutual payoffs related to the benefits from service and related costs of providing goods or paying for it. In figure

1:  $b_1$  are the *lighthouse* benefits paid by the *ship*;  $c(t)$  indicates the costs of providing credible service, where  $t$  stands for technology;  $C$  is the fixed costs of providing “false lights” and  $b_2$  are benefits to the *ship*.

In such a game both players have a dominant “action” and the game has a Nash equilibrium in payoff profile  $(-C; 0)$ , indicating that the *Lighthouse* will provide non-credible service and the *Ship* will not pay. Of course this classical Prisoner’s dilemma result is not Pareto efficient. Both parties are kind of trapped into bad outcomes, instead of credible service and payment they both optimize and lose. A normal form game assumes that players act simultaneously, but even if we add a time element to the game, and assume that payment is made after the credibility is checked, we end up with the same result. Technically speaking – the prisoner’s dilemma will not allow an easy solution by making games extensive. A time element can allow a ship to assess the credibility of a *lighthouse* service in the first stage and hence the *ship* can make the payment decision in the next port. Unfortunately the time element will not get us out of bad outcomes. However the normal form or extended form setup of the game demands that players have one-time interactions only. In repetitive setup, where interactions are frequent, all kinds of strategic outcomes are possible. Axelrod’s (1984) optimistic standpoint about the human ability to cooperate in repetitive games is well known. However, in our case a close face to face interaction is not taking place and the credibility of such reputational or strategic solutions is questionable.

		<i>Ship</i>	
		Pay	Not pay
<i>Lighthouse</i>	Credible	$b_1 - c(t); b_2 - b_1$	$-c(t); b_2$
	Not credible	$b_1 - C; -b_1$	$-C; 0$

**Figure 1.** The lighthouse game.

Structural solutions involve, for example, a change of rules of the game by changing rewards or punishments related to the game which allow players to change their behaviour toward more cooperation or by changing the structure of the game directly by adding or subtracting the players (Rittberger 2003). This “third party” can be either some social norm, which will affect payoff profiles of the players, or more formalised institutional body, e.g. government or some other body that can protect property rights and enforce contracts (Van Vugt 1998). This “third body”, which will simply be called the *institution*, can implicitly affect the structure of the game directly or through payoffs, in both cases *ex post* payoffs will be affected. Also we assume first that the institution itself has no preference order, although the latter in the case of an institution widely defined – institution as an organisation – we make the institution explicit. In the first step we add a narrowly defined institution according to North (1990) – institutions are the rules of the games – which have no

preference order of their own. Thus we can still use the 2x2 normal form game structure (see Figure 2).

		<i>Ship</i>	
		Pay	Not pay
<i>Lighthouse</i>	Credible	$b_1 - c(t) + r; b_2 - b_1$	$-c(t) + r; b_2 - p$
	Not credible	$b_1 - C; -b_1$	$-C; -p$

**Figure 2.** The lighthouse game with rewards and punishments.

In Figure 2 we add punishment and rewards to the *lighthouse game*. Let us assume that a credible provision of the lighthouse service will be rewarded by some fixed amount  $r$  and not paying by threat of legal punishments (or community punishments) is indicated by  $p$ . If  $r > c(t) - C$ , where  $r$  is some type of reward for a provision of the good, then a non-credible provision will be the dominated action, but it makes “not pay” a rational temptation. Thus we need another instrument to make payment credible. If  $p > b_1$ , where  $p$  is some sort of punishment for not paying, then such a game has a self-enforcing property – players will reach to the Pareto efficient outcome and the properties of the prisoner’s dilemma are lost. From the *state* perspective, the game has a weakly dominated Pareto efficient equilibrium when:

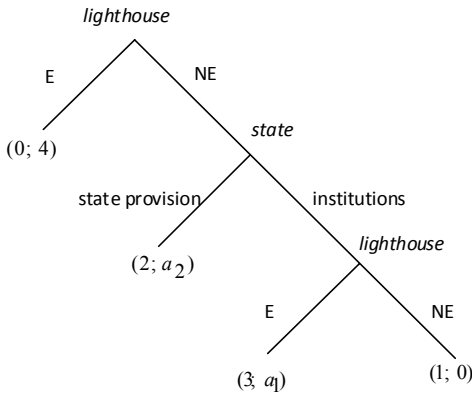
$$\begin{aligned} r &\geq c(t) - C \\ p &\geq b_1 \end{aligned} \quad (4.1)$$

indicating that *the state* has to provide the private body a reward, which is at least as big as the difference in the costs of operating a credible service. Assuming that  $C$  indicates fixed costs of building and  $c(t)$  indicates the total costs, then the reward must be at least equal to the variable costs of providing the lighthouse service (although these variable costs are not affected by quantity of ships consuming the service and still  $MC=0$ ), plus the costs of extension. In the late medieval and early modern age, where technology ( $t$ ) gives local landlords comparative advantage in running the operation of the lighthouse compared to some central (merchant or city) institution, it is imminent that expected rewards could have been relatively lower. Technological change affects the optimal combination of capital and labour, so that more technology specific capital and labour was needed for building a lighthouse – first in the late 19<sup>th</sup> century with the Gordon system and later in the early 20<sup>th</sup> century when reinforced-concrete was used. This gave a comparative advantage to specialised units for constructing a lighthouse. So the private costs for building a lighthouse went up despite  $dC(t)/dt < 0$ .

If the conditions (4.1) are satisfied, then the punishment ( $p$ ) is just a credible threat and that is why we are not able to indicate any narratives related to punishing the ships that didn’t pay light dues. Although payment  $b_1 \leq b_2$ , indicate that if ships

have “subjective” preferences and benefits from the service, then payment must also be discriminating among them.

Now we take one step further and make the preferences of the state explicit. We assume that *the state* has certain military or trade growth related preferences to control the provision of the lighthouse service – assuming that the state has clear preferences that a certain efficient amount of lighthouse services have to be provided. This can be accomplished through private or public provision. In the first stage of the game *the state* just observes the choices of *the lighthouse*, who can either provide an efficient (E) or not efficient (NE) amount of service. In the second stage of the game *the state* can, in the case of NE, provide goods on its own or create institutional support for efficient private provision. In the third stage *the lighthouse* makes again its choice over efficiency of provision and then the game is over (Figure 3).



**Figure 3.** *The state and lighthouse game.*

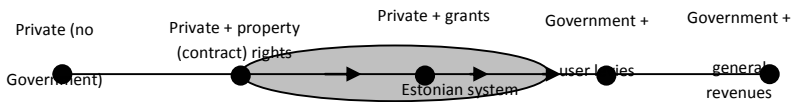
Payoff profiles in the state and lighthouse game indicate cardinal utility coefficients. In the first stage *the lighthouse* has a certain incentive to choose NE and in the last stage *the lighthouse* will choose E. Thus the subgame perfect Nash equilibrium will depend on the relationship between  $a_1$  and  $a_2$ . If  $a_1 > a_2$ , then *the state* will provide the institutional framework described in the “lighthouse game” in Figure 2, and the game will end up in the third stage by  $(3, a_1)$ . But if  $a_2 > a_1$ , then *the state* prefers to provide public lighthouse services and the game ends in the second stage. The ideological change – the alternation of the importance of military power, trade dominance or other chauvinistic attitudes of the state – will also affect the preference ordering over  $a_1$  and  $a_2$ , and thus affect *the state* strategies. Although it is worth mentioning that *the state* has no dominant strategy in this game and *the lighthouse* has a weakly dominant strategy NEE, which makes NE the optimal choice in the first stage and E in the last stage, independently from other player choices.



## 5. Back to the narrative – Discussion

Summing up the results of the previous section, we may say that the private provision of lighthouse services is possible only when there is some institutional frame to support private activity. This institutional support must have two components – a credible threat to punish shirking ships and a reward system for private providers to lower the costs of provision. The latter is consistent to the Snidal condition (2.1). The extensive form game (Figure 3) indicated that if the state has their own preferences over possible outcomes it may not provide institutions for efficient operation of private sector, but rather provide lighthouse services publicly. Now we turn back to the narrative to confirm that theoretical founding can be verified.

Our four-period description of the Estonian lighthouse system shows that lighthouses were never purely publicly provided nor purely privately provided. In Figure 4 we are using the structure of Van Zandt (1991) poles, where the public-private dilemma is not a dichotomy, but divided into certain poles: (1) private provision with no government enforcement; (2) private provision with government enforcement of property and contract rights only; (3) private provision with government fixing rights, granting monopolies and enforcing collection of specified user levies; (4) government provision from collection of specified user levies; and (5) government provision from general revenues.



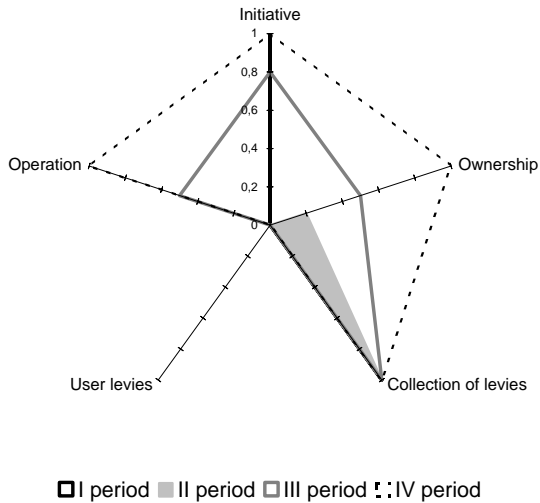
**Figure 4.** Estonian system and Van Zandt (1991) poles.

We see that historically the Estonian system has moved step-by-step from a private provision with a central collection of grants and some state initiative over allocation of public goods to a public provision. At the same time the system never reached the extreme – lighthouses were not financed from general revenues. At the same time the government played a substantially greater role in the provision of lighthouse services than Coase’s term “private” suggests, the same is shown by Van Zandt (1992: 48). Of course we may argue that almost every market needs some kind of institutional support and in this regard enforcement of property rights may not be a substantial government involvement, and this is not worth mentioning in the lights of Nozick’s (1974) minimal state definition. Of course Nozick (1974) and others (Ellikson 1991; Umbeck 1981; Van Zandt 1991) show that the private provision of property rights is possible and is a historical fact, but in our case we see that the government has played a certain kind of regulatory or initiative taking role in every period – declaration and collection of lighthouse dues.

The theoretical model gives the explanations why the system moved towards a more public provision – this was due to technological change and “public” interests. “Public” interests were military and naval ambitions of the Russian Empire which emerged during Peter the Great and also had some element of distrust to the Baltic nobility. These features weakened after Peter’s death and re-emerged during Catherine the Great’s reign. During the Estonian Republic the cost argument due to technological change to the Gordon system and later to the reinforced concrete constructions, justifies the change. The public ownership during this period was mainly the result of historical consequences – nationalisation of all land holdings of Baltic nobility.

Comparing the stake and structure of public institutions in lighthouse affairs (figure 5) we see that periods have differed. We subtract five characteristics of the provision process – (1) who made the decision over building the lighthouse (initiative); (2) who was the legal owner of the asset (ownership); (3) who collected and declared levies (collection of levies); was the production financed by actual consumers or from general revenues (user levies); and who operated the lighthouse (operation). In the figure the origin of axes (zero) stands for private provision and the end of axes (one) for public provision.

Period I is a foundation period (described in section 3.1); period II is a period of private property under Russian Empire (described in section 3.2); period III is a nationalisation period in the 19<sup>th</sup> century (described in section 3.3); and IV period is a state ownership period during the Estonian Republic (described in section 3.4). In period I there are two characteristics provided by the state – initiative and collection of lighthouse dues levied from the ship. In period II there is already some state ownership and only private initiative taking. In period II most of the initiative, approximately half of the operation and ownership, was public. In the last period only user levies were still paid by private consumers. So periods differed by the institutional framework provided by the state. Only the collection of lighthouse dues by custom officials in the ports was common to all periods. So the cost of exclusion for private providers was zero in all periods, which is also consistent to the Snidal (2.1) condition. In period I the foundation of an impersonal “lighthouse market” was mediated by the Hansa league or the city council of Reval, the city which mainly benefitted from eastern Hansa trade. Also the initiative over questions, such as where to build and how to operate, were in central hands.



**Figure 5.** Five characteristics of the institution (0-private; 1-public).

Basically the central body only contracted out building and operation by offering light dues or a proportion of it. During the early “Russian days” in Estonian territory the persistence of the previous system lasted, although Peter the Great recognised the military importance of lighthouses, but he died in 1725 being able to govern the territory for only 4 years after the peace treaty. Instability of the state erased private and state initiatives of building new lighthouses. Only at the beginning of the 19<sup>th</sup> century did the state take the initiative of organising lighthouse affairs, this also brought along many new lighthouses and an attempt to take over some private ones. However the legal system protected the property rights of the local nobility and despite of the preferences the state was not able to take control of all the lighthouses. Still some private lighthouses were built on private land. The Estonian Republic nationalised the lighthouses and the state also provided the service, although there was some private contracting in building lighthouses in the early days of the republic. Also it is interesting to draw attention to the system of lighthouse levies – price discrimination between domestic and local vessels, by tonnage and by type and power of engine. Assumable this kind of pricing has historical roots and this indicates that a private system might have been efficient. We see that historically the Estonian system has gradually moved from a private provision with a central collection of grants and some state initiative over allocation of public goods to a public provision. The system never reached the extreme – lighthouses were not financed from general revenues. However, the state played a substantially greater role in the provision of lighthouse services than Coase’s term “private” suggests. The same is shown by Van Zandt (1992: 48). Of course we may argue that almost every market needs some kind of institutional support and in this regard enforcement

of property rights may not be a substantial government involvement. Nozick (1974) and others (Ellikson 1991; Umbeck 1981; Van Zandt 1991) show that the private provision of property rights is possible and is a historical fact, but in our case we see that the state did more. It has played a certain kind of regulatory or initiative taking role in every period, this was declaration and collection of lighthouse dues.

The theoretical model gives the explanations why the system moved towards a more public provision – this was due to technological change and “public” interests. “Public” interests were military and naval ambitions of the Russian Empire which emerged during Peter the Great and also had some element of distrust to the Baltic nobility. These features weakened after Peter’s death and re-emerged during Catherine the Great’s reign. During the Estonian Republic the cost argument due to technological change to the Gordon system and later to the reinforced concrete constructions, justifies the change. Although, the public ownership during Estonian Republic was partly the result of historical consequences – nationalisation of all land holdings of Baltic nobility. International trade interest (of the Hansa, Swedish or Estonian state) must not be undermined as well.

Comparing the stake and structure of public institutions in lighthouse affairs (Figure 5), we see that periods have differed. We subtract five characteristics of the provision process – (1) who made the decision over building the lighthouse (initiative); (2) who was the legal owner of the asset (ownership); (3) who collected and declared levies (collection of levies); was the production financed by actual consumers or from general revenues (user levies); and who operated the lighthouse (operation). In the figure the origin of axes (zero) stands for private provision and the end of axes (one) for public provision.

Period I is a foundation period (described in Section 3.1); period II is a period of private property under Russian Empire (described in Section 3.2); period III is a nationalisation period in the 19<sup>th</sup> century (described in Section 3.3); and IV period is a state ownership period during the Estonian Republic (described in Section 3.4). In period I there are two characteristics provided by the state – initiative and collection of lighthouse dues levied from the ship. In period II there is already some state ownership and only private initiative taking. In period II most of the initiative, approximately half of the operation and ownership, was public. In the last period only user levies were still paid by private consumers. So periods differed by the institutional framework provided by the state. Only the collection of lighthouse dues by custom officials in the ports was common to all periods. So the cost of exclusion for private providers was zero in all periods, which is also consistent to the Snidal (2.1) condition. In period I the foundation of an impersonal “lighthouse market” was mediated by the Hansa league or the city council of Reval, the city which mainly benefitted from eastern Hansa trade. Also the initiative over questions, such as where to build and how to operate, were in central hands.

Basically the central body only contracted out building and operation by offering light dues or a proportion of it. During the early “Russian days” in Estonian territory the persistence of the previous system lasted, although Peter the Great recognised

the military importance of lighthouses, but he died in 1725, being able to govern the territory for only 4 years after the peace treaty. Instability of the state erased private and state initiatives of building new lighthouses. Only at the beginning of the 19<sup>th</sup> century did the state take the initiative of organising lighthouse affairs, this also brought along many new lighthouses and an attempt to take over some private ones. However the legal system protected the property rights of the local nobility and despite of the preferences the state was not able to take control of all the lighthouses. Still some private lighthouses were built on private land. The Estonian Republic nationalised the lighthouses and the state also provided the service, although there was some private contracting in building lighthouses in the early days of the republic. Also it is interesting to draw attention to the system of lighthouse levies – price discrimination between domestic and local vessels, by tonnage and by type and power of engine. Assumable this kind of pricing has historical roots and this indicates that a private system might have been efficient.

## 6. Conclusions

Until recently many policy-makers argued that “public goods” must be provided by the government if they are to be provided at all. A revisionist Coase (1974) article showed that lighthouse services were, in fact, provided by private enterprise for an extensive period of human history. This public-private dilemma is our main interest and we seek for the analytical narrative to present a mechanism which will allow public goods to be provided privately.

The typical features of public goods that make them market failures are: “jointness of supply” or nonrivalry and non-excludability. The first feature creates a problem of free-riding and the second that private owners have technical or legal difficulties of controlling exclusion. The first problem is related to pricing – make “consumers” responsible, or simply – how to make ships pay, because any free-riding will make the quantity provided suboptimal. This also raises the question of technological improvement and innovations, which are considered to be an imminent side-effect of the competitive market. The second problem – control over exclusion – is not supported by natural characteristics of the lighthouse. But this does not mean that control can not be executed. For the private agent it can be related to high cost, but for the powerful agent like government the execution of property rights and management of pricing system can be much lower in cost, if it already has a supporting institutional structure – custom officials in ports, legal and other power structures for protection of property rights.

However the definition of “public goods” does not require *a priori* government involvement. And this is shown in the British examples by some authors (Coase 1974; Taylor 2001) and in the current Estonia’s historic case as well. Until 1836 many of England’s lighthouses were privately owned (Taylor 2001: 749) and the same applies to Estonia until the 20<sup>th</sup> century. At the same time we may say the government played a substantially greater role in the provision of lighthouse services than Coase’s term “private” may-be suggests. Our Estonian system shows

that some government institutional involvement was present in all the different historical periods, the same has also been shown by Van Zandt (1992).

Our lighthouse game showed that the private provision of the credible lighthouse service is problematic. Probably the same *rationell* also inspired fiction by the telling of false lighthouses stories of Hiiumaa (Otzen-Hansen 1884), which as stories told attracted ships to the reefs. The prisoner's dilemma type of game has devastating results – no credible service can be provided. Game theoretic analysis suggests that private provision is possible only when there is a certain institutional framework – rewards to private agents and credible threats of punishments to the ships. Thus there may-be some agreement with Snidal (1979: 550), that even when there is no control over the exclusion of the good itself a central agency capable of charging consumers for provision of the good, can lead to a more optimal provision of public goods. Is the government ready to provide this institutional framework for private agents is a different question. It can be shown that government preferences can make them provide lighthouses publicly.

The narrative shows that according to Van Zandt (1992) we may say that the Estonian case shows, that instead of private and public dichotomy, there is a continuum between poles of pure private provision to full government provision. The latter, in extreme, can be financed from general revenues, which has not been the case in Estonia, at least not till the occupation by the Soviets. Our historic case, from period to period, slipped from private provision with government enforcement of property and contract rights, only during Hansa times, to government provision, accompanied with collection of specified user levies, during the Estonian Republic. In between there was some kind of mixing that allowed private and public provision simultaneously.

The question what kind of “pole” society, where government has no ideological preferences, chooses dependent on two factors – technological conditions and institutional path-dependent framework. First, let us concentrate on technology. Technology defines the efficient combination of manpower and capital needed for construction and operation of the lighthouse. It is clear that the local nobility had cheaper management and labour costs back in history. Of course this advantage was diminishing in time because new technology needed more information and asset-specific labour skills. Also Luige (1982: 73) assures that the specialized state brigade was 40% more cost effective than private sub-contractors in building reinforced concrete lighthouses. Private provision is thus possible only when costs of providing lighthouse services are relatively low and, as the model shows, state “reward” finances, at least exclusion costs of provision, the service.

The second important factor is the historic path-dependent institutional arrangement that can either support or restrict the private provision. This institution can be either formal or informal. Informal arrangements that help organize navigation have a long evolutionary path and can be summarized nowadays in “seaman ethics” and marital law. But even more important is that governments have provided certain services of the lighthouse owners, for instance burning regulations; setting and enforcing a fixed

schedule of light dues and assisting in collecting these dues. This kind of “rewards” decreased the cost of private provision and made it possible after all. Thus we may also say that private operators have provided a cheaper technology in provision of the service and government in provision of tax collection and other institutional setting. In the previously discussed model this kind of reward can take different forms – help in collecting light dues; punishment of the ships that shrink in payment; provision of information about light dues and other important matters as what kind of light is burning and at what time, but also more direct help like financing of the building.

It is also important to state that besides a reward system some kind of punishing mechanism for ship owners is also needed. Our historic case was not able to indicate any punishing instruments and as a model proposes a punishment institution as a credible threat, that makes ship-owners to pay light dues.

The Estonian lighthouse system ensures that the debate private *versus* public provision is not a black and white institutional choice; rather there is a kind of mixed system in which the government provides specific services that can help or restrict the private provision of lighthouses. Thus any type of narratives from history or any others are complementing the theoretical principles for explaining institutional choices needed for the private supply of public or semi-public goods. We hope that the current paper will encourage interdisciplinary research and make analytical narratives a tempting methodology in social sciences.

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# TAXES, ESTONIAN STATE BUDGET AND ECONOMIC CRISIS

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## Abstract

Recession has sharply erected the question of tax burden and the optimal proportion of different kinds of taxes among the incomes of the budget. Indirect taxes and consumption taxes, which proportion is different according to different methodologies, dominate in Estonian state budget. The buoyancy of a tax system based on taxes of that kind is especially weak during the recession. Difficulties concerning the incomes of budget have arisen the necessity for lifting taxes, which is possible as the tax burden is low now. But a sharp question of the optimal level of taxes is going to be raised. A formula for indirect tax optimum according to Ramsey taxes and Slutski decomposition has been proposed in the article.

**Keywords:** taxation, tax burden, Estonian state budget, Ramsey taxes, indirect tax optimum

**JEL Classification:** E, H

## Problem

There are many goods that cannot be provided by the private sector but only by the state. It is the state that has to pay for these so-called public goods. According to Wagner's law the income elasticity of public expenditures is greater than 1, therefore the demand for state-financed services grows in proportion to the increase of income. That also means an increased demand for state budget revenues, mostly taxes.

Bigger state budget also means bigger taxes. Taxes in turn diminish the resources available to households and therefore welfare. So the question arises – which is bigger, the decrease in welfare of households and the state as a whole due to an increase of taxes, or the rise in welfare due to public goods and an increase in consumption?

In economic theory, this question can be approached from two viewpoints. First, it is possible to point out a set of principles, parameters and arguments, and construct models based on theoretical considerations, without taking into account particular numerical data. The other function of the theory is to provide a scientific set of analytical devices for the empirical data that would make giving practical suggestions possible. This part of the theory also needs to explain what kind of data from the millions of practical cases need to be gathered.

The economic crisis, which has been lasting for 2 years already and has been decreasing GDP more than 20% and has essentially been decreasing state budget (in

spite of the lifting of taxes) has arisen a question about the efficiency of Estonian state budget and its correspondence with modern demands. Certainly, taxes, as the most important source of income, is a question of special interest. As the tax funds of two last years demonstrate, the current taxation system hasn't been able to ensure the stability of budget incomes regardless to the lifting of taxes. A question could be arisen: what has been the role of objective economic crisis and what has been the specificity of Estonian taxation system in a severe decrease of the amount of state budget; particularly as the role of tax burden, taxation structure, payment order etc, so the economical policy of government, especially the role of budget paringi n essential decrease of tax funds.

Let's observe only one question of this complicated complex of questions. How has the decrease of incomes of Estonian state budget taken place and what is the connection of this process with the theoretical indirect taxes model and Estonian taxation system, especially with the structural specificity of taxes. The second observed problem is the influence of budget paring on eventual tax funds.

### **Optimal tax rates**

As mentioned earlier, the decrease in state budget revenues has raised the question of a increase tax burden in Estonia. The government of 2009 has lifted several excises and VAT from 18% to 20%. As we'll demonstrate hereinafter the indirect taxes are dominant in Estonian budget incomes. Therefore it's important to have some theoretical conception about the optimum of indirect taxes before we'll begin to give an estimation to Estonian taxation system. Let's eliminate a political demagogy about the voluntaruty of (consumption) taxes and let's originate from the economical effect, particularly from the influence of taxes on the prices and the living standards of households. Next we will try to construct a model to determine the optimum of thIndirect taxes, which are dominating in Estonian taxation system.

As a general rule, establishing or increasing taxes also raises prices. Accordingly, the reaction of households to taxes consists of the sum of two effects – income and substitution effect (the latter can be marginal, if the prices of all goods rise in proportion to the tax increase. But as the demand and supply elasticities of goods differ, this possibility is only theoretical and will therefore not be consider here). To achieve actual substitution effect the rise in prices needs to be compensated to the consumer. There are two possibilities for that – either to grant a specific amount of money to the consumer (household) based on the method introduced to the economic theory by Slutsky, or to try to compensate for the increase of prices to both the consumer and the supplier. If we choose the first option, Pareto effective situation is achievable (of course, in the absence of external effects and on the condition that indifference curve and isoquant are traditional) as a point of balance where the state incomes and expenditures for ensuring purchase power are even. The second option is of primarily theoretical interest as it would entail moving sums of money back and forth, and the final result would be marginal. We will not examine this option.

With any taxation system, three of its characteristics are of vital importance: elasticity, buoyancy and incidence. First of these shows the ability of a tax or of the system of all nationwide taxes to generate increased tax revenues in case of positive shifts in the object of taxation, primarily income or turnover. In practice, of course, tax elasticity depends on not only the type of tax, but also (if not primarily) on the structure of the system of collecting the particular tax. There are different approaches to buoyancy, but for the purposes of this study it is sufficient to regard it as a certain elasticity indicator in the situation where negative shifts are taking place in the object of taxation. The greater the buoyancy of a tax (and the whole system of taxation), the smaller the risk that in case of negative deviation in economy, primarily in the object of taxation, state income is significantly reduced or the tax system even collapses.

The problem of the elasticity and buoyancy of tax systems was posed already in 1959 by R. A. Musgrave (Musgrave 1959). Since then, all taxes connected with consumership and sale (sale tax, excises, VAT etc) have been regarded as elastic. With income tax, opinions vary – it has been regarded as both elastic and anelastic. Customs tax and duties are universally regarded as anelastic (Goode *et al.* 1984).

With buoyancy, the situation is more difficult. When it comes to analysis of buoyancy, authors either confine themselves to the analysis of elasticity in certain special cases (in the case of negative elasticity coefficient) or essentially forgot it. The reason for that is simple – during the past few decades there has been no opportunity to study national tax systems in a situation of clear economic depression. The last bigger and more widespread depression took place in 1974–75 and even that was due to external factors (negative supply shock caused by oil prices), and therefore the analysis of the data from that period does not always produce “pure” results. Of course, it is not advisable to confine oneself to mere theoretical approaches or make conclusions based on 50-year-old data. In that sense the current depression in Estonia and elsewhere is an interesting base material for future research. However, these analyses can be properly made only in a few years’ time.

The questions of tax incidence have received more attention. The spreading on tax burden between demandant and supplier, but also between different social strata of varying income, is the key question of not only taxation, but of all macroeconomics and economic policy. By how much does the income of a certain social stratum decrease in real life and how much does the demand drop as a consequence? If the supplier becomes the tax bearer, then by how much do the prices rise? How much does that in turn reduce demand? It is a wide-spread view that indirect taxes, which dominate in developing countries and make up a particularly large percentage in Estonia, are regressive towards income. Unfortunately the latest in-depth statistical studies in that field date back to more than 30 years ago, when the tax systems of newly independent developing countries were actively researched. As those countries quickly changed the structure of their taxes, there are almost no studies about countries with a tax system analogous to that of Estonia today. Even of Eastern European countries only Latvia has a tax structure similar to Estonia.

In an attempt to maintain comprehensiveness, we will base our model on two common views on model-construction in taxation theory. First, the state revenues from taxes come as lump-sum taxes straight from households, and second, any transaction between the consumer and the supplier increases state revenues. There are no external forces, the indifference curve and isoquant are standard. In the absence of any other taxes such premise leads to Pareto optimum in the point where the increase in state revenues and the purchasing power redistribution curve meets with the lump-sum taxes curve. Adding any other taxes directs us away from that point. Essentially we are trying to find a solution that would bring about an increase in state revenues by increasing consumption taxes, while reducing the welfare of households as little as possible. If we expect taxes to be used for an increase in social welfare, we can claim that when the left side of equation (1) exceeds the right side, the total social welfare has increased.

To put it in the form of an equation: we are trying to choose the tax vector  $t$  in such a way as to maximize social welfare  $V(q)$ . If we designate the total revenue of subjects from indirect taxes with  $R(t)$ , we arrive at:

$$R(t) = t \cdot X(q) \geq \vec{R}, \quad (1)$$

where  $X(q)$  is the vector of aggregated demand and  $\vec{R}$  is the required tax revenue.

With taxes imposed, a quantity  $q$  is supplied for price  $t$ , but the consumer pays the price  $(p+t)$ . We designate the household welfare corresponding to quantity  $q$  with  $v(q)$  and the household demand with  $x(q)$  and arrive at equation (1). Again,  $V(q)$  is the rise of social welfare caused by an increase in taxes.

The problem posed is easily solved if we use Ramsey's rule of optimal taxes and Lagrange's widespread method of determining maximum. We maximize  $V + \lambda R$ , where  $\lambda$  is the Lagrange multiplier, which in this case does not indicate the marginal utility of some particular good supplied by the private sector, but of the social welfare arising from the increase in state revenues.

We can write:

$$\frac{\partial V}{\partial t_i} + \lambda \frac{\partial R}{\partial t_i} = 0. \quad (2)$$

If we make the substitution

$$\partial V / \partial t_i = - \sum_h \beta^h x_i^h \quad \text{and} \quad \partial R / \partial t_i = X_i + t \cdot \partial X / \partial t_i,$$

and use Slutsky's compensated demand curve of demand derivative, we get:

$$\frac{\sum_k t_k \sum_h s_{ik}^h}{X_i} = -\sigma_i$$

$$\sigma_i = 1 - \sum_h \frac{x_i^h}{X_i} \frac{b^h}{\bar{b}}, \quad (3,4)$$

$S_{ik}^h$  is the derivative of Slutsky's compensated demand curve on household h (the utility level preceding the tax increase has been maintained) and  $\sigma_i$  is negative because there is a covariance,  $b^h$ , of the social marginal utility of the net income of household h (where the „net“ means there is an adjustment to the social marginal utility,  $\beta^h$ , for the marginal propensity to spend on taxes out of extra income, and b is the average of  $b^h$ ) and the consumption of good i by household h, ( $x_i^h$ ). Thus,  $\sigma_i$  is higher the more good is consumed by those who have a low social marginal utility of income.

As the above equations (1) and (2) take into account the most important aspects of the interconnection of taxes and social welfare, it can be successfully used to describe the social aspect of the efficiency of indirect taxes. However, these equations as well as those suggested earlier (Ahmed, Stern 1989) are practicable only on the condition that we succeed in mathematically describing the function of the social welfare of households, from which we can then find the derivative. As a rule, the task of describing the function of the welfare of households is often difficult to solve with adequate accuracy, i.e the same kind of problems arise as in the case of using Hicks's method to subtract the substitution and income effect.

### **Estonian taxation structure**

In the initial stage of its transition period, Estonia (like most other Eastern European countries) was in a unique position – it essentially lacked a taxation system, a vital instrument of economic policy, which now needed to be constructed. In a perfect world, that would have meant building a system based on contemporary economic theory. Unfortunately Eastern European countries lacked pertinent knowledge, both in regard to taxation theory and the economic situation (an accurate description of the development phase and the processes).

So what characterizes the Estonian tax system? Its characteristic features are a relatively low tax burden, simplicity bordering on primitiveness (which has significantly reduced the possibilities of using taxes as a control device of economy), a very high percentage of indirect and consumption taxes.

The tax burden in Estonia has been 33.7-35.1% since Estonia joined the EU (<http://www.fin.ee>; the data are slightly different in various parts of the website). The tax burden ought to increase up to 36% as a result of the taxation lifting in

accordance to the economical crisis in 2010 (2010 Riigieelarve ...). But as the Ministry of Finance of the Republic of Estonia has already decreased the prognosis of GDP in comparison with the time of state budget passing, so we can speak about tax burden of 37%. Also, it's lower than the EU average (41-42%). However, these numbers are not comparable. Estonian state budget includes social benefits tax, which has for many years been the greatest source of income for the state budget (Table 1). In most EU member states such a tax does not exist or is slight. When that is taken into account, the tax burden in Estonia appears to be about 26-28%.

The economic crisis has brought attention to the issue of tax structure. Table 1 presents taxes in Estonian state budget from 2005, i.e after Estonia joined the EU. It is difficult to assess what is the percentage of indirect taxes in Estonian state budget. Indirect taxes clearly include VAT, excises and the customs tax. However, also the gambling tax has some features characteristic to indirect taxes, as it is not imposed on the revenues from economic activities but rather as a preventive lump-sum tax, i.e before launching the slot machine etc. The tax sum is transferred by the manager of the gambling business in some way (e.g by raising drink prices) to the actual bearer – the gambler, i.e consumer. Accordingly this tax also has the incidence characteristic of indirect taxes and therefore it is more accurate to regard it as an indirect tax (at least when it is established in such a way as in Estonia).

As far as we know, there is no other country that has social benefits tax in the form that it exists in Estonia. The tax is paid by the employer, but it is calculated based on the amount of money paid to the employee. That tax is meant only for pensions and healthcare, i.e it functions largely as retirement and health insurance. Clearly, the defining criterium here is whether the employee's salary would increase by the amount that makes up the social benefits tax if that tax was abolished. If yes, the social benefits tax has enough characteristic features to regard it as an indirect tax; if not, the features of direct taxes probably prevail (the social benefits tax is the employer's expenditure). As this question is impossible to answer properly, authors classify it arbitrarily, depending on their views, as either a direct or indirect tax. Eurostat has taken a „diplomatic” position and classifies that Estonian social tax as a labour tax, regarding it therefore as primarily a resource tax (Eurostat. Taxation), but that is not entirely accurate as the income from social benefits tax is allocated for certain social expenditures.

It is probably reasonable to bring out the percentage of indirect taxes in different versions, with social benefits tax included and not. In the first case, the percentage of indirect taxes has made up 75.3-87.8% of state budget revenues ever since Estonia joined the EU; in the latter case the percentage has been 41.1-53.6%. If we take the first approach, we arrive at what is clearly the biggest percentage of indirect taxes among EU member states; even with the second approach the result is well above EU average.

When trying to determine the percentage of consumption taxes in Estonian state budget, we likewise have to face the question of how to classify some taxes that are different from those in other countries. Again we are talking mainly about social



benefits tax. In the form that it exists in Estonia, it has been regarded as a tax on using one of the goods – labour – and hence as a resource tax. That, however, raises the question of whether it is a consumption tax. It is not the purpose of this study to discuss whether the multifunctional tax established during the transition period when there was no economic-theoretical knowledge available belongs to this or that category. Therefore – although the author does not share the opinion that the social benefits tax as it exists in Estonia is a consumption tax – also the percentage of consumption taxes has been given in two versions.

**Table 1.** Income from taxes in Estonian state budget 2005-2010 (millions of kroons)

	2005	2006	2007	2008	2009 (provisional)	2010 (plan)
Total taxes	53831	55208	67718	70396	63780	61767
Personal income tax	4789	3846	4786	4328	2419	3220
Corporate income tax	2365	3123	4083	4166	4010	2425
VAT	14021	18645	22304	20548	18809	19030
Excises	6424	7030	8195	8971	9818	9511
excise on tobacco	1205	1208	1529	2519	2088	1830
excise on alcohol	1838	2089	2314	2434	2590	2330
excise on fuel	3363	3728	4353	4697	4870	4870
excise on packaging	...	3	...	1	1	1
Gambling tax	292	354	467	484	278	215
Customs tax	347	401	549	508	307	345
Social benefits tax	18392	21764	27268	31299	28084	26970
Other taxes	1079	45	66	92	55	51

Source: the author's calculations based on the Ministry of Finance homepage.

The figures demonstrate a growing dominant of social taxes in Estonian state budget tax funds from 34.2% in 2004 to 44.4% in 2008. The crisis, which began in 2008, frozen the sums paid as wages in 2009 due to the unemployment and it led to the decrease of social taxes. It beat the state budget of the Republic of Estonia and essentially cut the amount of budget of 2010. Obviously, the incomes of budget, which base on consuming taxes, have got a great elasticity during the periods, wherein the incomes and consumption are rapidly growing, but a system of this kind has got a low floatage. (see Table 2).

**Table 2.** Dynamics of tax funds, wages and GDP in 2007-2009 (per cents in comparison with the same quarter of the last year)

Period	2007				2008				2009		
	I	II	III	IV	I	II	III	IV	I	II	III
GDP	9.8	7.6	6.4	4.5	0.4	-1.4	-3.3	-9.9	-15.1	-16.5	-15.6
Tax burden	27.6	28.4	18.6	18.2	10.2	5.7	7.1	-2.8	-10.1	-12.1	-13.6
Average wages	20.1	21.2	12.9	20.2	19.5	15.2	14.8	6.9	-1.5	-4.4	-5.9

Source: Home-page of Ministry of Finance.

The figures of Table 2 demonstrate once again that the tax funds react on GDP changes with some lag time. The peculiarity of the state budget of the Republic of Estonia – a great proportion of consumption taxes – brings a peculiar fact: the tax funds are in correlation with the dynamics of wages (especially in 2008) rather than the dynamics of GDP. A smaller decrease of tax funds in comparison with the GDP ones in 2009 has diversely been occurred from the lifting of tax burden (the growth of turnover taxes rate by 2 percentage points, the increase of excises, the purging of income tax benefits). The concrete influence of taxes lifting and the influence of prices elasticity on tax funds can't be explained here.

### **Economical crisis and Estonian state budget**

All the European states were hit by the economic depression in 2008-2009. But its range and course have been very different. As the crisis began in financial sector, so the states, wherein the income from the financial sector formed the greatest part of the GDP, suffered first of all. Due to urgent and powerful measures taken by these states the situation has been stabilized at this point. The economic depression turned into a severe crisis, which could be compared with Great Depression of 1929-1932, in some Eastern European states, especially in Estonia, Latvia and Lithuania. There are several reasons for it, as objective, so subjective ones. The observation of all these reasons isn't the task of this paper.

The state budgets have found themselves in an especially severe situation. The contents of state budget have to be pared and negative supplementary budgets have to be made i.e. the contents of state budget have to be pared within the year. But a cutting of that kind reduces the consumption. As the consumption taxes form the main part of Estonian state budget, so a cutback of any description of the budget means the cutback of the next period's incomes.

Let's observe the influence of three negative supplementary budgets of Estonia on the incomes of the next periods. The first negative supplementary budget was accepted in 2008 with the content of incomes decrease by 6.1 billion kroons and expenses decrease by 3.2 billion kroons, the second negative supplementary budget was accepted in 2009 with the content of incomes decrease by 9.6 billion kroons and expenses decrease by 6.6 billion kroons, and the third negative supplementary

budget (already the second for 2009!) was accepted with the content incomes decrease 3.9 billion kroons and expenses decrease by 2.6 billion kroons. (minfin).

In order to analyse the amount of the decrease of the incomes of the future periods by such a cutback, these expenses should be divided in several parts. The payments to EU budget or the purchase of armaments from abroad would influence the future incomes of Estonian state budget incognizably; at the same time the cutback of the extra payments for the poorest ones, which they would spend quickly for staples, would give a quick new income for the budget by turnover taxes, excises etc. I would like to divide the cutbacks of budget in four for the analyses.

First. The sums of new income about 0 (taxes for EU budget, purchase of armaments etc from abroad etc).

Second. Investments, which give some new income for the budget, but which are indirect. Investments are the purchase of something and wages for installing these purchases, which are capable of being mentioned in the case of wages in building, but which are of less importance for equipment installation. The new incomes come from here as turnover taxes (partly as excises and customs fees) from the purchases, social taxes from the wages, and turnover taxes and excises from the usage of the paid wages.

Third. Income transitions. They are of very different character. They go mostly to local municipalities, where they are used for very different payments. Actually, the taxes of the fourth group dominate within them; but the role of investments isn't small.

Fourth. Direct payments for households. The taxes from which people get money to use for internal consumption (pensions), dominate within this group. The new incomes as social taxes (part of payments taxed by this tax), particularly from the usage of turnover taxes and from money paid as excises, come from here.

A calculation of that kind meets two difficulties, which both are conquerable but could give an available error class. Firstly are the division of expenses within these 4 classes. It's especially difficult for the expenses lists, which have got the names as working expenses, transition costs, operating supports etc. Secondly, the new incomes coefficients of each group would remain inescapably of approximate value. But, as it's demonstrated in the beneath result, the tendencies are so obvious that even the maximal possible error isn't able to give a contrary result. Moreover, the coefficients of the new incomes are more likely underestimated than overestimated while calibrating the model.

The data necessary for the analyses are concentrated in Table 3.

**Table 3.** Reduction of Estonian state budget supplementary budget expenses in 2008-2009 (millions)

Orientation of expenses	2008	2009 I	2009 II
I group (coefficient of new incomings 0)	492.6	993.9	187.4
II group (coefficient of new incomings 0.4)	832.5	980,2	321,9
III group (coefficient of new incomings 0.5)	497.8	1643.0	628.1
IV group (coefficient of new incomings 0.3)	1387.4	2957.7	1658.1
Altogether	3210.3	6575.8	2563.5

Source: the author’s calculations. RT I 03.07.2008, 29, 188; RT I 28.02.2009, 15, 93; RT I 26. 06. 2009, 35, 233.

A simple arithmetic demonstrates the following: II group gave a new income of 333 million kroons, III group gave a new income of 249 million kroons and IV group gave a new income of 416 kroons, altogether 998 million kroons in 2008. If one would consider the average speed of flow of funds, the same money could be paid 2.2 times in the same year. If one would consider that it would be paid in the same proportion with the negative supplementary budget i.e. it would be returned to the expenses, it could be considered that the cutbacks created an additional “hole” of 2195 million kroons into the state budget of Estonia by the decreasing of new incomes in 2008. The analogue calculation for 2009 demonstrates that the money of I negative supplementary budget would have been returned 3.9 times and the money of II negative supplementary budget 2.3 times; so, the incomes of 2009 were increased by  $(392+822+887) \times 3.9 = 8429$  million kroons due to I negative supplementary budget and by  $(129+314+497) \times 2.3 = 2163$  million kroons due to II negative supplementary budget. So, possible new incomes were cut due to negative supplementary budgets at least 10.5 billion kroons in Estonia in 2009! So, the expenses for public sector were not made with the extent of this sum.

It’s obvious that similar calculations could be made for comparing the amount of Estonian state budget with the one of 2009. Unfortunately, the budget of 2010 hasn’t been detailed yet (the exact division of several sums would be made by the ministries only in March 2010). So, the exact data aren’t available yet.

### Conclusions

The following can be concluded from the above:

1. Determining the percentage of indirect and consumption taxes in the whole tax burden is complicated as there is no generally accepted method for it. Also, several of the taxes used in Estonia possess features characteristic of both direct and indirect taxes. Furthermore, it is not clear what we should consider a consumption tax – only those taxes that affect household consumption, or also corporate ones in case the tax is imposed on final consumption.

2. Whichever approach we take to defining indirect and direct taxing, it is clear that indirect taxes prevail in the income of the Estonian state budget. The social benefits tax makes up a particularly big – and growing – proportion. Different approaches lead to the same conclusion: the percentage of consumption and indirect taxes in the state budget is equal, i.e. indirect taxes have been imposed on consumption.

3. The structure of the revenues of the Estonian state budget differs considerably from that of other EU member states. The percentage of environment taxes is negligible, while the peculiarly structured social benefits tax, which constitutes the greatest and increasing source of revenue of the state budget, is difficult to classify as either a direct, indirect or labour tax. Due to the huge proportion of consumption taxes the buoyancy of Estonian tax system is weak. The provisional conclusions of 2008 demonstrate clearly that during periods of economic recession the state budget is very vulnerable.

4. The shortfall of income to the state budget in 2008 and especially in 2009 has forced the government to make cutbacks up to 10% and has acutely raised the issue of increasing the tax burden. As the tax burden in Estonia is substantially lower than the EU average, it is possible. However, that raises the question of the optimal tax burden. Based on Slutsky's principle of compensated demand curve and Ramsey's optimal tax theory we can take the optimal level of indirect taxes (which are dominant in Estonia) to be the point where the household welfare reduction curve and the social welfare increase curve intersect.

5. The way Estonian Government has chosen to balance the budget – a continuous cut of the expenses- forms a dead circle as the cur of the expenses, particularly the wages, is going to decrease the incomes of the next period. According to the most modest calculations, which haven't taken into consideration the decrease of the demand due to macroeconomic influence, the state budget of Estonia lost 2.2 billion kroons in 2008 and 10.5 billion kroons in 2009 due to the cuts of the budget.

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# WEGE AUS DER WIRTSCHAFTSKRISE UND MÖGLICHKEITEN ZUR WIEDERHERSTELLUNG DER WIRTSCHAFTLICHEN STABILITÄT IN ESTLAND

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## Abstract

The paper gives a concise evaluation of the impacts of the global economic crisis on the Estonian economy in 2009-2010. The main activities performed in the Estonian economy for the alleviation of the crisis have been pointed out. The state budget and its cuts are dwelt upon. Changes in the Estonian economy within the last few years are presented with the related brief assessments. The measures officially planned by government agencies for the current and further stabilisation of the Estonian economy are described. The main activities that should be performed in Estonia in the opinion of the author for the alleviation of and exiting the crisis are pointed out. As overcoming the economic crisis and achievement of subsequent stable development assumes also carrying out several reforms, the paper also briefly dwells on the problems related to the achievement of regional balance and the administrative-territorial reform.

**Keywords:** global economic crisis, impacts of the crisis on Estonia, dynamics of major economic indicators, measures for exiting the crisis and for economic stabilisation, need for reforms, regional balance and administrative-territorial reform

**JEL Classification:** E6, E02, H, R1, R11, R58

## Einleitung

Das Wirtschaftsleben unterliegt einem ständigen Wechsel der Wirtschaftsaktivitäten. Damit rückläufige Entwicklungen nicht unvorbereitet eintreten und möglichst frühzeitig abgefangen werden können, ist eine ständige Beobachtung und umfassende Analyse der wirtschaftlichen Lage notwendig. Nur so können Rückschläge abgemildert werden. Von besonderer Bedeutung ist das für kleinere Länder, wie Estland, deren Volkswirtschaften in besonderer Weise von den globalen weltweiten Tendenzen abhängen. Es ist darauf zu achten, dass etwaige Euphorien in einzelnen Wirtschaftsbereichen sich nicht durch unreflektierte positive Stimmungswellen auf die Gesamtwirtschaft übertragen und generell zu unkalkulierbaren finanziellen Risiken führen. Als negatives Beispiel für Estland – aber auch für andere Länder – ist an dieser Stelle auf die höchst problematische Kreditvergabe im Immobilien- und Konsumgüterbereich durch das skrupellose Gewinnstreben vieler Geschäftsbanken hinzuweisen.

Ziel dieses Beitrages ist es, einen zusammenfassenden Überblick über die aktuelle Lage der estnischen Wirtschaft in den Jahren 2009 und 2010 zu geben und mögliche Wege aus der Wirtschaftskrise aufzuzeigen, wobei die nach wie vor bestehenden

Notwendigkeiten einer umfassenden Verwaltungs- und Gebietsreform sowie einer ausgewogenen Regionalentwicklung im Vordergrund der Überlegungen stehen müssen. Der Autor stützt sich dabei sowohl auf offizielle Quellen und persönliche Einschätzungen der Wirtschaftslage als auch auf seine langjährige Dozententätigkeit im Gedankenaustausch mit Studierenden in wirtschaftspolitischen Seminaren.

## 1. Allgemeine Lage der estnischen Wirtschaft 2009/2010

Bei Einschätzung der gegenwärtigen Wirtschaftskrise kann man sich zurzeit leider nicht auf fundierte Wirtschaftsanalysen stützen. Die Phase der Wirtschaftskrise währt noch nicht lange, ihr Anfang liegt erst ungefähr anderthalb Jahre zurück. Entstandene Tendenzen und festgestellte Sachverhalte sind unvorhersehbar eingetreten und statistische Zeitreihen nur schwer zu prognostizieren, so dass daraus zu ziehende Schlussfolgerungen nur mit äußerster Vorsicht zu betrachten sind. Es gibt dutzende von Zukunftsszenarien. In Estland wird der weitere Verlauf der Krise auf eine sehr unterschiedliche Art und Weise eingeschätzt: Ist die Talsohle bereits erreicht, stabilisiert sich die Lage und geht es bald langsam wieder bergauf? Oder: Setzt sich die Talfahrt noch weiter fort?<sup>1</sup>

Zum Teil herrscht die Meinung vor, dass der Tiefpunkt der Krise noch nicht erreicht sei, d. h. Rezession und wirtschaftliche Enge noch einige Zeit andauern werden.<sup>2</sup> Betrachtet man die Wirtschaftskrise der dreißiger Jahre des vorigen Jahrhunderts, so kann man feststellen, dass die Analysen und Einschätzungen erst Jahre später nach dem Abflauen der Krise auf einem festeren Fundament standen (Amin *et al.* 1982; Berton 1990; Klein 1987; Varga 1974 u. a.).

Zudem muss berücksichtigt werden, dass die Wirtschaft eines Kleinstaates, wie es Estland zweifellos ist, im wesentlichen Maße von der ökonomischen Lage anderer Länder, vor allem der großen Industrienationen abhängt. Man muss sich immer wieder vergegenwärtigen, dass Faktoren, die zum Wirtschaftswachstum führen, und Reformen, welche die Überwindung von Krisen unterstützen, unabdingbare Voraussetzungen zum weiteren Erfolg sind. Darauf haben viele Wirtschaftswissenschaftler hingewiesen (z. B. Krugman, Obstfeld 2006: 780-824). Eine wirksame Krisenbekämpfung in Estland liegt nicht nur in der Wiederbelebung der Wirtschaftsaktivitäten, sondern sie umfasst einen umfangreichen Aufgabenkomplex, wie die Gebiets- und Verwaltungsreform, die Bildungs-, Sozial-, Krankenhaus- und letztendlich auch die Bodenreform, die endlich zu Ende geführt werden muss.

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<sup>1</sup> In seinen wesentlichen Zügen ist der vorliegende Beitrag im Zeitraum Dezember 2009 bis Februar 2010 verfasst worden.

<sup>2</sup> Zum Beispiel wurde am 6. Januar 2010 im Estnischen Fernsehen in der Sendung „Forum“ den Zuschauern die Frage gestellt, ob sie der Meinung seien, dass die Talsohle der Wirtschaftskrise bereits erreicht sei. 78,4 % des Fernsehpublikums gaben per Telefon an, dass nach ihrer Anschauung die krisenhafte Entwicklung noch kein Ende gefunden habe.

Das Jahr 2009 war das erste Jahr, in der sich die Krise in Estland voll ausgewirkt hat. Es brachte dramatische Veränderungen, Einschränkungen, Sparmaßnahmen, Umstellungen und sonstige Zwänge mit sich, wovon sowohl zentralstaatliche und kommunale Institutionen, Unternehmen als auch unzählige Privathaushalte betroffen waren. In vielen Fällen ging es tatsächlich um „das pure Überleben“. Zahlreiche Unternehmen wurden aufgelöst oder mussten Konkurs anmelden. Ähnlich sahen sich nicht wenige Menschen gezwungen, in die private Insolvenz zu gehen. Hinzu kam, dass die Haltung der Estnischen Zentralbank nicht deutlich genug zu erkennen war und versäumt wurde, alles Notwendige bei der Aufstellung der Kreditinstitute in ihren geschäftlichen Beziehungen in die Wege zu leiten. Die bis dato in Estland betriebene äußerst liberale Wirtschaftspolitik hat der krisenhaften Entwicklung zusätzliche Spielräume eröffnet.

Rückblickend auf das Jahr 2009 können folgende Umstände als krisenbestimmend genannt werden (vgl. hierzu Tabelle 1):

- Die Ausgaben im Staatshaushalt mussten gesenkt werden,<sup>3</sup> weil die Einnahmen erheblich geringer ausfielen als erwartet.
- Die Gründung und die Erweiterung von Unternehmen wurden stark gebremst. Schätzungsweise liegt der Anteil jener Unternehmer, die mit Gewinn wirtschaften, bei ca. 2% der besetzten Arbeitsplätze, in entwickelten Industrieländern ist diese Zahl zehn Mal oder mehr höher.
- Investitionen der Unternehmungen und deren Exporte gingen sprunghaft zurück. Die Exporte gestalteten sich zunehmend schwieriger, weil auch die wichtigsten Abnehmerländer mit der weltweiten Wirtschaftskrise zukämpfen hatten.
- Einen sehr deutlichen Abschwung erfuhr der Immobiliensektor. Fehlentwicklungen in der Immobilienbranche waren in besonderer Weise für die gegenwärtige Krise verantwortlich.
- Die Arbeitslosigkeit stieg sprunghaft an, denn zahlreiche Unternehmen sahen sich gezwungen, ihre Geschäftstätigkeit einzuschränken oder gar gänzlich einzustellen.
- Das Bruttoinlandsprodukt sank drastisch, d. h. Estland erfuhr einen deutlichen Wirtschaftsabschwung verursacht durch die nachlassende Endnachfrage.
- Häufig erwiesen sich die gefertigten Produkte und angebotenen Dienstleistungen wegen zu hoher spezifischer Arbeitskosten als zu teuer, was vielerorts vor allem auf die niedrigen Arbeitsproduktivitäten zurückzuführen ist.
- Die kommunalen Selbstverwaltungen gerieten zunehmend in Finanznot, weil deren Verpflichtungen und die benötigten finanziellen Mittel weit auseinanderklafften. Zudem tauchten zunehmend Verdachtsfälle von Korruption auf.

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<sup>3</sup> Während der zu Beginn des Jahres 2009 verabschiedete Staatshaushalt der Republik Estland noch einen Überschuss von gut einer Milliarde estnische Kronen auswies, kehrte sich nach zwei im Jahresverlauf notwendig gewordene Nachtragshaushalte der Überschuss in ein Defizit um (vgl. hierzu die interpretierenden Ausführungen zu Tabelle 1), wobei die Ausgaben zum Teil durch Auflösung von Rücklagen finanziert werden mussten.



Im estnischen Staatshaushalt wurden im Laufe des Jahres 2009 durch zwei Nachtragshaushalte Kürzungen vorgenommen. Ursprünglich waren im Staatshaushalt für das Jahr 2009 auf der Einnahmenseite 97,8 Milliarden estnische Kronen und auf der Ausgabenseite 96,7 Milliarden Kronen vorgesehen, zusätzliche Sparmaßnahmen mitgerechnet (Riigieelarve 2009).

Durch den ersten Nachtragshaushalt 2009 wurden die erwarteten Einnahmen auf 88,2 Milliarden (also um 9,6 Milliarden Kronen) und die Ausgaben auf 91,9 Milliarden Kronen (also um 4,8 Milliarden Kronen) reduziert. (2009. aasta eelarve + lisaeelarve).

Durch den zweiten Nachtragshaushalt wurden die erwarteten Einnahmen noch einmal um 3,9 Milliarden Kronen herabgestuft und die Ausgaben um 2,6 Milliarden Kronen eingeschränkt, so dass letztendlich erwarteten Einnahmen in Höhe von 84,3 Milliarden Kronen auf der Ausgabenseite 89,3 Milliarden Kronen gegenüberstanden und somit nach diesen Haushaltsansätzen ein Defizit in Höhe von 5 Milliarden Estnischen Kronen resultierte (2009. aasta teise lisaeelarve seadus).

Für den Staatshaushalt 2010 sind 84,5 Milliarden Kronen Einnahmen und 89,7 Milliarden Kronen Ausgaben veranschlagt (2010. aasta riigieelarve seadus).

Den vom Estnischen Statistikamt und von der Estnischen Zentralbank vorgelegten Zahlen ist zu entnehmen, dass 2009 bei wichtigen volkswirtschaftlichen Kennziffern deutliche Rückgänge eingetreten sind (vgl. Tabelle 1). So schrumpfte das BIP 2009 im Vergleich zu 2008 um 14,1 %, die Industrieproduktion ging um 26,1 % zurück und das Bauvolumen verringerte sich sogar um 34,2 %. Gegenüber 2008 gab es 55,6 % weniger PKW-Erstzulassungen (gegenüber 2007 sogar 70,9 % weniger). Im Jahre 2009 betrug die Erwerbslosigkeit 13,8 %. Auch die Tourismusbranche erfuhr 2009 gegenüber 2008 Rückgänge um 6,5 % (im Vergleich zu 2007 sogar um 51,6%). 2009 buchten die Esten 28,8 % weniger Auslandsreisen als im Jahre 2008. Estnische Betriebe investierten 2009 in ihr Anlagevermögen 27,6 % weniger als im Vorjahr.

Die Daten aus Tabelle 1 und die Hintergrundinformationen (geringere Nachfrage, Kürzungen im Staatshaushalt, wachsende Arbeitslosigkeit, Rückgang bei Löhnen und Gehältern) lassen folgende Schlussfolgerungen zu:

- Die Wertschöpfungen in Industrie und anderen Wirtschaftszweigen gingen zurück, weil sich die Auftragslage der Betriebe deutlich verschlechtert hat.
- Das Bauvolumen hat sich verringert, verursacht durch die gesunkene Nachfrage nach neuem Wohn- und Büroraum und sonstigen Gebäuden.
- Durch sinkende Einkommen gerieten weite Teile der Bevölkerung in Schwierigkeiten bei der Tilgung ihrer aufgenommenen Kredite. Auch war es für viele Haushaltungen nicht mehr möglich, ein neues Auto oder andere langlebige Gebrauchsgüter anzuschaffen oder Urlaubsreisen zu unternehmen.
- Das Umsatzvolumen von Lebensmitteln und sonstigen Konsumgütern des täglichen Lebens verringerte sich; es wurde weniger und mit verstärktem Preisbewusstsein gekauft, indem billigere Waren bevorzugt wurden.

- Der Konkurrenzdruck nahm zu, wodurch zahlreiche Waren und Dienstleistungen zum Teil zu Preisen ohne Deckungsbeitrag angeboten wurden; im Handel und Dienstleistungssektor wurden vermehrt Sonderangebots- und Schlussverkaufskampagnen durchgeführt, sowohl für Lebensmittel und sonstige Konsumgüter, Baumaterialien als auch im Hotellerie- und Gastronomiegewerbe.
- Für Betriebe waren oft Investitionen in notwendig gewordenem Umfang nicht mehr finanzierbar; darunter litten Produktentwicklungen und Innovationen im Produktionsbereich.
- Als Ergebnis der nationalen und internationalen Krise schrumpften sowohl die Import- als auch die Exportvolumina.

Die Zahlenreihen zeigen, dass sich bereits im Jahre 2008 ein deutlicher Wirtschaftsabschwung abzeichnete, der sich allerdings in einigen Bereichen nur in einer Abnahme der Zuwachsraten äußerte. Diese Signale wurden von der Regierung leider nicht ernst genug genommen.

In den Anfangsmonaten 2010 überschritt die Zahl der gemeldeten Arbeitslosen die Grenze von 90.000. Hinzu kommen noch etwa 20-25% nicht gemeldete Fälle. Allgemeinen Einschätzungen zufolge wird die Erwerbslosigkeit im weiteren Jahresverlauf weiter steigen. Danach wird im zweiten Halbjahr 2010 mehr als ein Fünftel der erwerbsfähigen Bevölkerung in Estland ohne einen Arbeitsplatz sein.<sup>4</sup> Eine lang andauernde hohe Arbeitslosigkeit stellt eine Gefahr für die gesamte Gesellschaft dar, weil zu befürchten ist, dass dadurch soziale Spannungen, Kriminalität und Migration zunehmen werden.<sup>5</sup>

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<sup>4</sup> 2010 wird in Estland die Beschäftigungsquote der 15- bis 74-jährigen bei 57,4 % liegen. Die höchste Beschäftigungsquote im zurückliegenden Zeitraum 1995 bis 2009 war im Jahre 2008 mit 63,5 % erreicht (Eesti majandusnäitajad... 2010).

<sup>5</sup> Am 19.03.2010 gab das Sozialministerium die neuesten Entwicklungen auf dem Arbeitsmarkt bekannt (Uudised... 2010). Danach lag der Prozentsatz der gemeldeten Arbeitslosen in Relation zur gesamten erwerbsfähigen Bevölkerung (ab dem 16. Lebensjahr bis zum Rentenalter) in den letzten drei Wochen bei 14,6 %. Am 18.03.2010 waren 95.119 Personen bei der Arbeitslosenkasse gemeldet (zuvor waren es am 11.03.2010 noch 94.958 Personen). Die Neuzugänge sind jedoch rückläufig: Während zu Beginn des Jahres in der 2. und 3. Kalenderwoche (also im Januar) sich noch 1.192 und 1.261 Personen zusätzlich arbeitslos meldeten, sind diese Zugänge in den zwei Wochen vor dem 19.03.2010 auf 67 und 161 zurückgegangen.

**Tabelle 1.** Kennziffern zur Lage und Entwicklung der estnischen Wirtschaft 2007-2009

Nr.	Kennziffern	2007	2008	2009	Veränderung 2009 gegenüber 2008 (*)
1.	Veränderung BIP zu aktuellen Preisen (%)	+ 7,2	- 3,6	- 14,1	
2.	Veränderung der Industrieproduktion (%)	+ 6,4	- 5,1	- 26,1	
3.	Baupreisindex (%)	+ 12,7	+ 3,4	- 8,5	
4.	Bauvolumen (zu laufenden Preisen, in Mio. Kronen)	61 872	56588	37233	<b>- 34,2</b> (- 39,8)
5.	fertig gestellte Wohnflächen (in tausend m <sup>2</sup> )	566,7	458,4	303,7	<b>- 33,7</b> (- 46,4)
6.	Einzelhandelsumsätze (in Mio. Kronen)	65 775	69 617	57 902	<b>- 16,8</b> (- 12,0)
7.	Anzahl der PKW-Erstzulassungen	72 378	47 402	21 037	<b>- 55,6</b> (- 70,9)
8.	Erwerbslosigkeit unter den der 15- bis 74-jährigen (%)	4,7	5,5	13,8	
9.	Durchschnittlicher Monatslohn vor Steuern in estnischen Kronen (**)	11.336,--	12.912,--	12.259,--	<b>- 5,1</b> (+ 8,2)
10.	Ausländische Touristen in Estland (in tausend Personen)	1.845,2	954,6	892,8	<b>- 6,5</b> (- 51,6)
11.	Reisende, die bei estnischen Reisefirmen eine Auslandsreise buchten (in tausend Personen)	515,6	541,9	386,1	<b>- 28,8</b> (25,1)
12.	Export (in Mio. Kronen)	125.697,2	132.445,8	101.309,7	<b>- 23,5</b> (- 19,4)
13.	Import (in Mio. Kronen)	178.983,7	170.042,2	114.082,9	<b>- 32,9</b> (- 36,3)
14.	(ausl.) Direktinvestitionen in Estland (in Mio. Kronen)	178.880,9	177.035,1	176.311,0	<b>- 0,4</b> (- 1,4)
15.	Anlagen-Investitionen (zu laufenden Preisen in Mio. Kronen)	39.900,0	36.782,1	26.621,2	<b>- 27,6</b> (- 33,3)

(\*) In Klammern jeweils die Veränderungen im Jahre 2009 gegenüber 2007.

(\*\*) im Jahr 2009 handelt es sich um Angaben aus dem IV. Quartal; in Klammern Veränderung des IV. Quartals 2009 gegenüber 2008.

Quellen: Eesti majandusnäitajad 2010; Enim nõutud statistika 2010 (a, b); Berechnungen des Autors.

Charakteristisch für das Vorgehen wirtschaftspolitischer Entscheidungsträger in Estland in Krisensituationen ist häufig ein zögerliches und damit verspätetes

Handeln. Dann folgt nicht selten eine wenig durchdachte und unangebrachte Hektik. Zum Beispiel wurde Mitte Juni 2009 der Umsatzsteuersatz für die meisten Waren und Dienstleistungen binnen zwei Wochen zum 1. Juli 2009 von 18% auf 20% angehoben. Der Regierung ging es dabei ganz offensichtlich in erster Linie um einen einigermaßen ausgeglichenen Staatshaushalt, ohne Rücksicht auf die konjunkturellen Notwendigkeiten. Den Politikern fehlt es einfach an notwendigem Sachverstand, klaren Zielsetzungen und wirtschaftspolitischem Willen. Bereits zu Beginn der Krise konnten sie weder die wirtschaftliche Lage in Estland richtig einschätzen noch darauf rechtzeitig reagieren.

## **2. Stabilisierungsmaßnahmen und Zielsetzungen für die estnische Wirtschaft**

Von 2009 bis 2010 wurden in Estland zur Stabilisierung der Wirtschaft mehrere unterschiedliche Maßnahmen getroffen. Im Wesentlichen waren das:

- Zum 1. Juli 2009 trat das neue Arbeitsvertragsgesetz in Kraft. Gedacht war dabei daran, auf dem Arbeitsmarkt mehr Flexibilität zu erreichen, ohne damit den wirtschaftlichen Status der Arbeitnehmer wesentlich zu beeinträchtigen. Es ist jedoch zu befürchten, dass dadurch zwar die Dispositionsfreiheit der Arbeitgeber verbessert wird, aber zu Lasten der Arbeiter und Angestellten.
- Ab dem 1. Juli 2009 wurde der Umsatzsteuersatz für die meisten Waren und Dienstleistungen von 18 % auf 20 % angehoben. Der verminderte Umsatzsteuersatz, der vor allem für Bücher, Arbeitshefte, Zeitungen, Zeitschriften, Arzneimittel und Hoteldienstleistungen gilt, wurde auf 9 % erhöht.
- Der Einkommensteuersatz sowohl für natürliche als auch juristische Personen bleibt im Jahr 2010 unvermindert – wie im Vorjahr – bei 21 %; vor der Krise war geplant, jährlich den Einkommensteuersatz um einen Prozentpunkt zu senken;
- Die Verbrauchssteuern für Treibstoffe, Alkohol und Tabakwaren sind zum 1. Januar 2010 und für Elektrizität zum 1. März 2010 erhöht worden.
- Für die Entrichtung der Grundsteuer sind aus erhebungstechnischen Gründen die Zahlungsintervalle verlängert worden; während es bisher drei Termine gab (15. April, der 15. Juli und 15. Oktober), gibt es ab 2010 zwei Termine (31. März und 1. Oktober).
- Zum 1. Januar 2010 tritt für Rehabilitationstherapie ein Selbstbehalt in Höhe von 15 % in Kraft (bisher wurde die Therapie in vollem Umfang von der Estnischen Krankenkasse finanziert).

Zur Stützung des Wirtschaftswachstums und Gewährleistung eines besseren Beschäftigungsstandes in Estland wurde der „Aktionsplan zur Konkurrenzfähigkeit für 2009-2014“ verfasst. Auf Grund dieses Planes werden für die nächsten Jahre folgende Prioritäten gesetzt (Uendatud... 2010: 29):

- Befolgung einer konservativen Politik in der Makrowirtschaft mit dem Ziel
  - das Haushaltsdefizit des öffentlichen Sektors auf ein Niveau unter 3 % des BIP zu drücken;
  - im Jahre 2011 der Europäischen Währungsunion beizutreten; hierzu ist anzumerken, dass der Beitritt zur Europäischen Wirtschafts- und Währungsunion

nicht ausschließlich als Mittel zur Lösung der gegenwärtigen Wirtschaftskrise angesehen wird, sondern als eine notwendige Voraussetzung für eine langfristige positive wirtschaftliche Entwicklung;

- die Zunahme der Schuldenlast des öffentlichen Sektors unter Kontrolle zu halten;

- die Investitionstätigkeit in Estland in den nächsten Jahren zu stärken.

- Stärkung der Exportfähigkeit der Betriebe. Dadurch
  - sollen die Bedingungen zur Steigerung der Arbeitsproduktivität verbessert werden;
  - sollen die Exportkapazitäten auf dem Niveau von 2008 gehalten werden;
  - sollen ausländische Direktinvestitionen in Estland attraktiv werden.
- Förderung von Qualifizierungsmaßnahmen für Arbeitnehmer, indem man
  - die Finanzierungsmöglichkeiten für ein lebenslanges Lernen verbessert;
  - Weiterbildungs-, Fortbildungs- und Umschulungsmöglichkeiten verstärkt ausbaut;
  - den Niedrigstand der Beschäftigung zum Anlass nimmt, die Qualifikation von 50.000 Arbeitnehmern um eine Stufe zu erhöhen.<sup>6</sup>
- Stabilisierung und Erhöhung des Beschäftigungsstandes durch
  - Verbesserung der allgemeinen wirtschaftlichen Rahmenbedingungen;
  - Erhöhung der öffentlichen Infrastrukturausgaben;
  - als Nahziel wird bis 2011 die Wiedererreichung der Beschäftigungsquote von 2008 angestrebt, die in der Altersgruppe der 15- bis 64-jährigen bei 63,5% lag (vgl. Fußnote 4).

Es sei noch einmal ausdrücklich betont, dass der Beitritt zur Eurozone nicht als ein Rettungsakt für die estnische Wirtschaft anzusehen ist, sondern die Euro-Zugehörigkeit ist lediglich ein Mittel unter anderen zur Verwirklichung einer erfolgreichen estnischen Wirtschaftspolitik in der Zukunft.

### **3. Wege aus der gegenwärtigen Wirtschaftskrise**

Die Bewältigung der gegenwärtigen Wirtschaftskrise verlangt ein zielsicheres und zweckmäßiges Handeln und bedarf entsprechender wirtschaftspolitischer Entscheidungen. Zu berücksichtigen ist, dass die volkswirtschaftliche Struktur nach der Krise nicht mehr dieselbe ist wie vor der Krise. Im Verlauf der zurückliegenden zwei Jahre haben sich Verschiebungen in den Gewichtungen und Inhalten der einzelnen Wirtschaftssektoren und -zweige ergeben. Diese Tatsache macht ein überregionales, intensives und zielgerichtetes Weiterbildungs- und Umschulungsprogramm notwendig. Dieses Programm muss staatlicherseits durch entsprechende Institutionen koordiniert und vorangetrieben werden. Im Moment fällt nur auf, dass der Staat in dieser Richtung wenig unternimmt.

Bis jetzt hat der Staat seine Ausgaben zur Konsolidierung der öffentlichen Finanzen nicht in ausreichendem Maße gekürzt und seine Handlungseffizienz nicht steigern

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<sup>6</sup> Eine genaue Beschreibung dieser Stufen findet man in dem entsprechenden Entwicklungsplan für Erwachsenenbildung („Täiskasvanuhariduse arengukava 2009-2011“)

können. Folglich müsste das Jahr 2010 für den öffentlichen Sektor endlich ein Jahr konsequenter Sparmaßnahmen werden, die aber, darauf muss ausdrücklich hingewiesen werden, die Rahmenbedingungen für ein zukünftiges Wirtschaftswachstum nicht beeinträchtigen dürfen. Die bisherigen Kürzungen lassen ein umfassendes rationales Handeln noch nicht erkennen. Man hat zwar Gehaltskürzungen vorgenommen und Ämter zusammengelegt,<sup>7</sup> jetzt ist es aber an der Zeit, dass die Tätigkeit der Staatsbediensteten an Komplexität gewinnt und in jeder Hinsicht ergebnisorientierter wird. Es muss sichergestellt werden, dass sich die Zuständigkeiten unterschiedlicher Behörden nicht mehr überschneiden, wie das bisher häufig der Fall war.

Über die weitere wirtschaftliche Entwicklung in Estland gibt es zahlreiche Prognosen<sup>8</sup>, die zum Teil zu recht unterschiedlichen Ergebnissen kommen. Prognosen können zum Teil recht interessant, manchmal sogar nützlich sein; aber man darf sie nicht überbewerten. Die Schlussfolgerungen sind nicht selten subjektiv gefärbt, manchmal sogar irreführend, wenn die Verfasser nicht über umfassende und fundierte Informationen verfügen sowie keine ausreichenden Kenntnisse der tatsächlichen Lage und landesspezifischen Bedingungen besitzen. Einzelne statistische Angaben können eben keine gesicherte Grundlage für eine adäquate Bewertung geben.

Damit Estland die Krise überwinden kann, sind folgende Ansatzpunkte von Bedeutung:

- Zunächst geht es um die Förderung der einheimischen Produktion, auch der Industrieproduktion, der bisher zu wenig Aufmerksamkeit geschenkt worden ist. Es ist zwar richtig, dass Vermittlungstätigkeiten, Transithandel, Tourismus, Immobiliengeschäfte, Infotechnologie nach wie vor äußerst wichtige Teilbereiche für die estnische Wirtschaft sind; dennoch darf der Industriebereich nicht vernachlässigt werden, in dem produktive Arbeitsplätze zu errichten sind, auf denen international wettbewerbsfähige Waren hergestellt werden können.
- Die Steigerung der Arbeitsproduktivität auf allen Ebenen ist eine wichtige Bedingung zur Aufrechterhaltung der internationalen Konkurrenzfähigkeit, eines stabilen Preisniveaus und zur allgemeinen Erhöhung des Lebensstandards der einheimischen Bevölkerung. Das setzt die Anwendung moderner Techniken voraus und dies wiederum die Schaffung eines günstigen Investitionsklimas,

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<sup>7</sup> Seit 2010 gibt es folgende Veränderungen:

- Die drei Behörden für Polizei, Grenzschutz und Staatsangehörigkeits- und Migrationsangelegenheiten wurden zusammengelegt zum Polizei- und Grenzschutzamt.  
- Aus der Aufsichtsbehörde für Pflanzenproduktion, den regionalen Meliorationsbüros und dem zentralen Aufsichts- und Expertisebüro für meliorative Baumaßnahmen wurde das Landwirtschaftsamt gegründet.  
- Durch die Zusammenlegung des Amtes für Gesundheitswesen, der Aufsichtsbehörde für Gesundheitsschutz und dem Infozentrum für Chemikalien entstand das Gesundheitsamt.  
- Mit der Beratung von Landwirten und sonstigen Landunternehmern beschäftigt sich seit 2010 die Stiftung zur Förderung des Landlebens; bis dato gehörte diese Aufgabe zum Zuständigkeitsbereich der Estnischen Landwirtschaftskammer.

<sup>8</sup> oft im Auftrag der unterschiedlichsten Institutionen.

weil in der Regel erst durch Investitionen neuzeitliche Technologie Eingang in den Produktionsprozess finden kann (embodied technical progress).<sup>9</sup>

- In diesem Zusammenhang kommt es auch darauf an, Existenzgründungen durch Entbürokratisierung zu erleichtern und damit einen wichtigen Beitrag zur Wirtschaftsförderung zu leisten.
- Eine noch präzisere Aufteilung der Funktionen zwischen Zentralregierung und kommunalen Selbstverwaltungen stellt ebenfalls einen wichtigen Beitrag zur allgemeinen Wirtschaftsförderung dar. In diesem Zusammenhang ist es notwendig, die kommunalen Selbstverwaltungen bei der Finanzierung ihrer Aufgaben zu unterstützen, wobei im Hinblick auf die verschiedenen Projekte Prioritäten zu setzen sind.
- Letztendlich ist die Verwendung der EU-Mittel effizienzorientiert zu verbessern.

Die aufgezeigten Entwicklungsmöglichkeiten sind leichter zu verwirklichen, wenn von der Notwendigkeit der Durchführung einer umfassenden Verwaltungs- und Gebietsreform und der regionalen Ausgewogenheit ausgegangen wird. Was die regionale Entwicklung anbelangt, so befindet sich Estland gegenwärtig noch in einer äußerst ungleichgewichtigen Situation; das bestätigen fast alle estnischen Wirtschaftskennziffern im regionalen Vergleich. Darüber hinaus muss auch über die übrigen notwendigen Reformen weiter diskutiert werden, so dass diese bald in Angriff genommen und realisiert werden können.

#### **4. Regionaler Ausgleich sowie Verwaltungsreform als wesentliche Mittel für Wirtschaftsaufschwung und stabile Entwicklung**

Einen wesentlichen Beitrag zur Bewältigung der gegenwärtigen Wirtschaftskrise und zur Wiedererlangung von Stabilität und Wirtschaftswachstum könnte die Verwirklichung jener Reformen leisten, welche in der Vergangenheit immer wieder zu heftigen zwischenparteilichen Auseinandersetzungen und letztendlich noch zu keinen befriedigenden Ergebnissen geführt haben. Dazu gehören vor allem die Verwaltungs- und Gebietsreform sowie die Bildungs-, Sozial-, Krankenhaus- und die noch nicht zu Ende geführte Bodenreform, die alle für eine ausgewogene Regionalentwicklung unentbehrlich sind. Mit anderen Worten: *Wenn unter Berücksichtigung und Anwendung der Grundsätze der regionalen Ausbalancierung die Verwaltungs- und Gebietsreform komplex umgesetzt werden, wird auch die Durchführung anderer wesentlicher Reformen besser gelingen. Das wiederum bildet die Grundlage zur Wiederherstellung der Stabilität und garantiert ein nachhaltiges Wirtschaftswachstum bei der Bewältigung der Wirtschaftskrise und unterstützt die Gesamtentwicklung der estnischen Wirtschaft.*

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<sup>9</sup> Die Relation zwischen Lohn- und Produktivitätssteigerungen wird in Estland leider nicht in ausreichendem Maße berücksichtigt. Wichtig ist, darauf zu achten, dass die Arbeitskosten nicht stärker steigen als die Arbeitsproduktivität, weil sonst die spezifischen Personalkosten steigen und den Geldwert zu ruinieren und mögliche Steigerungen des Lebensstandards der arbeitenden Bevölkerung zu paralysieren drohen. Die Notwendigkeit, die genannten Kennziffern ständig zu berechnen, zu veröffentlichen und zu beobachten, wird auch vom Generaldirektor des Statistikamtes Prit Potisepp gefordert (Potisepp 2010).

Der Stillstand bei den genannten Reformen bremst erheblich die Entwicklung der estnischen Wirtschaft und mindert ihre Konkurrenzfähigkeit. Leider zeigen sich die Parteien bis heute unfähig, ihre Kontroversen zu überbrücken und sich über die Durchführung der Reformen zu einigen. Stattdessen werden sowohl parteiliche als auch persönliche Ambitionen in den Vordergrund gerückt. Durch eine solche Einstellung wird ein nachhaltiger Schaden verursacht, und das verursacht wiederum hohe gesellschaftliche Kosten in der Zukunft. Das ist der Preis für mangelnde politische Kultur, Kurzsichtigkeit und fehlenden Willen.<sup>10</sup>

Wie sieht die bisherige regionale Entwicklungsplanung aus?

Das erste regionalpolitische Grundsatzpapier, die „Konzeption für Regionalpolitik“, wurde 1994 von der estnischen Regierung verabschiedet. 1999 wurde die Strategie der Regionalentwicklung erstellt, welche die Grundsätze dieser Konzeption aufgriff und erweiterte. In demselben Jahr ist die Strategie von der Regierung beschlossen worden. Mit diesem Strategiepapier werden die angestrebten regionalen Entwicklungsrichtungen, die staatlichen regionalpolitischen Grundlagen und die Ausgangspunkte zur Ausrichtung der regionalen Wirkung der Teilpolitiken in der Vorbereitungsphase zum EU-Beitritt festgelegt (Eesti regionaalarengu... 2010).

Zum heutigen Zeitpunkt hat sich der allgemeine Rahmen für Regionalpolitik erheblich gewandelt. Die Veränderungen während der Transformationsphase in den 1990er Jahren sind realisiert und die regionalpolitischen Entwicklungsrichtungen stabilisieren sich. Bei der Umsetzung der staatlichen Regionalpolitik hat man positive Erfahrungen erworben, die bei der effizienteren Einsetzung der vorhandenen Mittel zur Ausrichtung der Regionalentwicklung von Nutzen sind. Es sind mehrere, das ganze Land erfassende Entwicklungspläne und –strategien beschlossen worden. Im Zusammenhang mit dem EU-Beitritt wird die Regionalpolitik, ähnlich wie die Politiken vieler anderer Bereiche, immer stärker durch die EU-Kohäsionspolitik beeinflusst (Eesti regionaalarengu... 2010).

Auf Grund des oben genannten Strategiepapiers plant die estnische Regierung eine sichere und ausbalancierte Regionalentwicklung, bei der alle Regionen ihre spezifischen Voraussetzungen gezielt und effizient einbringen und auf dieser Weise ihren Beitrag zur Entwicklung des gesamten Landes leisten können. Trotz seiner relativ geringen Fläche gibt es in Estland im internationalen Vergleich bemerkenswerte regionale Unterschiede. Charakteristisch ist, dass der Lebensstandard und die Konkurrenzfähigkeit der Tallinner Hauptstadtregion –

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<sup>10</sup> Die Tätigkeit der Parteien bedarf einer Neuregelung, d. h. die Abgeordneten sollten tatsächlich ihre Wähler und sozialen Gruppen repräsentieren, und nicht sich selbst oder ihren Freundeskreis. Auch im geltenden Wahlsystem sind Änderungen notwendig: Die Wähler müssen die Möglichkeit haben, konkrete Personen zu wählen, und nicht undurchsichtigen Parteilisten hinnehmen, bei denen die Spitzenplätze der Liste nicht durch erzielte Wählerstimmen, sondern von der Parteiführung bestimmt werden. Gleichzeitig muss das System die Möglichkeit bieten, Abgeordnete, die dem Wählerauftrag nicht nachkommen, abzuwählen.



teilweise auch der Tartuer Stadtregion – und der anderen Regionen Estlands stark divergieren. Die estnische Regierung hat sich zum Ziel gesetzt, alle Regionen Estlands sowohl zum Wohnen als auch zur Gewerbeansiedlung attraktiv zu machen. Das Erreichen dieses Zieles ist nur möglich durch Verbesserung jener Bedingungen, welche die Entwicklung des Landes als Ganzes beeinflussen.

Damit der regionale Ausgleich erreicht wird, ist eine konsequente Umsetzung der staatlichen Regionalpolitik notwendig. Bis heute ist es aber nicht gelungen, das Entwicklungstempo einer ganzen Reihe von Gebieten dem Tempo der großen Wachstumsregionen Estlands anzugleichen.

Ausgehend von der Strategie der Regionalentwicklung hat sich die estnische Regierung zum Ziel gesetzt, diese Situation zu ändern. Die Regierung vertritt den Standpunkt, dass die Umsetzung von Entwicklungsinitiativen von der kommunalen oder regionalen Ebene angestoßen werden müsse, in bestimmten Fällen auch von der staatlichen Ebene.

Aus diesem Grunde ist die estnische Regierung bereit, partnerschaftliche Hilfe zu gewähren und die Entwicklungsinitiativen der kommunalen und regionalen Ebenen zu unterstützen. Dazu hat die Regierung zugesagt, weiterhin spezielle regionalpolitische Mittel zur regionalen Entwicklungsbeschleunigung bereitzustellen. Zusätzlich erklärte sich die Regierung bereit, die Zusammenarbeit der zuständigen Ministerien zu fördern, um ein besseres Zusammenwirken der einzelnen Teilpolitiken bei der Entwicklung der verschiedenen Regionen zu erzielen. (Eesti regionaalarengu... 2010). Die Praxis hat aber leider gezeigt, dass diese Versprechungen und Vorsätze in großen Teilen bisher nicht umgesetzt worden sind.

Die Analysen zeigen, dass die Entwicklungstendenzen auf jenen Gebieten aufmerksam beobachtet werden müssen, die einen verhältnismäßig homogenen sozial-wirtschaftlichen Handlungsraum bilden, wie das z. B bei kommunalen Selbstverwaltungen der Fall ist. Diese sind aber oftmals zu klein und die Landkreise auf Grund ihrer unterschiedlichen lokalen Kraftzentren und Einzugsgebiete zu heterogen. Die Aufteilung der kommunalen Selbstverwaltungen nach ihren Einwohnerzahlen und die Beschreibungen der Landkreise sind aus den Anlagen 1 und 2 ersichtlich.

Überwiegend handelt es sich in Estland um kleine Selbstverwaltungen. Nur 44 von ihnen haben mehr als 5000 Einwohner, 182 kommunale Selbstverwaltungen (also 4/5 oder 80,5 %) zeichnen sich durch geringere Einwohnerzahlen aus. Deswegen muss noch einmal mit allem Nachdruck darauf hingewiesen werden: *Bei der Gestaltung eines effizienten Systems kommunaler Selbstverwaltungen* in Estland ist deren Zusammenschluss unumgänglich. Darüber hinaus ist wichtig, dass zur Gewährleistung einer größeren Nachhaltigkeit und zur Erzielung eines höheren Beschäftigungsgrades die Weiterentwicklung bestehender Unternehmen und die Gründung neuer Unternehmen nach Kräften gefördert werden muss.

In Estland heben sich 44 Kraftzentren<sup>11</sup> (Städte, Ortschaften, Gemeindezentren) ab, um die herum die Einzugsgebiete der Arbeitskräfte liegen (vgl. Anlage 3). Diese Einzugsgebiete liegen meistens in der Mitte eines Landkreises, und nur in seltenen Fällen überschreiten sie die Landkreisgrenzen. Die Randgebiete fallen entweder in das Einzugsgebiet eines anderen Kraftzentrums, oder sie bleiben völlig außerhalb jeglicher Einzugsgebiete. Die Pendlerbewegungen führen dazu, dass die Menschen ihre durch Einkommen erworbene Kaufkraft zum größten Teil vom Arbeitsplatzstandort in ihren Wohnstandort verlagern (durch Kauf von Waren und Inanspruchnahme von Dienstleistungen). Betrachtet man nun noch die Städte und das städtische Umland, und berücksichtigt man außerdem, dass innerhalb eines Landkreises gewöhnlich mehr als ein Kraftzentrum liegt, wird deutlich, dass im Hinblick auf eine ausgewogene Regionalförderung eine detaillierte Analyse der Kaufkraftverteilung unumgänglich ist.

Die im Jahre 2000 durchgeführte Erhebung zu den Pendlerbewegungen hat ergeben, dass jeder vierte Berufstätige außerhalb seiner Heimatstadt oder –gemeinde einen Arbeitsplatz hatte. Im Vergleich zu der im Jahre 1983 durchgeführten Erhebung ist festzustellen, dass während der Transformationsphase die Arbeitsmobilität in Estland deutlich zugenommen hat, und zwar um etwa das Zweieinhalbfache. Ursachen für die größere Arbeitsmobilität sind die gestiegene Nachfrage nach Facharbeitskräften, verbesserte Verkehrsmöglichkeiten und Verfügbarkeit über Wohnräume, aber auch höhere Wohnkosten in Städten. Auch die Tatsache, dass die Mehrzahl der neu entstandenen Arbeitsplätze in stadähnlichen Ortschaften anzutreffen ist, dürfte eine Rolle gespielt haben. (Eesti regionaalarengu... 2010).

Bei den Pendlerbewegungen ist der Anteil jener Pendler, die vom Lande in die Stadt zur Arbeit fahren, besonders stark gestiegen. Die Gründe dafür liegen sowohl beim Wegfall der Arbeitsplätze in ländlichen Regionen als auch bei der zunehmenden Suburbanisierung um die größeren Zentren. Im Zuge der in den 1990er Jahren gestiegenen Pendlerwanderung und im besonderen Maße durch die Suburbanisierung bilden sich in Estland immer deutlicher Wachstumsregionen heraus. Auf Grund der in 2002 erstellten „Analyse des Entwicklungspotenzials der städtischen Regionen in Estland“ kann man die Herausbildung von 12 städtischen Regionen beobachten (vgl. hierzu Anhang 4). Es stellt sich heraus, dass von 15 Landkreiszentren ganze 11 zu den Wachstumsregionen gehören (Tallinn, Tartu, Jõhvi, Pärnu, Haapsalu, Kuressaare, Paide, Rakvere, Valga, Viljandi, Võru). Von den städtischen Regionen ist nur die Stadt Narva im Landkreis Ida-Virumaa kein Landkreiszentrum. Mit seinen 65.000 Einwohnern (Stand: Anfang 2010) ist Narva nach Tallinn und Tartu die drittgrößte Stadt Estlands, wobei fast 96 % der Stadtbevölkerung Nicht-Esten sind. Vier Landkreise (Hiiumaa, Jõgeva, Põlva und Rapla) sind nicht zu den Wachstumsregionen zurechnen.

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<sup>11</sup> Hinweis: Die 44 Kraftzentren sind nicht gleichzusetzen mit den zuvor erwähnten 44 kommunalen Selbstverwaltungen. Es handelt sich hierbei um unterschiedliche institutionelle Gebiete und regionale Einheiten.

Bei der Förderung der oben erwähnten 44 Kraftzentren dürfen die genannten 12 Wachstumsregionen nicht außer Acht gelassen werden. Also ist eine regionale Ausbalancierung nur dann zu erzielen, wenn einerseits die Entwicklungsperspektiven der Wachstumsregionen und andererseits die Bedürfnisse und Möglichkeiten der Kraftzentren innerhalb dieser Regionen gleichermaßen berücksichtigt werden. Kurz: Die Zukunft der Wachstumsregionen und Kraftzentren liegt in ihrem komplexen Zusammenwirken.

Gleichzeitig gehen die Bemühungen des Staates in Richtung der Entstehung von vier Verwaltungsgebieten in Estland mit Zentren in Tallinn, Tartu, Jõhvi und Pärnu. Der Ausbau solcher Zentren setzt allerdings günstige Verkehrsmöglichkeiten für die Bewohner anderer Gebiete voraus. Weil das aber nicht der Fall ist, ist diese Vorgehensweise nicht die beste Lösung, sondern verschlechtert den Zugang zu staatlichen Dienstleistungen und bringt für die Bevölkerung einen zusätzlichen Aufwand und Extrakosten mit sich.

### **Schlussbetrachtungen**

Zur Bewältigung der gegenwärtigen Wirtschaftskrise ist eine fundierte Einschätzung der gegenwärtigen Lage in Estland unerlässlich. Erst auf einer solchen Grundlage kann man die notwendigen Schlüsse ziehen und die geplanten Maßnahmen effizient einsetzen. In der Europäischen Union wird der Regionalproblematik ein sehr hoher Stellenwert beigemessen. Folglich stehen die estnischen Entscheidungsträger vor der Aufgabe, über die Regionalentwicklung nicht nur zu sprechen und Pläne zu schmieden, sondern Geplantes auch tatsächlich umzusetzen. Sowohl die überregionalen als auch die regionalen Erhebungen spielen dabei eine wichtige Rolle. Aber zuweilen drängt sich die Frage auf: Ist man überhaupt fähig und in der Lage so viele Aufgaben auf einmal in Angriff zu nehmen? Die Zeit drängt und die Notwendigkeiten sind enorm!

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**Anlage 1.** Aufteilung kommunaler Selbstverwaltungen nach ihren Einwohnerzahlen<sup>12</sup>

Einwohnerzahl (10.11.2009)	Städte	Gemeinden	Insgesamt
0-1.000	1	38	39
1.001-1.500	2	46	48
1.501-2.000	2	29	31
2.001-3.000	-	30	30
3.001-4.000	4	15	19
4.001-5.000	3	12	15
5.001-7.500	5	15	20
7.501-10.000	2	4	6
10 001-50 000	11	4	15
50 001-100 000	2	-	2
100 001-	1	-	1
<b>Insgesamt</b>	<b>33</b>	<b>193</b>	<b>226</b>

Quelle: Kohalik omavalitsus... 2010.

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<sup>12</sup> In den Anlagen 1 und 2 beziehen sich die Angaben auf den Stand vom November 2009, weil am 18. Oktober 2009 die ordentlichen Wahlen zu den Kommunalvertretungen stattfanden und danach die Zahl der kommunalen Selbstverwaltungen bei 226 liegt.

**Anlage 2.** Landkreise Estlands: Fläche, Bevölkerungszahl, kommunale Aufteilung, Stand 02.11.2009

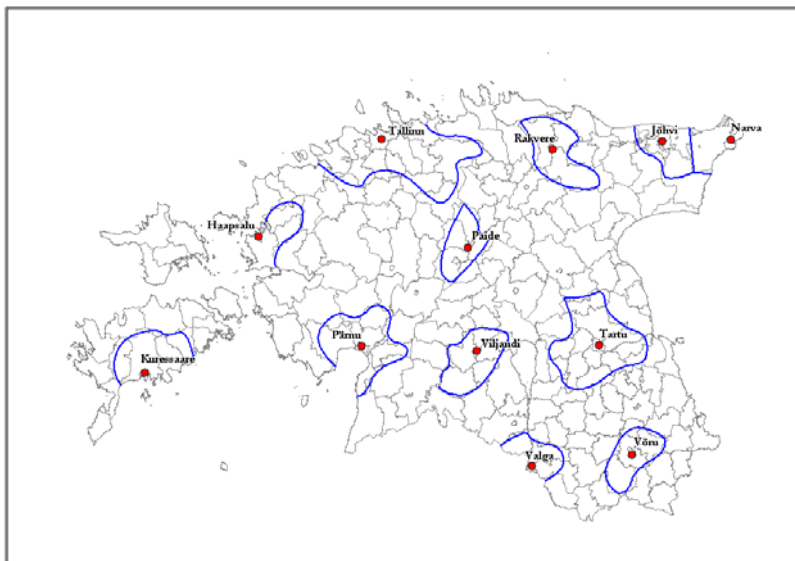
Nr.	Landkreis	Fläche (km <sup>2</sup> )	Einwohnerzahl	Städte	Gemeinden	Insgesamt
1.	HARJU	4.333	554.986	6	18	24
2.	HIUMAA	1.023	10.322	1	4	5
3.	IDA-VIRU	3.364	166.979	6	16	22
4.	JÕGEVA	2.604	35.422	3	10	13
5.	JÄRVA	2.461	34.940	1	11	12
6.	LÄÄNE	2.383	27.622	1	11	12
7.	LÄÄNE-VIRU	3.627	66.443	2	13	15
8.	PÕLVA	2.165	31.066	1	13	14
9.	PÄRNU	4.806	90.604	2	18	20
10.	RAPLA	2.980	37.179		10	10
11.	SAARE	2.922	35.925	1	15	16
12.	TARTU	2.993	148.838	3	19	22
13.	VALGA	2.044	34.057	2	11	13
14.	VILJANDI	3.422	53.636	3	12	15
15.	VÖRU	2.305	37.878	1	12	13
	Insgesamt	<b>43.432</b>	<b>1.365 845<sup>13</sup></b>	<b>33</b>	<b>193</b>	<b>226</b>

Quelle: Kohalik omavalitsus... 2010.

<sup>13</sup> Nach Angaben des Statistikamtes gab es in Estland am 01.01.2010 → 1.340.021 Einwohner; der Rückgang im Vergleich zur vorherigen Periode beträgt mithin 0,03 % (Enim ... 2010, b). Nach Angaben der Estnischen Zentralbank lag 2009 die durchschnittliche Einwohnerzahl Estlands bei 1.340.700 (Eesti majandusnäitajad ... 2010). Vergleicht man diese Daten mit den in Anlage 2 aufgeführten Zahlen des Innenministeriums, ergibt sich eine Differenz von etwas mehr als 25.000 Personen.



#### Anlage 4. Wachstumsregionen in Estland



Quelle: Eesti regionaalarengu... 2010.



# THE PROBLEMS AND DEVELOPMENT POTENTIAL OF REVENUE AUTONOMY IN ESTONIAN MUNICIPALITIES<sup>1</sup>

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## Abstract

In a regionally heterogeneous country like Estonia, it is a difficult task to create a local government revenue structure that guarantees even supply of public services across the entire country and, at the same time, revenue autonomy for the municipalities. In the theoretical part of the current article the suitability of different sources of own revenues are analysed in the context of Estonian municipalities. The empirical part of the article compares the financing principles of Estonian municipalities with other EU countries. Finally, the proportions of different own sources of revenues in the budgets of Estonian local governments are examined and suggestions are made for changing the current system.

**Keywords:** public finance, local government, revenue autonomy, Estonia

**JEL Classification:** G, H

## Introduction

During the last three decades the decentralization of the public sector administration system has increasingly been considered around the world. According to the principle of subsidiarity dominant in the EU, public sector functions should be assigned to the lowest possible level of government. From one perspective, this helps to involve citizens and nongovernmental organizations in improving the efficiency of governance. From another perspective it is necessary to support political pluralism and the free competition of ideas in society. That is why many countries (both, developed and transitional) are dealing with questions concerning the assignment of functions to sub-national governments, and the strengthening of their fiscal autonomy. To solve issues of sub-national fiscal autonomy, European countries refer to the European Charter of Local Self-Government, which EU member states signed on 15 October 1985. Estonia ratified the Charter on 28

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September 1994 and it came into force from 1 April 1995<sup>3</sup>. Estonia committed to follow all the articles of the Charter over the whole territory under its jurisdiction<sup>4</sup>.

In order to guarantee better performance in a government system it is at first necessary to balance the distribution of rights and obligations between different levels of government, and also to guarantee an optimal relationship between freedom and responsibility at different levels. From the economic point of view, the nature of the relationships between different levels of government is determined by a cash flow system that facilitates fulfilling the tasks each level is responsible for. Still, the rights and obligations and freedom and responsibility at different levels of government stated in the law are inevitably threatened if the public sector funding system to support them is inadequate. This study focuses on one aspect of public sector finance, namely revenue autonomy in local governments.

As Estonia is a small country, it only has two levels of government – central and local. So the administrative system is quite simple in this respect. However, municipalities of different sizes and in different regions have such different economic bases that no intergovernmental fiscal system based on common principles and guaranteeing autonomous fulfilment of local government functions has so far been successfully established. The question of revenue autonomy rises especially sharply during the current economic and financial crisis.

In Estonia the number of functions under local control has constantly risen. Until the financial and economic crisis, especially during the last economic boom, public sector revenues grew quickly and municipalities were able to fulfil their tasks easily. However, revenues that are directly under the control of local governments make up only a minor part of their budgets. During the economic and financial crisis, the weakness of sub-national revenue autonomy became obvious – the central government divided the proportion of budget revenues in favour of itself. The dependence on funds directly decided and distributed by the central government constrains the freedom of the municipalities to fulfil their functions and makes it more difficult for them to compose and implement long-term development plans. Such a situation creates political tensions, weakens democracy and decreases the accountability of local governments to their constituencies. That is why solving the problems associated with sub-national revenue autonomy has become one of the key problems in Estonian society.

The objective of the current article is to analyse the problems connected with guaranteeing revenue autonomy in Estonian municipalities, and to create proposals to increase it. The following research tasks were set to achieve this objective:

- to analyse the nature of revenue autonomy in local governments and to justify its necessity;

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<sup>3</sup> RT II, 1994, 26, 95.

<sup>4</sup> The Charter also gives the possibility to follow only a certain number of selected paragraphs (art12) and to apply the Charter only to the territory determined by the state itself (art16). (RT II, 1994, 26, 95).

- to analyse the suitability of different revenue sources at local level;
- to assess how revenue autonomy in Estonian municipalities has been guaranteed in the law;
- to assess the relationship of the local governments' own revenues to GDP and to total general government revenues in the international context, and to analyse inter-state differences in terms of the level and structure of Estonian local governments' own revenues;
- to provide suggestions for increasing revenue autonomy in Estonian municipalities.

## 1. The nature of and need for sub-national revenue autonomy

According to the traditional theory of fiscal federalism, the provision of public services considered necessary by the state should take place in accordance with the principle of subsidiarity – it must occur at the lowest government level, where the major benefits and costs of these services remain inside the area of the jurisdiction. Taking into account the advantages of local governments in providing public services according to the wishes and needs of the local population, the application of the principle of subsidiarity usually results in quite substantial decentralisation of public sector functions.

In order to effectively fulfil the tasks given to them by law, local governments must have adequate revenues (either raised locally or transferred from higher levels of government) and the authority to make decisions about expenditures (Inter-governmental... 2010). The need for fiscal autonomy of local governments is also stressed in the European Charter of Local Self-Government. Article 9 of the Charter<sup>5</sup> states that “local authorities shall be entitled, within the national economic policy, to adequate financial resources of their own, of which they may dispose freely within the framework of their powers”.

The authority local governments have in determining the level and structure of their expenditures is highly dependent on the nature of their revenue sources. Sub-national revenues can be divided into three broad categories: own revenues, borrowed resources and transfers from higher government levels. Complete revenue autonomy in local governments can only be guaranteed via the municipality's own revenues. The authority of local governments to make decisions on the utilisation of borrowed and transferred resources depends on the specific regulations connected to them<sup>6</sup>.

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<sup>5</sup> RT II, 1994, 26, 95.

<sup>6</sup> Transfers from central government can be divided into two broad categories: a) specific or conditional or special-purpose grants; b) unconditional or general or block grants. In the first case the provider of the grant (for instance central government) determines what services the money should be spent on. In the second case local governments can use the grant for any purpose they wish.

A revenue source can be categorised as the municipality's own revenue if it fulfils three conditions (Swianiewicz 2003):

- 1) the revenue source must be given to local governments in full without any additional conditions and for an undefined period;
- 2) the revenue source must be related to the local economic base, so that economic growth causes the increase of the municipality's own revenues;
- 3) local governments must be able to exercise at least some discretion over this source of revenue (e.g. they have the right to set the tax rate, at least within the limits set by law).

The most important prerequisite for the existence of sub-national revenue autonomy is the ability to choose the level of revenues collected, because this gives sub-national governments the power to alter the level of public services offered to their residents according to local preferences and needs (McLure, Martinez-Vazquez 2000). The main categories of sources of own revenues in local governments are local taxes, user fees and charges for services provided by local governments, and revenues from local government property. Also, the opportunity to obtain independent access to credit markets can be seen as an important component of sub-national revenue autonomy.

Article 9 of the European Charter of Local Self-Government<sup>7</sup> also emphasises that at least part of the financial resources of municipalities shall come from local taxes and charges, for which local governments have the right to determine the rate (within the limits set by law). But the Charter does not give any specific guidelines concerning the "right" proportion of local taxes and charges in comparison with other revenue sources.

According to the specification of own revenues, shared taxes cannot be considered part of a local government's own resources. In the case of shared taxes, municipalities receive a certain proportion of tax revenues collected within their territories, but they have no control over the tax base, tax rates or the distribution of tax revenues between central and local levels. Therefore, municipalities can determine the structure of their expenditures, but they are not able to alter the whole level of services offered because they have no influence over the amount of revenues coming into their budgets.

At the same time the right to set local surcharges on central taxes (so-called "*piggybacking*")<sup>8</sup> ensures revenue autonomy for local governments because in that case municipalities can determine the volume of tax revenues collected and so alter the total amount of public services offered. The right to set the tax rate is considered the most important attribute of revenue autonomy (Norregaard 1997; McLure, Martinez-Vazquez 2000).

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<sup>7</sup> RT II, 1994, 26, 95.

<sup>8</sup> Under this approach central government defines the tax base and administers both the collection of central tax and surcharges set by local governments. The tax rate of the central government can also be zero (as in the case of Estonian land tax).

The authority to make decisions is a precondition of responsibility. So the accountability of local governments to their constituencies is usually best promoted by creating a clear and close linkage between their expenditure responsibilities and the amount of revenues under their direct control (Intergovernmental... 2010). Then the increase in the level of local service provision would result in the corresponding increase in the tax burden of the local people and firms consuming these public services. So the ability of the municipality to provide public services would depend to a large extent on its decisions regarding its own revenues (Swianiewicz 2003).

If local financing and fiscal authority of municipalities are directly linked to the functions of local governments and their service provision responsibilities, then the local politicians can keep their promises and are forced to bear the political costs of their decisions (Degefa 2003). A system in which a substantial part of local revenues comes from own sources provides local authorities with incentives to rationalize spending and search for potential savings. It also increases taxpayers' interest in local government activities. (Swianiewicz 2003)

According to traditional economic theory, in the presence of revenue autonomy, higher local taxes mean a local decision to increase the supply of local public services. The final income of inhabitants (i.e. the income after taxes together with the value of consumed public services) will remain unchanged. Local voters have just decided to replace some consumption of private goods with consumption of public goods. Efficiency is guaranteed by the fact that those voting over the size of local spending are the same who bear the tax burden emanating from these expenditures<sup>9</sup>. (Bailey 1999) At the same time, an oversupply of public services is avoided in regions where local inhabitants prefer a lower tax burden and are ready to accept a lower level of public goods. The provision of public services in accordance with local preferences and needs probably enhances the taxpayers' willingness to pay and so improves revenue mobilisation (see for instance Torgler, Werner 2005; Torgler 2007). At the same time, decentralization can help to broaden the tax net, enabling the capture of tax bases about which local governments have more information than the central government (Bahl 1999). Financing public services from own revenues also increases local government's interest in supporting the development of the local economy in order to strengthen its tax base.

If local spending is funded out of national tax revenues through transfers from the central government, then local governments incur only a fraction of the political and financial costs of their decisions (Entering... 2000) because they have no incentives to fully exploit their tax base (de Mello, 2000). As the increase in local government spending will not result in the growth of the local tax burden because it is financed from central government transfers or shared taxes (i.e. those who vote for increased spending are not those who pay for them), the provision of local public services may exceed its optimal level. The result could be an increase in the overall level of public spending, as the municipalities will exert pressure on the central government in

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<sup>9</sup> It is assumed, among other things, that there are no spillovers in the provision of local public services and no possibilities for tax exporting.

order to obtain higher transfers to finance the increased demand for local public services (Swianiewicz 2003).

Financing sub-national governments through shared taxes and transfers from central government is justified only in the case of deconcentration. In that case the central government shifts responsibilities for a policy to its field offices to guarantee uniform supply of public services across the entire country, rather than transferring decision-making authority to democratically elected local bodies. On the other hand, in the case of devolution, when democratically elected local governments exercise complete power and control over the transferred policies, they also need to be able to raise the revenues necessary for the fulfilment of their functions.

In summary, although certain types of central government transfers (e.g. general grants and shared taxes) give the municipalities greater autonomy in determining their expenditure structures than other types (e.g. specific grants), a large proportion of local revenues should come from their own sources in order to guarantee the accountability of local governments and the provision of services in accordance with local preferences and needs. Sub-national governments do not have to cover all their costs from their own revenues – total revenue autonomy in municipalities is rare even in developed countries (Rodden 2004) – but the increase in local spending has to result in a corresponding increase in local own revenues (Dahlby 2002; Bird 1999). That is why the following section focuses on own revenues in local governments.

## **2. Own revenues in local governments**

The compliance of public services with the preferences and needs of the local population can best be achieved through cost-recovery charging systems (Fjeldstad 2001). If properly designed, user charges and fees directly affect the amounts consumed, clearly connecting the paid sum with the amount of service used, and are borne only by those who actually use the service (Entering... 2000). According to traditional economic theory, local taxes and transfers from the central government should only be used to fund such services that cannot be financed through user charges due to some market failure (Bailey 1999). For all services where the beneficiaries are easily identifiable and which can be operated on a commercial basis (e.g. different infrastructure services like water, sewerage, waste management, public transport, etc.), user charges are an equitable and efficient means of covering the costs of constructing, maintaining and operating the infrastructure, and for demand management (Kim 1997). However, if we take the theories of transaction costs and distributional coalitions into account and consider the problems associated with collective decision-making, the possibility of charges being manipulated by those who administer them in order to maximize their personal utility or to secure gains for their distribution coalitions should not be forgotten (Bailey 1999; Dehne *et al.* 2009).

As the beneficiaries of public services are not clearly identifiable in all cases, municipalities also need to be able to levy local taxes. Although there is no ideal

way for dividing taxation responsibilities between central and local governments, the traditional theory of fiscal federalism provides some guidelines. The most general and important of them indicates that the vertical allocation of resources should reflect the allocation of functions between tiers of government. As stabilisation and distribution functions are mainly in the hands of the central government, the central government needs control over taxes that are suitable for these purposes and assure the necessary funds (Dahlby 2002). The administrative capacity of lower levels should also be taken into account before assigning them tax powers. Due to efficiency considerations it could be reasonable to define the tax base centrally and also to collect taxes centrally in order to limit administrative expenditures, but then to allow sub-national levels to set the tax rates (at least within the limits set by law) in order to assure the accountability of local governments (Litvack *et al.* 1998; McLure, Martinez-Vazquez 2000).

The most important criteria that a good local tax should meet are as follows (Swianiewicz 2003; Bailey 1999; McLure, Martinez-Vazquez 2000; Norregaard 1997; Bird 1999).

- 1) The revenue potential of a local tax should be sufficient to finance the level of local services for which local people vote.
- 2) A local tax should meet the principles of horizontal and vertical equity. In other words, within the jurisdiction, taxpayers in a similar financial situation should pay similar amounts of tax and taxes should not be regressive by nature.
- 3) The tax base should be evenly distributed in the geographical sense because otherwise the differences between richer and poorer municipalities could become very large, which would in turn imply creating a complex horizontal equalization system.
- 4) The tax base should be well defined in the geographical space so that it is easy to decide which local government has the right to levy the tax and to receive the revenues, in order to avoid discussions over the distribution of tax revenues between municipalities, to limit possibilities for tax avoidance and to prevent double taxation.
- 5) In order to enhance the accountability of local governments to taxpayers, local tax should be visible, so that taxpayers know exactly how much they pay.
- 6) The tax burden should be on local residents, it should not be easily exported in order to avoid shifting the expenditures connected with additional service provision to people living outside the jurisdiction – people who vote over the size of local government spending must bear the tax burden emanating from these expenditures in order to increase efficiency.
- 7) According to the traditional view of tax competition, the bases that are taxed at the local level should be relatively immobile because uncoordinated taxation of highly mobile resources can cause excessive tax competition resulting in under-provision of local public services and even in the collapse of the local welfare system in extreme cases. But according to the Tiebout (1956) hypothesis, the threat of tax-base migration helps to ensure that the local tax burden is in accordance with the amount and quality of local public services, and that both are in line with the taxpayers' preferences;

- 8) The elasticity of the tax yield against inflation should be low, forcing the municipalities to use a conservative fiscal policy (raising tax rates is politically difficult even if it reflects overall price growth). On the other hand, taxes with higher elasticity against inflation provide a more secure financial base for the delivery of local services in the circumstances of growing costs<sup>10</sup>.
- 9) The revenue yield from a local tax should not be strongly affected by cyclical variations in the local economy so as to avoid the implementation of a pro-cyclical fiscal policy at the local level and to guarantee the supply of services during recessions. On the other hand, the local tax base should increase in line with local economic development so that local authorities have the incentives to foster economic growth.

The principle of benefit taxation should be followed as much as possible at the local level – those who benefit from services supplied by local government should bear the costs of their provision. Last but not least, the system of local taxes should not be too fragmented. If local governments use a large number of taxes with low revenue bases, the results will be high administration costs and an unnecessarily complicated non-transparent tax system, which reduces the accountability of local governments. (Swianiewicz 2003; Bahl 1999; Intergovernmental... 2010)

By analysing the suitability of different types of taxes for levying at the local level, it can be concluded that there are only a few good options. To be more specific, there is no “ideal” local tax, which would fulfil all the principles of local taxation given above. One of the most suitable local taxes is a local property tax, especially a residential property tax (not a local business property tax). The tax base of a property tax has low elasticity against economic activity and inflation. It is connected to a certain jurisdiction, and is geographically quite evenly distributed, although large regional differences in real estate values can exist. In addition, the tax base for a residential property tax<sup>11</sup> is immobile, the tax burden cannot easily be exported (except in cases where property owners live outside the municipality), tax is visible and will, at least in principal, put a burden on all the residents of the municipality (directly or indirectly through rent payments). So the local people who benefit from local government services will carry most of the tax burden connected to these services. On the other hand, property taxes are quite complicated and expensive in administrative terms because of the need for periodic re-assessment of property values, especially in the case of rapidly changing economic conditions as in transition countries. In addition, property tax revenues are usually not large enough to finance the delivery of the most important local functions – the good visibility of property tax makes it one of the least popular taxes politically, and this fact keeps the rate relatively low. Raising property tax rates is also restricted by equity considerations. Although there is usually a fairly strong positive correlation between

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<sup>10</sup> The European Charter of Local Self-Government (art 9) also says that local government revenues should be sufficiently buoyant in nature to keep pace with the real evolution of the cost of carrying out their tasks (RT II, 1994, 26, 95).

<sup>11</sup> In the case of local business property taxes, those conditions are not necessarily fulfilled (see for instance Bailey 1999).



the value of the property and the income of its owner, there are also several deviations from this rule (e.g. in the case of pensioners the value of the property may reflect their past rather than their current income).

As the income elasticity of value added tax (VAT) and sales tax is relatively high and their revenue potential is large, these taxes are quite suitable for economic stabilization, which is the function of central government. The administration of VAT and sales tax at the local level is quite complicated and expensive, they offer good potential for tax exporting through cross-border shopping, they tend to be regressive and are not sufficiently visible to voters because the tax is hidden in the price of the commodity. That is why VAT and sales tax are not very well suited to the local level. Only when a well-functioning VAT exists at the central level, is it possible to give municipalities the right to set a local surcharge on top. Hence, this solution is more suitable for large countries and for the regional rather than local level (for more information see Bird 1999, 2003).

Foreign trade taxes are not suitable for sub-national level, because foreign trade policy must be under central government control in order to guarantee its efficiency. The applicability of specific consumption taxes (e.g. excises) at the local level depends on many circumstances. All kinds of vehicle-related taxes (excise on motor fuel, parking fees, motor vehicle registration fees, etc.) are considered to be suitable for the local level, as they can be linked to associated expenditures on local roads, and so follow the principle of benefit taxation. Hence, due to administrative and efficiency considerations excises are generally more suitable for the regional than for the local level, and even at the regional level they can be used only when tax rates are not remarkably different (see for instance Bird 2003; Dahlby 2002; Norregaard 1997).

Taxes on the exploitation of natural resources are not suitable for the local level because the tax base is usually very unevenly distributed among local governments, which creates large revenue differentials between municipalities and enables tax exporting. On the other hand, intensive exploitation of natural resources can result in a remarkable environmental impact, the costs of which will be to a large extent felt by the municipality.

According to the principles of local taxation given above, corporate income taxes should not be levied at the local level. Their administration is difficult, especially if companies are active in several different municipalities raising the question of the fair distribution of tax revenues between these jurisdictions. As the tax base is strongly cyclical, this tax is suitable for stabilizing the economy at the central level. Capital is one of the most mobile factors of production, making taxation of it difficult at the local level due to tax competition. Corporate income tax is also invisible to voters and provides a good opportunity to export tax – most of the tax burden will probably be shifted to consumers and many of them may live outside the municipality. The result will be the loss of a clear connection between increased local spending and local tax increases.

Personal income tax is more suitable for local governments. The mobility of individuals between municipalities is not so high in practice as to create serious tax competition. The tax base is clearly connected to the specific jurisdiction and it is not easily exportable. The tax is also visible to taxpayers. This stimulates the accountability of local governments and forces them to act in accordance with the real preferences of voters. But as a result of tax exemptions and deductions, a large proportion of the local inhabitants who benefit from the services provided might in practice not pay for them. The tax base is not evenly distributed between municipalities geographically. Personal income tax is progressive, has high income elasticity and large revenue potential, so it is highly suitable for economic stabilization and income redistribution, which are the functions of central government. Due to these problems and administrative considerations it is usually not recommended to give personal income tax fully into the hands of local government. A better option is to give local governments the right to set a local surcharge on the central personal income tax (at least within the limits set by law), but leave the tax base and tax administration under central government control (see for instance Bird 2003; Fjeldstad 2001; Norregaard 1997).

Payroll taxes should not be levied by local governments because the yields from these taxes are usually used for social and health care programs under the control of central government. But there are also several other reasons why personal income tax is more suitable for setting local surcharges compared with payroll taxes, although the tax bases are quite similar in both cases (for more details see for instance Bird 2003; Norregaard 1997). Poll tax is suitable as a local tax in many ways, but its use is restricted by its high regressiveness.

Dividing taxes between government levels according to the principles given above in most cases results in insufficient revenues for local governments to fulfil their functions. We have shown that the only suitable tax for the local level is property tax, but this tax cannot provide sufficient revenues for municipalities even when it is properly employed. That is why many countries allow local governments to levy different business and consumption taxes, which however, are not suitable for the local level according to the principles given above and create distortions in the economy (see for instance Dahlby 2002; Bahl 1999; Bird 2003). But even the long list of local taxes might not guarantee the revenues necessary for local governments if the income potential of most of these taxes is small compared to their administrative costs. That is why it may be necessary to give local governments access to some broadly based taxes. In administrative and tax export avoidance terms, the best option would be to let local governments set a fixed rate surcharge on top of the centrally set personal income tax. But it is necessary to ensure that such an increase in the burden of local taxes is compensated through the reduction of some central taxes, so that the overall tax burden for citizens and firms does not increase as a result of the reform (Swianiewicz 2003).

Local taxes and user charges are not the only own revenue sources for local governments. Municipalities can also obtain revenues from their property – from the commercial development of land and property and the subsequent rental income,

from the sale of plots or buildings, from levying betterment charges on property developers for the provision of infrastructure and so on (Swianiewicz 2003; Kim 1997; Bird 2003; Friedrich *et al.* 2004). In some countries revenues from municipal property, especially from the sales of property, can only be used for capital investments, and not to cover current spending. Even if there is no such legal restriction, doing this is advisable as it helps to guarantee a balanced budget (Swianiewicz 2003). Another important component of revenue autonomy in local governments is the ability to obtain independent access to credit markets, although the borrowing activities of municipalities are not considered in the current article due to limited space.

Appropriate volume and structure of local government own revenues also depend on what functions have been given to the local level in the country under consideration. If the municipalities are only responsible for offering basic infrastructure services (e.g. water, sewerage, maintenance of local roads, public transportation), then revenues for providing these services can in most cases be obtained through user charges and property tax, which are the most suitable revenue sources for local governments according to the principles given above. But if the municipalities are also responsible for providing some important and more expensive social services (e.g. education, health, social care), they usually need access to more elastic revenue sources (Bird 1999), for instance surcharges set on top of the central personal income tax.

### **3. The legal basis for financing municipalities in Estonia**

According to §154 of the Estonian Constitution,<sup>12</sup> local governments which operate independently according to law “resolve and regulate all local issues”. Hence Estonian municipalities have the power of general competence like local governments in most European countries (Bailey 1999). This means that local governments have the authority to undertake any activities, which they regard to be in the local interests unless these are clearly forbidden or already undertaken by central government. This approach is also in accordance with the principles of devolution. The same paragraph of the constitution describes the basis for financing these functions as follows: “duties may be imposed on local governments only pursuant to law<sup>13</sup> or by agreement with the local government. Expenditure related to the duties of the state imposed by law on a local government shall be funded from the central budget”. Paragraph 157 complements this, stating that “a local government has the right, on the basis of law, to levy and collect taxes, and to impose duties”. Nevertheless the Estonian Constitution does not explicitly require revenue autonomy in local governments, which is an important factor in the promotion of local accountability.

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<sup>12</sup> RT 1992, 26, 349; last amendment RT I, 2007, 43, 311.

<sup>13</sup> Local governments’ functions and responsibilities are determined by the Local Government Organisation Act (RT I, 1993, 37, 558; last amendment RT I 2009, 62, 405).

Paragraph 5 on “Revenues of budget” from the Rural Municipality and City Budgets Act<sup>14</sup> provides a list of municipal revenue sources on the basis of their economic content: 1) taxes; 2) sales of goods and services including user charges; 3) (one-time) sales of material and immaterial assets; 4) income from assets; 5) financial support including foreign aid; 6) other revenues including fines.

The central government budget as the source of revenues for local governments is related mainly to the fifth item in the above list, because remarkable support can originate only from the central budget in most cases. According to §9 of the State Budget Act<sup>15</sup> “grants from the central budget are passed on to the municipal budgets via 1) the equalisation budget fund; or 2) special-purpose (conditional) grants”. Paragraph 7 of the Rural Municipality and City Budgets Act<sup>16</sup> states additionally that “after the budget has been accepted, if any legal acts are introduced by parliament or government, which result in budget revenue decreases or expenditure increases, then those resource shortfalls will be made up from the central budget”. As the current article is focused on the issue of local government own revenues, the problems connected with grants from the central government are not considered here. Central government transfers to municipalities in Estonia have been analysed in detail in Reiljan *et al.* (2006) and Friedrich *et al.* (2009). The latter also offers suggestions for reforming the system of transfers between government levels in Estonia.

The sources of tax revenues in Estonian local governments can be divided into two broad categories: 1) central taxes, which are paid either in full amount or partly into local budgets, and 2) local taxes.

Since the establishment of the one-tier local government system in 1994, the main revenue source for Estonian municipalities has been a fixed share of central personal income tax (the rest goes to the central budget). At first 52% of revenues from personal income tax receipts were paid into local budgets. In 1996, the share of municipalities increased to 56%. Since 2004, the major tax policy objective in Estonia has been to reduce direct taxes and to replace them with indirect taxes. The personal income tax rate has been gradually reduced from 26% to 21%. Since 2004, the amount of personal income tax received by local governments does not depend on tax deductions. The introduction of new deductions, increasing basic exemptions or reducing tax rates now has an impact only on the tax revenues of the central budget. Consequently, the local authorities received 11.4% of residents’ total revenues in 2004 and 11.9% in 2009, while the central government’s share had dropped to 9.1% by 2009. As a result of the fiscal problems induced by the economic crises, the reduction of personal income tax rate was stopped in 2009 and the share of local governments was cut to 11.4% of residents’ total revenues. As the personal income tax base, tax rate and the share of tax yields received by municipalities are solely determined by the central government, personal income tax cannot be considered as an own revenue source for local governments. As

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<sup>14</sup> RT I 1993, 42, 615; last amendment RT I 2009, 35, 232.

<sup>15</sup> RT I 1999, 55, 584; last amendment RT I 2009, 19, 117.

<sup>16</sup> RT I 1993, 42, 615; last amendment RT I 2009, 35, 232.

municipalities cannot influence their revenues from income tax by changing tax rates or the tax base, they are not able to alter the total level of services provided to their residents. Budget planning is also complicated at the local level because central government can unexpectedly change the share of personal income tax transferred to municipalities, as it did in 2009.

Local governments in Estonia also receive 100% of land tax receipts, which is also a central tax according to the law. Land tax is paid on all land with only a few exceptions (e.g. areas where economic activity is prohibited, land attached to the buildings of the diplomatic missions of foreign countries etc.). The tax rate is determined by the local council within limits given by the law. The land tax rate is 0.1-2.5% of the taxable value, in the case of agricultural land 0.1-2.0%. Municipalities can also offer some tax exemptions and deductions (e.g. to pensioners on residential land in their use) and vary tax rates according to land usage. As local governments can directly influence land tax yields, it is clearly an own revenue source for Estonian municipalities.

Local governments also receive the fee from the use of natural resources and the special use of water, but the magnitude of the fee and the extent to which it is paid into local budgets is determined by the Government of the Estonian Republic. Although the share of such receipts is small on average, it is very important for some local governments, mainly in the northeast of Estonia. As local governments do not determine the base or the size of these fees, they cannot be considered own revenues for the municipalities.

According to the Local Taxes Act,<sup>17</sup> municipalities have the power to impose and levy several local taxes: sales tax, boat tax, advertisement tax, road and street closure tax, motor vehicle tax, animal tax, entertainment tax and parking charges. In addition, local governments have the right to impose user charges in accordance with the law. They also have quite comprehensive autonomy in managing their own property and can earn revenues from that. User charges and revenues from the management of assets are clearly own revenue sources for local governments. Revenues from sales of assets are also own revenues, as the decision to sell is made by the municipality itself, but due to the unsustainable nature of these revenues they should not be used to cover current expenditures.

#### **4. Municipal finances in Estonia in comparison with other EU members**

Even in such an economically integrated and culturally similar region as the EU, countries differ remarkably in terms of the level of decentralization and autonomy of local governments. At the same time, it is difficult to compare countries. There is no single, universally recognized approach for measuring decentralization, as it is a remarkably complex phenomenon. To measure the overall level of fiscal decentralization, the share of sub-national expenditures (or revenues) in total general

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<sup>17</sup> RT I 1994, 68, 1169; last amendment RT I 2009, 62, 405.

government expenditures (or revenues) is commonly used. The ratio of local expenditures (or revenues) to GDP is also used.

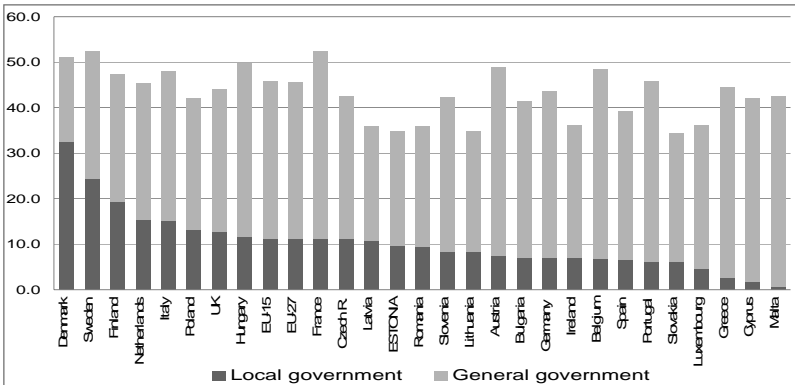
The problem with these indicators is that they do not deal with several important aspects. Firstly they do not take into account the real autonomy of local governments. It is possible to talk about a genuinely decentralized government system only if municipalities have considerable authority to make decisions about expenditures and the ability to raise revenues to cover those expenditures, but available data does not differentiate between autonomous and non-autonomous local revenues (and expenditures). Secondly these indicators do not take into account the whole impact of local governments. Nowadays, several local services are financed from user charges and provided by municipal enterprises or contracted out to private firms or non-government organisations. These kinds of alternative forms of service delivery, where government is responsible for providing services, but does not produce them itself, are being used more and more in the world. Revenues and expenditures connected with those services are not part of the local government budget (except subsidies paid from and share of profits received to the budget). As available data for international comparisons does not take into account the aspects of local level autonomy and alternative forms of service delivery, the indicators mentioned before are, despite of their deficiencies, practically the only way to compare the influence local governments have in different countries.

Taking into account the Estonian context, the focus of the current paper is on local level issues. So the regional level has not been considered in the following analysis<sup>18</sup>. In EU member states, local government expenditures as a share of GDP range from less than one percent in Malta to more than 30% in Denmark (see figure 1). The share of local government expenditures from general government expenditures also differs greatly – from 1.5% in Malta to 65% in Denmark. The most decentralised are the Nordic countries (mainly Denmark and Sweden, but also Finland). Regional and local levels together are remarkably influential also in federal countries (Spain, Belgium, Germany, Austria) – respectively 16-22% from GDP and 33-55% from general government expenditures. The role of municipalities in those countries is nevertheless clearly below the EU average.

There is no strong correlation between the ratio of local government spending to GDP and general government spending to GDP in EU countries (the correlation coefficient is 0.5). According to figure 1, it cannot be said either that the CEE countries are more centralized than the economically more developed Western European countries. The ratio of local government expenditures to GDP in Estonia is quite close to the EU average (9.7% and 11.3% respectively) and the ratio of local government spending to total general government spending is even higher than the EU average (27.9% and 24.7% respectively). Hence, Estonia can be considered fairly decentralized in the EU context.

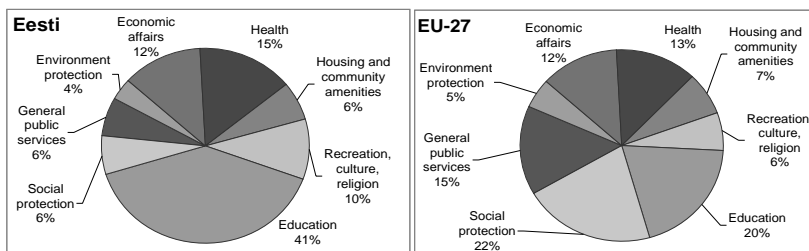
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<sup>18</sup> Anyway, Eurostat gives regional level data only for federal countries (Austria, Belgium, Germany, Spain).



**Figure 1.** The ratio of general government and local government expenditures to GDP (%) in the EU member states in 2007. (Eurostat, composed by authors)

The distribution of municipal expenditures according to expenditure type differs very much in EU countries. When comparing Estonian expenditure structure with the EU average (see figure 2), it can be seen that spending on education (41% of local government total spending) dominates in Estonia compared to other expenditures. In the EU the expenditure distribution is more even on average – in the first place there is social protection (22% of total local spending), followed by education (20%), general public services (15%), healthcare (13%) and economic affairs (12%). The figures for housing and community amenities, recreation, culture and religion, and environmental protection are 5-7% of total local expenditures. In Estonia, the next most important fields of local spending after education are health (15% of total local government spending) and economic affairs (12%), which have similar ratios compared to the EU averages. Recreation, culture and religion are supported remarkably more in Estonia (10% of total expenditures) than in the EU on average. But the level of expenditure on social protection in Estonia (6% of total expenditures) is greatly lower than the EU average. The operational costs for municipalities in Estonia seem to be relatively lower than the EU average, because the share of general public services from total local expenditures is only 6% in Estonia compared to 15% in the EU. Also, the ratio of general local public services to GDP is lower in Estonia compared to most of the other EU countries (in Estonia it is 0.6%, the EU average is 1.6%). Spending on housing and community amenities in Estonia is on par with the EU average (6% of total local expenditures). The expenditure type with the smallest share in Estonia, as well as in the EU, is environmental protection (4% of total local spending).



**Figure 2.** Distribution of municipal expenditures in terms of expenditure type in Estonia and in the EU-27 in 2007. (Eurostat, composed by authors)

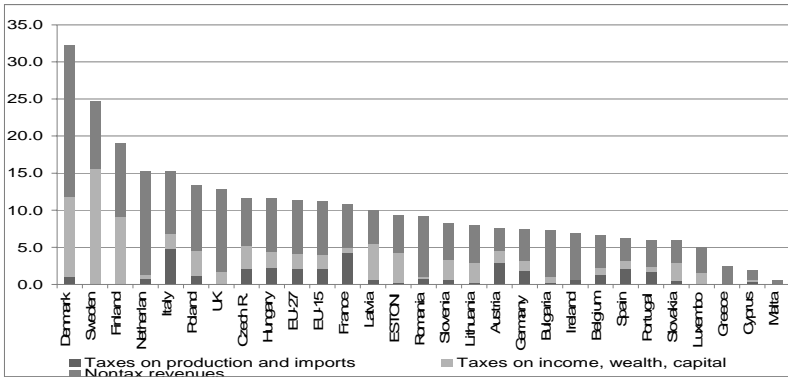
There is no common model for financing municipalities in the EU and differences between countries are large (see figure 3). In most of the member states (except UK, Sweden, Finland, Greece and Malta), municipalities get at least part of their revenues from property taxes. In most cases these tax yields form at least 50% (in many countries even 100%) of taxes on production at the local level. At the same time revenues from property taxes constitute no more than 1% of GDP, except in France where the share is 2.4% of GDP, and in Belgium and Denmark (1.1% of GDP).

The utilisation of different income taxes at the local level is also very common in the EU. Only municipalities in Ireland and Malta do not obtain any revenues from them. On the other hand, in Sweden, Finland, Estonia, Latvia and Slovakia income taxes provide over 40% of total revenues for local governments (the EU average is below 18%). Only in Malta, where the share of local governments in general government spending is marginal, do local governments not get any tax revenues at all. And yet, only in Sweden, Austria, Latvia, Spain and Slovakia do tax revenues constitute more than half of the total revenues for the municipalities (the EU average is 36%). Moreover, it is not known whether these revenues come from shared taxes or from taxes that are under the control of the local governments themselves, as Eurostat does not differentiate between them<sup>19</sup>.

To a large extent the financing of local governments in the EU is based on non-tax revenues (see figure 3), among which the most important are grants from the central government. The other sources of non-tax revenues are user fees, revenues from property, fines etc., which are own revenues by nature, but the data presented by Eurostat does not make it possible to distinguish them from grants. The majority of fees do not go through local government budgets, so their utilisation can be analysed only with the help of case studies, because there are no general statistics even at the single country level.

<sup>19</sup> The IMF's "Government Finance Statistics", which is the most representative international database of public sector finance, also does not enable to distinguish local expenditures and revenues by their autonomy.





**Figure 3.** The ratio of local government revenues to GDP (%) in EU member states in 2007. (Eurostat, composed by authors)

The autonomy of local governments concerning both revenues and expenditures has been analysed by the OECD (Fiscal... 2002). The major difficulty associated with using this survey is that it is conducted on an occasional basis (the data is not renewed regularly) and covers only a limited number of countries (10 CEE countries that are now members of the EU, and in some categories also 6-8 “old” EU member states). The OECD identifies three main sources of sub-national revenues: own revenues, other free revenues and tied revenues. Own revenues are composed of own taxes, i.e. taxes on which local governments have significant control (over bases and/or rates), and non-tax revenues (except transfers). Other free revenues are general grants, shared taxes and taxes where both the tax base and tax rate are set by the central government, but the tax revenues go to the local budgets. It is assumed that in the case of other free revenues local governments are free to allocate them between expenditure categories according to their preferences, although they cannot determine their size. So these cannot be considered as local own revenues that give revenue autonomy to municipalities. Tied revenues are specific grants from the central government.

According to the OECD (Fiscal... 2002) in 1999 the share of own revenues from local government current revenues was highest in the Czech Republic and Slovakia (40%) and lowest in Lithuania (5%) among the CEE countries. In Estonia, the ratio of own revenues to total local revenues was only 15%, which was remarkably lower than the CEE average (25%). Most of the own revenues in CEE countries came from non-tax revenues (17% of total local revenues on average), and not from own taxes (7% of total local revenues on average). Revenues from own taxes were higher than other own revenues only in Slovakia (21 and 19% of total revenues respectively) and more or less equal in Hungary (16 and 17% of total revenues respectively). The ratio of own revenues to GDP was only 2% in the CEE on average, and the ratio of own taxes to GDP only 0.5%. The largest share of own revenues from GDP was found in Poland (4.2%), whereas most of this (about 3%) came from non-tax

revenues. The ratio of own revenues to GDP was also remarkable in Hungary and in the Czech Republic (approx. 3.5%), but in other countries it was considerably lower. Revenues from own taxes were more than one percent of GDP only in Hungary (1.8%) and Poland (1.3%). In Estonia, the ratio of own revenues to GDP was only 1.2%, and the ratio of own taxes to GDP was as low as 0.5%. The OECD (Fiscal... 2002) concluded that the main difference between the CEE and the “old” members of the EU is the very low revenue (and especially tax) autonomy of the CEE countries.

According to the OECD (Fiscal... 2002), the largest revenue share in the municipalities of CEE countries came in 1999 from shared taxes and from taxes where both the tax base and tax rate were set by the central government. From these sources local governments got half of their total revenues on average (3.6% of GDP); in Lithuania even up to 91% of total revenues (6.6% of GDP). Such taxes also provided over 60% of total revenues in Romania (65%) and Estonia (62%). The ratio of these taxes to GDP was remarkable besides Lithuania also in Latvia (6%), Estonia (4.8%) and Bulgaria (4.6%). The share of general grants from total revenues was 10% in CEE countries on average (about 1% of GDP) and the share of specific grants was 17% (1.5% of GDP), but there were vast differences between the countries.

## **5. Own revenues of Estonian municipalities and suggestions for increasing them**

On the basis of the previous analysis it can be concluded that in Estonia the own revenues of municipalities consist of land tax, local taxes, revenues from the sales of goods and services and revenues from assets. Table 1 gives an overview of the average share of local governments’ own revenues in Estonia in different years<sup>20</sup>. Revenues from assets are given without revenues from non-produced fixed assets because the majority of these comprise the fee for natural resources and the special use of water, which do not correspond to the criteria of local governments’ own revenues.

Clearly, the largest share of own revenues is created by the sales of goods and services; land tax compose only one third of these revenues. Changes in the share of land tax support the proposition that this revenue source has low elasticity against economic cycles – its yields are influenced by the assessment of land value and do not increase automatically in line with economic development, but at the same time also do not decrease during recessions. The third important revenue source for Estonian municipalities is the sale of assets, but its share of local governments’ total revenues has fluctuated to a large extent and is obviously connected to the overall state of economic activity. As this revenue source is also unsustainable, it has been excluded from the own revenues of local governments in the following analysis. From other own revenue sources the municipalities obtain less than one percent of their total income on average. On average own revenues comprise only 15% of total

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<sup>20</sup> Because of the change in the budget classification system in 2003, data from the previous years is not comparable.

revenues in Estonian municipalities, which is similar result to that presented by the OECD (Fiscal... 2002) and shows that during the last decade there have been no changes in the share of own revenues – Estonian municipalities are still nearly fully dependent on transfers from the central government.

**Table 1.** Own revenues of Estonian municipalities (Estonian average, % of local governments' total revenues)

<b>Category of own revenues</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>
Land tax	3.84	3.70	3.45	2.86	2.74	3.32
Local taxes	0.67	0.73	0.80	0.73	0.85	0.81
Sales of goods and services	8.39	10.94	10.43	9.03	8.87	9.66
Sales of material and immaterial assets	3.22	4.04	4.80	8.56	2.86	0.94
Revenues from assets, except from non-produced fixed assets	0.47	0.58	0.29	0.63	0.87	0.92
Other revenues	0.71	0.37	0.71	0.68	0.54	0.44
<b>Own revenues in total</b>	<b>17.29</b>	<b>20.36</b>	<b>20.49</b>	<b>22.49</b>	<b>16.72</b>	<b>16.09</b>
<b>Own revenues in total without sales of assets</b>	<b>14.08</b>	<b>16.32</b>	<b>15.69</b>	<b>13.93</b>	<b>13.86</b>	<b>15.15</b>

Source: Statistics Estonia, calculations of the authors.

However, there are quite remarkable differences between the shares of own revenues in Estonian municipalities. In order to compare the extent of these differences, municipalities have first been ordered according to the share of corresponding categories of own revenues from total revenues, then separated into quintiles and finally arithmetical averages of the shares of own revenues in quintiles have been calculated (see tables 2 and 3). The largest was the difference between the first and the fifth quintile in 2003 (3.5-fold). In other years, the share of own revenues from total revenues was 2.8-3 times larger in the fifth than in the first quintile on average. In recent years, the municipality with the largest share of own revenues has been Kärü parish (37-42% of total revenues), and that with the lowest share of own revenues has been Piirissaare parish (1-4% of total revenues).

If we look at different components of own revenues, the variation in shares is remarkably larger. In municipalities belonging to the fifth quintile, revenues from land tax have constituted a proportion of total revenues that is ten times larger than in municipalities belonging to the first quintile on average. For instance in 2008, 28 municipalities, including several towns, obtained less than one percent of total revenues from land tax. At the same time land tax provided about 10% of revenues in Maardu and 4.5% in Tallinn, but the largest was the share of land tax in total revenues (14%) in Vihula parish.

Local taxes are not used very actively in Estonia. In 2008, these taxes provided at least some revenues to 56 municipalities, but most of them obtained less than 0.1% of total revenues from local taxes. During the period under consideration, the proportion of local taxes in total revenues was largest in Tallinn at 1.7-2.3%. The

municipalities following Tallinn in this respect already show remarkably lower figures. According to the Ministry of Finance (Jõgi 2009), the most actively used local tax in 2008 was advertisement tax (used in 47 municipalities), followed by road and street closure tax (in 15 municipalities), parking charges (in 9 municipalities), sales tax (in 7 municipalities) and animal tax (in 2 municipalities). None of the municipalities obtained revenues from boat, motor vehicle or entertainment tax in 2008.

Differences in the share of revenues from the sales of goods and services in total revenues have been quite stable between the municipalities belonging to the fifth and first quintile – 4.5-fold on average (only in 2003 was the difference six-fold). The largest was the proportion of revenues from the sales of goods and services in Kärü parish in 2008 (about 30% of total revenues), and the lowest in Kohtla parish (only 1.1%).

Revenues from assets constitute only about 1% of total revenues in the highest quintile on average, whereas in the first quintile the average is practically 0%, as municipalities belonging to that quintile do not get any revenues from assets or the revenues are extremely small. The largest was the share of revenues from assets in 2008 in Rae parish (5% of total revenues), followed by Kihelkonna parish (below 3% of total revenues). If the revenues from non-produced fixed assets (i.e. primarily fees for the use of natural resources and the special use of water) are taken into account as well, then the revenues from assets in 2008 constitute more than 11% of total revenues in the fifth quintile on average and the difference to the first quintile is 81-fold. In Illuka, Mäetaguse, Vaivara and Maidla parishes, revenues from assets even constitute 47-73% of total revenues in that case. This vividly reflects the uneven distribution of revenues connected with natural resources, which makes that revenue source unsuitable for the local level.

**Table 2.** Own revenues in Estonian municipalities in the lowest and highest quintiles (% of total revenues)

Category of own revenues	2003		2004		2005		2006		2007	
	I q	V q	I q	V q	I q	V q	I q	V q	I q	V q
Land tax	1.2	13.7	1.2	12.9	1.1	11.9	1.1	10.4	0.9	9.3
Local taxes	0.0	0.2	0.0	0.2	0.0	0.2	0.0	0.2	0.0	0.2
Sales of goods and services	1.9	11.4	3.5	15.9	3.5	15.9	3.2	15.0	3.1	14.1
Revenues from assets, except from non-produced fixed assets	0.0	0.6	0.0	0.5	0.0	1.0	0.0	0.5	0.0	0.9
Other revenues	0.0	1.1	0.0	0.9	0.0	1.3	0.0	1.6	0.0	0.8
<b>Own revenues in total</b>	<b>6.1</b>	<b>21.6</b>	<b>8.5</b>	<b>23.9</b>	<b>8.0</b>	<b>23.7</b>	<b>7.3</b>	<b>22.1</b>	<b>7.0</b>	<b>20.1</b>
Sales of material and immaterial assets	0.0	4.6	0.0	6.2	0.0	5.6	0.0	7.8	0.0	4.8

Source: Statistics Estonia, calculations of the authors.

**Table 3.** Own revenues in Estonian municipalities in 2008 by quintiles (% of total revenues)

Category of own revenues	Estonian average	I q	II q	III q	IV q	V q
Land tax	<b>3.3</b>	0.9	2.4	3.4	4.8	8.3
Local taxes	<b>0.8</b>	0.0	0.0	0.0	0.0	0.2
Sales of goods and services	<b>9.7</b>	3.3	5.2	6.8	9.1	14.9
Revenues from assets, except from non-produced fixed assets	<b>0.9</b>	0.0	0.1	0.4	0.5	1.2
Other revenues	<b>0.4</b>	0.0	0.1	0.1	0.2	0.7
<b>Own revenues in total</b>	<b>15.1</b>	7.2	9.6	11.4	14.2	20.3
Sales of material and immaterial assets	<b>0.9</b>	0.0	0.0	0.1	0.5	1.9

Source: Statistics Estonia, calculations of the authors.

Differences in revenues from sales of material and immaterial assets are rather large between Estonian municipalities. The average of all municipalities in the first quintile is also 0% of total revenues, because not all municipalities sell their assets each year. In the highest quintile the sales of assets has created 2-8% of total revenues on average. The largest were incomes from asset sales in 2006, but from 2008 these decreased remarkably as a result of the changes in the overall state of economic activity. In 2008, only 65 municipalities obtained more than 0.5% of total revenues from the sales of assets, whereby the largest share was 5.5% (in Kanepi parish). In previous years, Rae parish earned relatively more from asset sales than other local governments – in 2003, 15% of total revenues, but from that year on at least 30% of total revenues, including 57% in 2007. In 2008, sales of assets provided only 0.02% of total revenues in Rae parish. The decline in the size of the budget due to the decrease in sales of assets was also remarkable – total budget revenues in 2008 constituted only 57% of the revenues of 2007 in Rae parish.

On the basis of the expenditure structure of Estonian municipalities (see figure 2), it can be concluded that in addition to offering basic infrastructure services (e.g. water, sewerage, maintenance of local roads, public transportation), local governments also provide some social services, especially education. Therefore, revenues from land tax and user charges are not enough for Estonian municipalities according to Bird (1999). They should also have access to some broad based and more elastic revenue sources in order to provide services corresponding to the needs and preferences of the local population and to have incentives for promoting local economic development. In the Estonian context, the most suitable revenue source that satisfies these conditions is personal income tax. Although so far personal income tax transferred to municipal budgets has been treated as a revenue source of their own<sup>21</sup> (see for instance Trasberg 2003; Reiljan *et al.* 2006), such an approach is not

<sup>21</sup> Estonian Ministry of Finance also considers personal income tax to be an own revenue source of local governments.

justified, because local governments have no control over these tax yields – they have no authority to vary the tax rate. As the proportion of personal income tax yields going to local budgets is not fixed in the constitution, the central government can change it quite easily and unexpectedly as it did in 2009 because of the budget crisis caused by the economic recession.

So nowadays the main sources of municipal own revenues in Estonia are sales of goods and services (i.e. user charges) and to a remarkably lower extent also land tax. Revenues from sales of assets are also widely used to cover expenditures, but this is not a sustainable revenue source and the potential for exploiting it is limited. Local taxes that can be levied in Estonia are quite suitable for use at the local level according to the theory. In most cases (e.g. advertisement tax, road and street closure tax, parking charges, but also motor vehicle tax), they are in accordance with the principle of benefit taxation. However, several of the local taxes (advertisement tax, parking charges, road and street closure tax, but also sales and entertainment taxes) can be implemented only in towns or in other quite densely populated and well-developed areas. In addition, the revenue potential of local taxes is quite low and does not usually outweigh the low political popularity caused by levying these taxes and the administrative costs associated with their collection. The incentive for local governments to fully exploit all the own revenue sources available is also reduced by the ease of access to the grants provided by the central government (Bird 2003). These factors explain the modest application of local taxes in Estonia.

The strong dependence of municipalities on central government transfers creates a gearing effect. Therefore, even a small increase in municipal spending results in a much larger increase in the level of own revenues (Bailey 1999). For instance, in the case of Estonia, even a municipality in the fifth quintile, where the average share of own revenues from total revenues has been around 20% in recent years, should raise its own revenues by 5% on average in order to increase its spending by 1%. And it is much harder for local governments (in most cases even impossible) to fund expenditure increases by increasing the utilisation of local taxes or the land tax rate. This issue has become especially topical during the economic recession because the central government has decreased revenues for municipalities unilaterally (e.g. the decision to lower the share of personal income tax yields transferred to municipal budgets). At the same time, municipalities have an obligation to secure the delivery of public services, despite of the fact that they have very few opportunities for compensating the loss of central government transfers by raising their own revenues.

As many local governments in Estonia are small, merging them has been seen as a solution to many problems at the local level. But merging municipalities would not help increase their own revenues in Estonia, because the correlation between the share of own revenues and the number of inhabitants in the municipality is very low (e.g. in 2008 the correlation coefficient was 0.099). Only the utilisation of local taxes is clearly connected with the number of local inhabitants (in 2008 the correlation coefficient was 0.807).

The easiest way to increase own revenues in municipalities in Estonia is to replace the current system of income tax sharing with a system of local surcharges to the central personal income tax. In order to achieve that, McLure and Martinez-Vazquez (2000) suggest first to convert tax sharing to a uniform-rate local surcharge on the national tax and then to give local governments the authority to decide surcharge rates. This would imply a fundamental change in the financing of Estonian municipalities, as they would get control over a much larger part of their revenues than they have now. During the years 2003-2008, revenues from personal income tax constituted 42-50% of total municipal revenues on average. Own revenues together with income tax yields made up even 56-65% of total revenues (Statistics Estonia... 2010). If the municipalities were allowed to get the same amount of revenues from setting surcharges as they get now from tax sharing, the revenue autonomy of Estonian municipalities would increase to a level comparable with that of Denmark. At the same time, such a reform would not bring any changes to the revenue distribution between central and local governments, as the share of the central government in income tax revenues would remain the same. In order to force municipalities to use the revenue potential of income tax fully, and at the same time to prevent them from exploiting local residents too heavily (this may be possible if tax competition is limited due to the low mobility of the population), it may be necessary to set lower and upper limits to local surcharges (as it is in the case of land tax).

Of course a system of local surcharges on top of the central personal income tax will not solve all the problems connected with financing local governments. The revenue differences between municipalities would still be large. For instance, in 2008 income tax made up 58.5% of total revenues for municipalities in the fifth quintile on average, while the figure was only 26% in the first quintile. However, the difference between the highest and lowest quintiles has become smaller during the years under consideration – it was threefold in 2003, but only 2.2-fold in 2008 (Statistics Estonia... 2010). So even if a system of local surcharges added to the central personal income tax was used, there would still be the need for a horizontal equalisation system in order to guarantee the minimum level of standard services in all regions<sup>22</sup>. Also, in the literature, the view that own revenues in local governments should be sufficient to guarantee revenue autonomy in the wealthiest regions dominates (see for instance Bird 2003). The need for equalisation grants then depends on the extent of regional revenue differences in the country. Local shares in central taxes also lead to large disparities between richer and poorer municipalities, but they do not have the positive feature of the system of surcharges, namely the authority of local governments to determine the level and quality of public services by varying the tax rate.

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<sup>22</sup> Due to space limitations of the current article the necessary reforms of the current equalisation system are not studied here.

## Summary

In order to effectively fulfil the tasks set them by law, local governments must have adequate revenues. The authority local governments have in determining the level and structure of their expenditures is highly dependent on the nature of their revenue sources. In order to guarantee the accountability of local governments and the provision of services in accordance with local preferences and needs, any increase in local spending has to result in a corresponding increase in the local tax burden. Revenue autonomy and accountability of local governments are best guaranteed via own revenues, among which there are local taxes, user charges and revenues from local property.

Shared taxes cannot be considered part of local government own resources, because municipalities have no control over the tax base, tax rates or the distribution of tax revenues between central and local levels, and so they are not able to alter the level of services offered. But if municipalities had the right to set local surcharges to central taxes (so-called “*piggybacking*”), these could be considered their own revenues, because in that case municipalities can determine the volume of tax revenues collected and so alter the total amount of public services offered.

According to the theory there are only a few taxes that are suitable for the local level, and the tax base for them is usually quite narrow. One of the most suitable local taxes is a local property tax. But revenues from property tax and from user charges are rarely large enough to cover the expenditure need in municipalities. Therefore, it may be necessary to give local governments access to some broadly based taxes. In terms of administrative and tax export avoidance considerations, the best option would be to let local governments set a fixed rate surcharge on top of the central personal income tax.

Estonia can be considered fairly decentralized in the EU context. In addition to offering basic infrastructure services (e.g. water, sewerage, maintenance of local roads, public transportation), local governments in Estonia also provide some important social services, especially education. Therefore, revenues from land tax and user charges are not enough to finance Estonian municipalities. They should also have access to some broad based and more elastic revenue sources in order to provide services corresponding to the needs and preferences of the local population and to have incentives for promoting local economic development.

Own revenues in Estonian municipalities are composed of land tax, local taxes, revenues from sales of goods and services and revenues from assets (except revenues from non-produced fixed assets, because the majority of these are composed of the fee on natural resources and the special use of water, which do not correspond to the criteria of local government own revenues). If the revenues from the sales of assets are also excluded from the own revenues because of large fluctuations, the strong connection to the overall state of economic activity and their unsustainable nature, then own revenues constitute only 15% of total revenues in



Estonian municipalities on average. The share of local government own revenues is remarkably lower in Estonia than in CEE countries on average.

Several authors have considered the part of personal income tax revenues transferred to municipal budgets in Estonia as part of local own revenues. Such an approach is not justified, as municipalities have no control over that revenue source. Hence, Estonian municipalities are almost fully dependent on central government transfers in the form of shared taxes or grants.

The easiest way to increase municipal own revenues in Estonia is to replace the current system of income tax sharing with a system of local surcharges added to the central personal income tax. Own revenues would then form the majority of total revenues in Estonian municipalities, and revenue autonomy in Estonian local governments would increase to a level comparable with that of Denmark.

Even with the system of surcharges there would be the need for a horizontal equalisation system in order to guarantee the minimum level of standard services in all regions because revenue differentials between municipalities would still be large due to regionally uneven economic development. However, local shares in central taxes also lead to large disparities between richer and poorer municipalities, but they do not have the positive feature of the system of surcharges, namely providing local governments with the authority to determine the level and quality of public services by changing the tax rate.

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# THE DEMAND-SIDE INNOVATION POLICIES IN THE CONTEXT OF SMALL EU MEMBER COUNTRY<sup>1</sup>

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## Abstract

Demand-side innovation policies, in the form of regulations, public procurement, subsidies for private demand, and other measures, are often viewed as valuable additions to more traditional supply-side policies. The demand-side innovation policies should enable to facilitate the emergence of vital and sustainable links between innovation outputs and various markets. However, without sufficient institutional framework and policy experiences such measures could also contribute to new market distortions or crowding-out effects, which do not facilitate sustainable growth in innovations. The charting of possible risks of such policies should help to outline the criteria for aiming at sustainable effects. The purpose of this contribution is to offer suggestions about preconditions and policy characteristics, which should help to avoid the misuse of demand-side measures and facilitate the sustainability of desired changes in society. It is predominantly conceptual contribution but draws also extensively on case evidence about the effects of relevant policies and their discontinuation.

**Keywords:** demand-side innovation policy, small country context, EU

**JEL Classification:** O38, O31, O33

## Introduction

Traditionally innovation policies tend to focus on the supply-side measures. These include for example financial support in terms of public venture capital, corporate tax reductions, research funding, support for training, and other measures. In addition governments offer several information and brokerage as well as networking services also by fostering regional and national innovation systems.

Although, these policy measures are very important in terms of increasing the innovative potential of organisations embedded into an innovation system, the diffusion of innovations along with the desired growth in productivity is more facilitated by demand-side innovation policies. Still, it is important to stress that demand-side policies should not be viewed as substitute for supply-side measures.

Thus, the demand-side innovation policies are to be viewed as valuable complementary additions to more traditional supply-side policies. Demand-side

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measures can be taken in the form of regulations, public procurement, subsidies for private demand, and other measures. The principal idea and goal behind such policies is either the creation of lead markets for innovation or at least facilitation of their emergence. Therefore, the demand-side innovation policies should enable to facilitate the emergence of vital and sustainable links between innovative solutions and their potential markets.

However, without sufficient institutional framework and policy experiences such measures could also contribute to new market distortions or crowding-out effects. Then these policies might fail to facilitate sustainable growth in innovations or productivity levels. In a worse case, this can result in creating only temporal interest in certain innovation activities that fades away as soon as the policy measure is discontinued. In other words, the policies facilitate artificial demand, which does not develop towards self-sustaining private market for innovative solutions. The public policy might even damage the evolutionary process of private interest by providing disincentives for private venture capitalism.

This is not to say that demand-side innovation policies should not exist. The critical perspective is needed in order to chart the possible risks and cons of such policies. This should help to outline the criteria for aiming at sustainable effects, which would indeed increase the level of innovativeness in society.

The purpose of this contribution is to offer suggestions about preconditions and policy characteristics, which should help to avoid the misuse of demand-side measures and facilitate the sustainability of desired changes in society. The catalytic effect of such innovation policies vs. short-leaved and perhaps wrongly placed boost depends on various aspects, which should be taken into account in a coordinated manner.

The structure of this analysis is following. The discussion starts with an introduction of theoretical concepts and earlier studies that discuss or at least incorporate demand-side innovation policies. In the section to follow we outline some specific features of small country in EU. Thereafter, we discuss the usage and problems of demand-side innovation policies in Estonia in greater detail and develop set of suggestions. The concluding section outlines the main results, limitations, and ideas for future researched.

### **The theoretical background, EU policy and practices of other countries**

Innovation policy focuses on those elements of science, technology and industrial policy that ‘explicitly aim at promoting the development, spread and efficient use of new products, services and processes in markets or inside private and public organisations’ (Lundvall, Borrás 1999: 37). This widely-used definition of innovation policy is also somewhat restrictive. It tends to exclude more implicit policies that might explicitly target some other areas, but induce innovative solutions as positive side-effect. The diffusion of new solutions serves also higher purpose of economic and societal development, which is left out from this targeted definition.

The development of innovation policy is closely related with the evolution of innovation theory and models (see also Mytelka, Smith 2001). Edquist and Hommen (1999) review these logical connections in greater detail. The earlier linear innovation models saw technology push from supply-side as the main catalyst of innovations. More contemporary systemic views support the idea of close interaction between various system members as the driving force behind innovative growth. The mentioned authors outline the role of demand or producer-user interaction in several well-known concepts related to innovation system approach. The demand-side is incorporated into chain-linked model, distributed process model (see also von Hippel 1988 below), interactive learning theory, network analysis, and development block theory (for more detailed discussion see Edquist, Hommen 1999).

This list of theoretical concepts is by no means exhaustive. The elements of demand are either explicitly or implicitly discussed in the context of several other views. One might argue that even earlier more linear approaches, like the S-curve diffusion model introduced by Rogers (see Rogers 2003) do not totally disregard the demand-side. The idea of producer-user interaction is reflected by the vital role of lead users.

Von Hippel (1988) went even further by outlining that the functional sources of innovation may differ depending on situation. He showed on the basis of various tests how some innovations are user-driven, while others are initiated even by the suppliers of producers. Thus, it is not just technology-push or demand-pull, but the initiative might be sparked in any point of the supply chain. This work about distributed process model discussed also shifts in sources of innovation and implied that in this light innovation policy needs to find new tools to appropriately handle such context of various sources (von Hippel 1988). It could be said that this understanding paved the way for the emergence of even more interactive and systemic views later on.

The differentiation between supply-side policy and demand-side policy is by no means unique to innovation context. For example, Lindbeck and Snower (1990) discuss the mix of supply-side and demand-side policies to increase employment; Kandil (2009) analysis the role of demand-side stabilization policies; and Minford (1999) offers support for stringent monetary control and supply-side macroeconomic policy. These random examples highlight the fact that supply-side and demand-side policy division has been one of the major elements in macroeconomics. However, in innovation policy context contemporary views do not favour substitutability between the two, as perhaps neoclassical and Keynesian views in general macroeconomics do, but see them as complements.

Edler and Georghiou (2007) show that at least public procurement as one form of demand-side innovation policy is not novel idea. Already in 1970s and 1980s several studies discussed public procurement has a policy measure that can impact innovations. Along with the elements of systemic view, this offers further evidence that the elements of demand-side innovation policy have been discussed for decades. Still, the contemporary views on subject do add considerable value by taking more

interconnected and interactive standpoint. Thus, each policy measure should be viewed in a broader context, which tries to account for the holistic impact of the entire innovation policy. It means that demand-side innovation policies are viewed both – separately with their own narrower focus as well as elements within the wider policy context. The public procurement as demand-side policy measure is being viewed as separable field of focus even now. Rolfstam (2009), for example, discusses the role of institutions in using public procurement as policy measure.

Edler (2005) defined demand-side innovation policy as ‘set of public measures to induce innovations and/or speed up diffusion of innovations through increasing the demand for innovations and/or defining new functional requirements for products and services’ (Edler 2005: 3). These measures are often linked to sectoral policy aims like sustainability, energy efficiency, infrastructure, or health care system (*Ibid.*). Later this definition has been somewhat refined. In Edler (2009) demand-side innovation policies are ‘a set of public measures to increase the demand for innovations, to improve the conditions for the uptake of innovations and/or to improve the articulation of demand in order to spur innovations and the diffusion of innovations’ (Edler 2009: 5). The new wording is in some respect more general and yet more precise by introducing the aspects like *the conditions for the uptake* and *improved articulation of demand*. Thus, the refined definition emphasises framework building and demand clarification as central functions of demand-side innovation policy.

The rationale to use demand-side innovation policies is based on (see Edler 2009):

1. Innovation policy needs to help overcome market and/or system failures;
2. Societal goals and policy needs determined for example by elected politicians;
3. Industrial/economic policy that calls for modernisation via innovations;
4. Industrial/economic policy to incentivise forefront innovation production with local, national or regional companies and to create lead market potential.

This list shows that demand-side policies serve more purposes than just helping to overcome deficiencies of private market for innovative solutions or systemic problems in initiation or diffusion of innovations. However, some of these aspects like for example societal goals and policy needs, involve considerable risks. Because of their subjective nature, there is also potential for emergence of biased solutions and corruption.

These dangers suggest that such goal-setting should be very transparent and based on well-founded principles and procedures. The experiences from other national innovation systems might also give some guidance. Yet, the replication without adaptation is not the path one should consider. Each local, national or regional context has some important differences related to path-dependencies and other factors. Although these might seem minute at first glance, they might still render replicated measures inappropriate and useless. Therefore, the solid foundation in terms of transparent and well-founded decision mechanisms should gain priority over policy learning which tries to replicate best practices. It is not to say that policy learning should not be part of decision mechanism as perhaps one of the stages.

Innovation policy as part of the wider industrial and/or economic policy can contribute to the increase in productivity by encouraging companies to modernise their production systems. New innovative processes based on leading-edge technologies render companies and as a result the economy more effective. However, the industrial policy that favours innovative solutions should analyse beforehand the capability of domestic companies to participate in such process. If the local innovative potential is low, (perhaps due to insufficient supply-side measures) then the demand-side policies might contribute more to the import than to the development of national business setting. Such knowledge transfers from abroad along with possible spillovers are important, but ultimately the national policies should still create conditions for domestic innovations as well. (see also Edler, Georghiau 2007; Edler 2009)

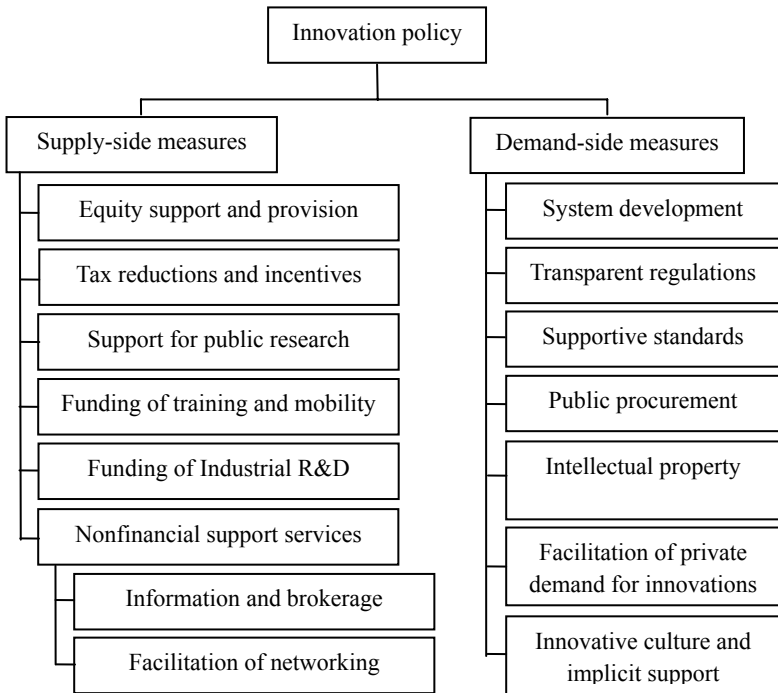
In recent years the demand-side innovation policies have seen renewed attention also at the EU level. During Finnish presidency in 2006 the expert group led by Mr. Esko Aho released a report which outlined the need for fostering the demand-side initiatives, especially the creation of lead markets, by (Aho *et al.* 2006):

- creating a harmonised regulatory environment across the EU that would favour innovations and predict the future needs early on;
- the use of standards-setting powers to require high technical performance levels and a reorganisation of the processes so that agreements on new standards are reached quickly and efficiently;
- the use of public procurement to facilitate the demand for innovative goods, while at the same time improving the level of EU's public services;
- building a globally competitive intellectual property rights regime that requires the Community Patent to be achieved and, in the short term, finalisation of the draft European Patent Litigation Agreement;
- a cultural shift which celebrates innovation, using the media and other means to encourage citizens to embrace innovative goods and services in order to develop Europe as natural home for innovators.

In short, this EU report highlighted five key issues: harmonised regulations, standards, public procurement, intellectual property rights, and innovative culture. The regulatory setting includes in this view also the early articulation of innovation demand. Although in essence somewhat declarative, this report, along with other documentation from same era (see Moran *et al.* 2007; Zuleeg *et al.* 2007), is a clear step toward EU-wide recognition of a need for improved balance between supply-side and demand-side innovation policy measures. Shift to demand-side is needed.

Figure 1 offers a summarising overview of various supply-side and demand-side policy measures. Although it captures perhaps the main elements of policies on these two sides, it has to be reminded that as far as national innovation systems differ so should be different appropriate innovation policy measures. Even if in most cases these variations are likely to concern the balance between various policy measures, some situations call for specific policy tools not reflected in current division.





**Figure 1.** The division of innovation policy measures. (Based on Aho *et al.* 2006; Edler, Georghiou 2007 with author’s changes and amendments)

One reason for paying increasing attention on demand-side innovation policies relates to the phenomenon that has been called ‘Swedish paradox’. Sweden is one EU country, which excels in terms of financial contribution into innovation inputs. Yet, the outcome in terms of innovativeness among companies is not as good as in some other countries, where the contributions into research and development are far smaller. Thus, the monitoring and governance of the links between innovation inputs and outputs is very important in order to avoid the situation where large contributions fail to produce efficiency in outcomes. (see also Ejermeo, Kander 2006)

Appelquist *et al.* (2009) outline as well that demand for innovation-based solutions needs to be stimulated by appropriate lead market policies. The focus should be on introduction of demand-side policy measures, such as novel ways of using public procurement and support for user-driven innovation projects. The innovation policy should have speed and synchronisation. This means quick reaction to emerging problems and reduced complexity of the policy portfolio, while widening the scope. Unlike Sweden, the neighbouring Finland has been much more proactive in understanding the need to develop demand-side innovation policies. It could be said that Finland and UK are the leaders of demand view among EU members (Edler,

Georghiou 2007). There are several recent reports (Evaluation... 2009; Government's... 2009) that clearly incorporate demand- and user-driven innovations into Finnish national innovation strategy. These reports suggest, however, that public promotion of these aspects should be based predominantly on indirect support measures in order to remain impartial to the initial source, type, and application domain of innovation. The authors even urge to readjust the system in case there are violations of such impartiality (see Evaluation... 2009).

The reports suggest also application of broad-based innovation policies, which should pay more attention to service innovations, organisational innovations (the policy analysis of these innovations can be found in Ramstad (2009)), and demand side. However, they outline as well that such broad-based concept has several risks related to possibility of mismanagement. Reporters argue that the rationality of public intervention must be considered using three conditions (Evaluation... 2009, p. 34):

1. Private organizations are unable or unwilling (because of high risks or the inability to benefit from the innovation) to achieve, or be unsuccessful in achieving, the policy objectives, in the simplest form the most efficient allocation of resources. Hence, a problem exists.
2. The reasons for the problem can be analyzed and understood.
3. The government (national, regional, local) and its public agencies can solve or mitigate the problem, that is, a government failure does not exist.

Only under these conditions the public intervention is sufficiently justified. Here also, the streamlining or reducing overlaps in service provisions by various public organisations is outlined as an important issue.

The focal elements of Finnish innovation strategy can be summarised as follows (Peltonen 2009; Lehto 2009; Government's... 2009):

- Building a *competence base* using four guiding principles
  - World without borders
    - Mobility and attractiveness
    - Participation and contribution
  - Demand and user orientation
    - Lead markets
    - Co-innovation
  - Systemic approach
    - Broad-based innovation
    - Leadership and change management
  - Innovative individuals and communities
    - Individuals and entrepreneurship
    - Innovation communities and hubs

Although with some possible overlaps, these choices and key areas provide clear understanding of the need for further fine-tuning in an already advanced system. Nikulainen and Tahvanainen (2009) introduce in their study special bodies for demand-side facilitation of innovations in Finland - Strategic Centres for Science,

Technology and Innovation. In each such centre companies, universities, research institutes, and other partners will reach agreement about joint strategic research agenda, which is basically a vision of the projected needs of companies regarding the development of technology and innovations five to ten years into the future. Thereafter the agenda is jointly organised into several long - term research programs and subsequent into individual projects.

The third Nordic country Norway does not set so much stress on demand-side innovations as perhaps Finland. Still, the supportive role of public procurement is explicitly acknowledged as well as the need to facilitate creative culture (An Innovative... 2009). More attention is given to increased focus on SME-s and to the growing role of interactive learning in innovation policy setting (Isaksen, Remoe 2001). Thus, the innovation policy of Norway does include demand-side measures, but not as prominently as similar policy in Finland. This can be explained by differences in social context and industrial profile of these countries.

Cutler (2008) offers his views on Australian innovation system, which is besides US one of the countries outside Europe taking strong interest in demand-side policy measures. He starts from the logic that innovation has three facets to be balanced: creativity, entrepreneurship/commercialisation, and diffusion/adaptation. It is this third facet that spreads high potential innovations across industry or the community, thus capturing national benefits. Following this theoretical path, the suggestions to improve Australian innovation system include building a culture of innovation, accelerating the take-up of new technologies, using public procurement, developing industry-academy pathways, and increasing efficiency by reducing duplication (Cutler 2008).

The analysis of US Innovation Policy by Rycroft and Kash (1999) does not explicitly incorporate the entire demand-side innovation policy. However, they do point out enhancing markets for complex technologies as one of the focal policy aims. The innovation policies in US and Europe are to some extent compared by Smits *et al.* (2008). Although this study focuses on technology assessment the user- and demand-orientation is contextually highlighted via the notion of strategic intelligence for improved innovation policy. 'Strategic intelligence deals with the questions who needs what kind of information in order to let actors maximise their innovation efforts and how can this information be produced?' (Smits *et al.* 2008: 11). The process dimension of this intelligence involves articulation of demand, mobilising creativity, facilitating activities, user involvement, and other elements characteristic to demand-side innovation policies. In more general terms, the innovation policy in US is demand-oriented especially because of numerous and well-functioning regional producer-user clusters and networks. The federal nature of the country somewhat prescribes the regional differences in policy making.

The innovation policy studies about Ireland and Greece (Collins, Pontikakis 2006), France (Chabbal 2000), China (OECD 2007), or Asian countries in general (Chaminade, Vang 2007) do mention demand-side aspects only very briefly. This can be to some extent interpreted as evidence about the demand-side innovation

policy as being more characteristic to advanced innovation systems (where supply-side capabilities already exist) and subsequent innovation policies. Indeed, the innovation policy studies about Central and Eastern European economies like Poland (Jasinski 2003), Hungary (Inzelt 2008; Havas 2002), Slovenia (Bucar, Stare 2002), Czech Republic (Müller 2002), or more generally about the entire region (Radosevic 2002) either do not explicitly mention demand-side innovation policy measures at all or conclude that the policy measures oriented on diffusion of new technologies and innovation have been non-adequate (see Jasinski 2003). Similar study about even less developed transition economy of Armenia (UNESCO 2009) confirms the dominance of supply-side focus. The evolutionary nature of innovation policy is discussed in greater detail in Nill and Kemp (2009). They focus, however, more on the dynamics in general than on changing role of demand-side in particular.

The demand-side innovation policies are gaining importance especially in interconnection with environmental policies and so called eco-innovations. Van Humbeek et al. (2004) discuss the linking of innovation policy with environmental policy in Flanders Belgium. They discuss Innovation Platform for Environmental Technologies as an important new governance tool that explicitly incorporates demand driven policies, like public procurement, regulations favouring innovation, and new financial instruments. These measures together with supply-side policies and coordinating actions (steering and action plan) are simultaneously interrelated with innovation policy, environmental policy, and energy policy. In such regional level the platform is directly or indirectly influenced also by other policies as well as EU- wide and national level policies. The regional innovation strategies, to integrate regional, industrial, and innovation policy, are in more general terms discussed by Michie and Oughton (2001).

One of the key issues in stimulating eco-innovations is expansion of demand-side policies and especially catalytic procurement, where public measures boost the emergence of private demand (Key Policy Issues... 2009). In order to facilitate the commercialisation and diffusion of eco-innovations governments should support the formation of potential customer groups for an innovation to indicate future market demand and not act as buyer (Ibid). This catalytic role would help to reduce the risk that public demand suppresses private interest. Negro *et al.* (2008) investigate somewhat similarly how to use the innovation policy in stimulating renewable energy technologies. Discussion of alternative policy mechanisms for stimulating the 'green' technological innovation is offered also by Norberg-Bohm (1999). Among these mechanisms the demand-side aspects feature already prominently.

Van den Ende and Dolfsma (2002) show on example of computing industry how the general assumption that new technological paradigms emerge only from advances in science and developments in technological knowledge, while demand simply influences the selection among rivaling paradigms or the course of paradigm, can be misconception. They demonstrate that in the development of computing technology a distinction can be made between periods when demand and/or knowledge development was the main enabler of innovation. New technological paradigms or sub-paradigms emerged even in these demand-pull periods. This study offers yet

another important argument for usage of demand-side innovation policies. However, it also indicates that the importance of demand facilitation may be dynamic over time and across sectors. Thus, such policies should be subject for periodic revisions and readjustments.

Kuhlmann (2001) defined three possible scenarios for future governance of innovation policy in Europe (Kuhlmann 2001: 967):

1. Increasingly transnational and centralised and European innovation policy arena, where EU-level dominates. This scenario assumes weakened national authorities and partially strengthened regional autonomy.
2. Progressive decentralisation and open competition between repositioned national or regional innovation systems and related policies.
3. From EU-level centrally mediated mixture of competition and co-operation between diverse national or regional innovation cultures. In other words, multi-level governance based on a problem-based redistribution across levels.

Due to the strong interconnections with EU-level standards, procurement guidelines, and industrial policy regulations, we can expect that demand-side policy measures are to some extent governed union-wide. Yet, as we stressed before, the national innovation potential can be effectively facilitated only by using agile systems and good responsiveness to contextual changes. Thus, in terms of demand-side innovation policy, third scenario is more realistic option than the first overly centralised policy development scenario.

The discussion of theoretical underpinnings and practical experiences of demand-side innovation policies showed interrelations with innovation system developments on regional, national, and supranational level. The demand-side policies are important complements to the more traditional supply-side measures. The latter tend to dominate in less advanced innovation systems and policy settings. However, in EU one of the major innovation policy challenges is to achieve the shift towards better balance between supply-side and demand-side measures. It is challenging tasks also because of the various risks and problems related to public procurement, demand articulation, regulatory environment, and standards that would facilitate demand for innovation. In the following short section we describe the specific features of small EU member country in using demand-side innovation policies.

### **The features of demand-side innovation policies in small EU country**

A small country or economy is usually defined by its economic size, whereas the population and the gross domestic product (GDP) are commonly used key indicators (Forsyth 1990). The differences in the size of population are proxies for differences in market sizes, different scales of indigenous industries, different scopes of specialization as well as for differences in aggregate levels of savings and investments (Forsyth 1990).

According to Forsyth (1990) there is growing consensus among international organizations and development bodies and also development economists and

planners that a population of 5 million is a limit below which the economy and institutions tend to be severely constrained and some national institutions, infrastructural arrangements, and services may become uneconomic.

The general level of GDP is also a reasonable indicator for evaluating the size of economy. However, in most situations it would be reasonable to adjust this figure in order to account for the differences in purchasing power. GDP *per capita* is a useful tool for differentiating between economies on various development levels. This is important addition to the population data because certain disadvantages of smallness can be overcome by the high development level of the economy. Countries such as Kuwait and Singapore are small in terms of population, but belong into the group of high-income economies (as indicated by GDP *per capita*). This allows them to take advantage of benefits coming with smallness like certain flexibilities, while offering them better opportunities to build support frameworks for innovations and for economic development in general.

Due to the partially ongoing economic transition process in some European regions and neighbouring regions, there is also considerable research gap concerning the specific nature and problems of small-scale systems that experience rapid adjustment processes. Baltic countries (including Estonia) and some other new EU member states that joined in 2004 are in certain respects even now influenced by the path-dependent institutional and infrastructural problems rooted in socialist development era.

However, the comparison with the experiences of national innovation systems especially in Singapore and Ireland lets to draw some important propositions about the specific nature of small-scale innovation systems (based loosely on Wong and Singh 2008; O'Malley *et al.* 2008):

1. The small-scale national innovation systems are relatively more dependent from the inflow of foreign direct investments, because local levels of investment capital are insufficient.
2. The rapid development of small economies and their subsequent innovation systems is at least initially based predominantly on inward transfers of knowledge and technologies.
3. The small-scale national innovation systems require well-developed policy schemes and integrated efforts in order to enhance the development of domestic R&D activities, innovations, and entrepreneurship.
4. The international cooperation and foreign openness along with enhanced cross-boarder network ties beyond FDI and knowledge inflows are essential substitutes for restricted capabilities of domestic support.
5. The success of small-scale national innovation systems is inherently more dependent on using limited resources and capabilities for well-defined and focused scope of innovation activities than that of larger systems.
6. The small-scale national innovation systems should build predominantly on human and social capital in order to cope with inherent financial constraints.
7. The small-scale national innovation systems offer flexible policy adjustment opportunities.

These notions about small-scale innovation systems give some insights into the specific features of innovation policy in a small country context. The agile and flexible nature of small systems allows adjusting innovation policy measures to the changes in innovation context much faster than in large-scale systems. During fast economic growth the need for public support was in many fields somewhat smaller than in times of economic downfall. At the time economic difficulties increase the incentives for innovative activities. In a small country public sector has better opportunities to re-adjust the policies quickly. Some of these re-adjustments, however, might be also determined by the smallness.

Unlike large countries small countries tend to have less policy options available in terms of fiscal leverage and debt-based financing schemes. This somewhat prescribes the knowledge-based or intelligence-based solutions rather financially expansive development schemes.

Small countries are often very open to the foreign trade and investments, because domestic resources are too restricted to allow balanced societal development. This openness helps to attract important additional financial and knowledge contributions from abroad. Thus, the innovative capability in a small country setting is inherently related to the absorptive and complementary capabilities of various organisations. The restricted domestic market potential offers one more argument in favour of extensive international cooperation.

In the light of demand-side innovation policy, these positive (flexibility) and negative (restricted resources and capabilities) features of small country setting suggest that even demand facilitation cannot have solely domestic focus. Perhaps, instead of trying to achieve technological supremacy in selected target fields, the more appropriate demand-side policy mix would support both domestic and foreign agents. This would mean enhancing the market opportunities and system capabilities in close interaction with regional (in case of Estonia with Nordic), EU-level, or global partners. The added value for partners could be derived from flexibility, transparency, and agility of these policy schemes, while complementarities would exist not only between supply-side and demand-side measures, but across borders.

Thus, demand-side innovation policies in small EU country should incorporate not only the facilitation of domestic innovation activities, but inward-outward FDI and their linkages, EU funding schemes, participation in joint research and development, and other international dimensions. Despite such multilevel focus, the dominant idea behind the demand-side policy measures should still relate to fostering domestic innovation and absorptive capabilities. Therefore, articulation of demand for innovative solutions should follow broader international context, but local companies should be able to benefit as well by making key contributions into the solution provision. In the next section we investigate one example of small EU economy. This country is not only small, but has recently gone through transition to market economy.

## **The demand-side considerations of innovation policy in Estonia**

According to Reid (2009) the adoption of the first Knowledge-Based Estonia strategy for 2002-2006 and the first round of EU Structural Fund support 2004-2006 led in Estonia to the initiatives of increasing the existing small funds for supporting enterprises seeking to develop new products or services. The general innovation awareness and university-industry cooperation were also fostered. This strategy focused also on developing R&D infrastructure in universities (centres of excellence program). Thus, by 2004 Estonia was seen from EU level as the leading innovation policy developer in the Baltic region and among new CEE Member States in general. However, later on the momentum has been somewhat lost, because as Reid (2009) indicates second Knowledge-Based Estonia strategy for 2007-2013 predominantly describes the continuation of activities established in earlier strategy. Although some new initiatives, like Development Fund, have emerged as well other countries have considerably closed the policy development gap by introducing their own innovation strategies and policy measures. The initial leader position was to some extent related with wide-range of learning experiences gained from policy development co-operation with Finland.

The main innovation policy activities in Estonia are based on economic development plans, application plans of Knowledge-based Estonia strategy 2007-2013, and on plans developed by Estonian Ministry of Economic Affairs and Communications. The Ministry has outlined four main activity groups (Estonian Ministry of Economic... 2010):

I Technological upgrading of enterprises, the increase in their development capability and productivity growth

- R&D support measures for product development in SME-s that includes support for pilot studies and applied research projects
- Innovation vouchers for SME-s via Enterprise Estonia to support R&D projects in cooperation with labs or universities
- National Science and development programs (for example energy technology program, biotechnology program and others)
- Cluster development program to facilitate cluster cooperation for the provision of internationally competitive solutions
- Mobility program to hire foreign development personnel

II The inflow of new innovative business ideas and their growth into enterprises

- Entrepreneurship studies in universities and Development Fund
- Innovation support structures (science and technology parks) and half-industrial and test labs

III Knowledge and technology transfer

- Spino+ program to facilitate commercial use of academic research
- Technology Development Centres program that promotes joint usage of competences in research institutions and enterprises

IV The development of innovative environment, creative industries, design and service innovation

- Innovation awareness



- Design and service innovation – focuses on development of designing competences and knowledge intensive services

Most of these activities reflect predominant focus on supply-side of innovations. Some programs, however, incorporate at least partial or implicit demand-side considerations as well. For example, innovation vouchers function to some extent also as enablers of projects, which might be otherwise disregarded. Science and development programs for energy technologies and biotechnologies facilitate also demand for innovative solutions in these sectors. Innovation awareness measures and screening studies initiated by Development Fund lay at least the path for increase in future demand. Still, the holistic picture of innovation policy mix is at present dominated by supply-side initiatives.

One of the main executive bodies in the support provision process is Enterprise Estonia. Enterprise Estonia (EAS) was established in 2000. Its general purpose is to promote business and regional development in Estonia. Subordinated to the Ministry of Economic Affairs and Communications, Enterprise Estonia is by now among the largest institutions within the national support system for entrepreneurship, providing financial assistance, advisory, cooperation opportunities and training for entrepreneurs, research establishments, public and third sector. With the accession of Estonia into EU, Enterprise Estonia became the implementing unit of the EU Structural Fund in Estonia. This increased considerably the funding opportunities. At present, majority of the programs and grants offered by Enterprise Estonia are co-financed from the EU structural funds. (EAS 2010)

Today Enterprise Estonia operates in the following support areas (EAS 2010):

- Increased sustainability and accelerated growth of start-up companies;
- Improved export and product development capability of Estonian companies;
- Greater impact of foreign direct investments on the Estonian economy;
- Increased tourism export and the development of domestic tourism;
- Promotion of regional development and civil society.

In terms of support to innovation, Enterprise Estonia is responsible for the governance of several policy activities outlined above, including product development grants, technology development centres program, job creation for development personnel, innovation vouchers program, and test labs program. Finished programs include facilitation of science and technology parks and innovation awareness projects. The training and consultation services relate even at the present also to the innovation awareness, while other key areas include provision of space technology components by Estonian companies in association with European Space Agency, energy technology program, and biotechnology program. Many of these support measures like product development program, technology development centres program, and half-industrial or test labs program engage not only enterprises but research institutions as well. The Spinno+ program is the follow-up policy measure to support the diffusion of academic research results into business practice via spin-off enterprises and other transfers. In addition Enterprise

Estonia publishes variety of periodicals that focus on entrepreneurship and innovation. (EAS 2010)

Because Enterprise Estonia has such a prominent role in providing support measures, it could be said that to some extent the efficiency of Estonian innovation policy is dependent on the organisational efficiency of Enterprise Estonia. This includes the competence level of the personnel, transparency and clarity of evaluation procedures concerning project applications, and quality of coordination between different divisions. Recent study of foreign owned enterprises included also questions about Enterprise Estonia. Respondents saw it as highly bureaucratic yet innovative and developing, consumer friendly, solution seeking and cooperative. The answers revealed certain need for greater flexibility in project evaluation in order to account better for project-specific features. At the same time majority of respondents agreed that some level of bureaucracy is inevitable due to the regulations set for the distribution of EU funds. (Foreign Investor 2009)

The second important branch in Estonian innovation policy is governed by the Estonian Ministry of Education and Research. Here the main focus is on funding and other project predominantly aimed at the development of research, teaching and training capabilities and opportunities. The main bodies subordinated to this ministry that govern research funding are the Research Competency Council and the Estonian Science Foundation. More diversified research and educational programs are governed by Archimedes Foundation, while Innove Foundation promotes lifelong learning. There are also other more specialised foundations like Tiger Leap Foundation and Estonian Information Technology Foundation aimed at facilitation of IT development in Estonia. Some units focus also on youth work or on popularisation of science. (Estonian Ministry of Education... 2010)

The Estonian Ministry of Education and Research with its foundations has very important role in research funding and infrastructure development. Yet, this branch in Estonian innovation system is even more supply-side dominated than the activities of Enterprise Estonia. Perhaps popularisation of science and to some extent youth work can be interpreted as implicit measures of demand-side innovation policy. However, Tiger Leap program and the subsequent foundation are clearly demand-side measures.

“The Tiger Leap program is a national specific program launched by the Estonian Government with an aim to increase Estonian school education quality utilizing modern information and communication technology. Focus of the (follow-up program) Learning Tiger development plan 2006-2009 is mainly on e-learning and various e-learning related content services development. Main objective of this development plan is to increase curriculum quality and effectiveness utilizing information and communication technology and introducing e-learning as a part of daily curriculum.” (Tiigrihype 2010)

The Estonian Research and Development and Innovation Strategy “Knowledge-Based Estonia 2007-2013” does outline in section concerning policy-making aimed

at the long-term development of Estonia the stimulation of demand for new technologies primarily through public procurement (Estonian Research... 2007). In policy practice, however, the explicit demand-side innovation policy measures are still at the infant development stage.

There are, however, some notable cases of innovation procurement initiatives. Best known is perhaps multifunctional personal identification card that serves as substitute for passport, but also as an electronic tool for participating in e-elections, logging into the e-bank or into other ID-based web services, and buying e-ticket for municipal transport. One of the newest procurement and development cases is the introduction of compulsory taxonomical webpage financial statement submission system for enterprises that should reduce the cost of data interchange and database formation in various statistical purposes. Other examples include changes in regulatory environment and subsidies to boost the usage of local energy resources, like wooden pellets instead of imported gas and oil. Also other eco-innovations, like the collection of used packages, wind energy production, and changes in waste collection have been supported by public procurement and regulatory initiatives. Some of these examples are directly reflecting the impact of EU-level policies on local standards. Thus, they are novel in the context of Estonian market, but not so much internationally. Table 1 reflects innovation support according to CIS2006.

**Table 1.** The innovation support from public sector to enterprises in Estonia 2004-2006 (percentages of respondents)

Did your enterprise receive financial support for innovations in 2004-2006?					
From local government	From government (inc. public foundations)		From European Union		
0.7	9.4		3.7		
			How important was the support?		
The form of supported activity:			High	Average	Low
Intra-corporate or purchased R&D			20.5	19.7	3.9
Purchase of other knowledge for innovation			3.9	15.7	3.1
Innovation-related training activities			9.4	24.4	4.7
Market introduction of the innovation			9.4	13.4	5.5
Innovation cooperation			7.9	12.6	4.7
What result did the financial support for innovations in 2004-2006 have?					
1.Faster innovation process		51.2	2. Reduced cost of innovation		55.9
3.Increased innovation quality		48.8	4.Reduced risks of innovation		40.2
5.Other impact on innovation		33.9			

Source: Community Innovation Survey 2006: 2004-2006, 2008.

Table 1 reveals that only small number of respondents (total number was for Estonia 1068) had received financial support for innovations in 2004-2006, whereas government and its foundations were the dominant source for such support. About 40 enterprises or 3.7 percent received support directly from EU, while the role of local governments was almost non-existent. The support was most important for R&D activities. In terms of market introduction in total 22.8 percent of enterprises

who had received support found it either highly or averagely important. This shows that demand-side aspect had some merit, but was not paramount. The importance of public support for innovation cooperation proved to even lower. The impact of financial support reduced costs and increased the speed of innovation processes, while the increase in innovation quality or reduction of risks was slightly less common. Yet, 40.2 percent of support recipients noted reduction of risks as the result of financial support. This aspect can be seen as implicit or indirect contributor to the improved demand conditions.

The topic of innovations was also included into the recent study of foreign owned enterprises in Estonia that was made during fall 2009 by the University of Tartu. When asked about the obstacles to innovations, the respondents saw low profitability on innovation projects and unstable or lacking demand for new products and services as quite important obstacles (the respective average Likert scores 2.77 and 2.54 in 5-point scale, where 5 denoted very important obstacle). Thus, the demand-side deficiencies are relevant for foreign owned enterprises. In interviews the managers argued also that some innovation support measures could have wider focus than just SME-s, because larger producers might be more likely to achieve the relevant innovation capabilities. (Foreign Investor 2009)

In order to monitor and develop the Estonian innovation policy schemes the Ministry of Economic Affairs and Communications has initiated several evaluations and studies. The evaluation of Technopolis published in 2005 reveals that in Knowledge-Based Estonia strategy for 2002-2006 the identified key areas are not always accompanied by particular policy mechanisms. The innovation policy practice has been too focused on limited number of high-tech sectors and attention to low-tech sectors, which is stated in strategy, has been minor. The evaluators suggest as well that attention has been predominantly on development of infrastructure, while the human capital and development personnel deserve more direct policy attention. They suggest that for the period 2007-2013 infrastructural investments should require more active participation of enterprises as users in order to ensure more demand-driven approach. (Evaluation of the design... 2005)

More contemporary evaluation from 2007 suggests that more attention should be devoted on demand-side because the planned increase of R&D expenditures as percentage of GDP might be dangerous in a situation where demand for innovations is relatively low, as it is the case in Estonia. In this document, the opposition from the academic sector against more demand-oriented innovation policy developments is seen as potential threat. The low demand by enterprises and small financial rewards for cooperative activities characterise also science-industry linkages. Both, the absorptive capacity and demand for new technologies are in Estonia limited by the level of development and the industrial structure of the country. GDP per capita in Estonia is remains significantly lower than in the EU-25. The economy is dominated by SME-s from low- to medium-tech sectors, business expenditure on R&D is very low and economic growth is primarily driven by exports from traditional economical sectors. The evaluators outlined also occasional coordination problems and proposed voucher system. (Evaluation of Estonian... 2007)

The visibility analysis of support measures for investments into technology suggests that such support should be oriented first of all to enterprises and entrepreneurs who aim to increase productivity and export quality or intend to extend markets and to enter into new target markets. The analysis points out that the investment program alone is not enough to achieve such goals, but extensive coordination with other policy measures is required as well as the involvement of decision makers with sector-specific competences (Ettevõtete... 2008)

The weakness of industrial demand and participation in the competence centres is evident also from mid-term evaluation of the competence centre (elsewhere described as technology development centres) program. For example, in the field of nanotechnology scientific expertise is there, but industrial linkages are weakly developed. This is further evidence about the dominance of supply-side, while market development lags behind. (Mid-Term Evaluation... 2008)

Somewhat indirectly the reduction of costs for employing R&D personnel is seen as one catalyst for increase in demand for R&D. Indirectly therefore, that in many respects this could be seen as supply-side policy measures. Recent study suggests numerous tax incentives (including reduced personal income taxes for R&D employees) as one potential policy measure. (An Analysis... 2010)

This broad discussion of Estonian innovation policy and demand-side aspects in particular helps as make following suggestions:

- Even supply-side innovation policy measures should be provided first of all to users and sectors who can facilitate demand for innovations by seeking and creating new market opportunities;
- The interlinks between supply-side and demand-side can be reinforced by measures oriented to human capital and research personnel (employment subsidies and tax incentives);
- The human capital policy for scientific institutions should target the employment of commercialisation experts, because that seems to be the weakest link;
- The low profitability of innovation projects or in other words low return on innovations suggests needs for targeted public procurement initiatives, which can be later transformed into catalytic initiatives;
- Public procurement as an important demand-side innovation policy measure should be integrated with other innovation policy measures in order to avoid danger that separated governance leads to detrimental side-effects;
- The smallness of Estonian market prescribes the need to facilitate the regional or EU-wide demand for (Estonian) innovations by more extensive and broad-based engagement into intra- and inter-regional industrial cooperation (public support for such cluster and demand development);
- Demand-side innovation policies (procurement, regulations, standards, intellectual property developments, awareness projects etc.) should not be adopted as a shift towards demand, but as considerate additions to the supply-side measures by taking into account the capacity development;

- The use of regulatory and standard setting power should be more essential part of the innovation policy mix, but it has to be based on industry studies, roundtable results, and regional clustering consideration rather than on political preferences;
- The transparency and flexibility balance of innovation policies could be achieved through establishment of industry-specific applications evaluation commissions;
- Sectoral innovation policies should devote more attention on user-driven positioning of the applied research efforts and investments to incubate science-industry links based on market impulses;
- More attention is needed on low- and medium-tech sectors, because these sectors are larger and potentially more capable for supporting private demand for innovations, than high-tech fields with non-existent local market;
- The policies for high-tech sectors should develop from predominantly supply-side measures, like infrastructure development, into market-seeking policies;
- The usage of EU structural funds should be important, but at the same time in accordance with the development of demand-side capabilities in order to make the usage both extensive and efficient.

The development of Estonian innovation policy is currently in a state, where the continuation on the path of supply-side development, while increasing the public and private financial contributions, might bring structural imbalances and overinvestment tendencies. The demand-side policies are needed in order to draw more attention on market development and commercialisation. The innovations and patents do not gain value without the appreciation of users. The last decade has revealed considerable progress in supply-side policy development. Now it is time to complement these measures with demand-side innovation policies. However, this has to be done cautiously, in order to avoid replacing private markets with publicly regulated ones just when private competition emerges.

## **Conclusions and implications**

The changes in innovation policy are closely related to the development of innovation theory and models. Contemporary systemic views support the idea of close interaction between various system members as the driving force behind innovative growth. Thus, the innovation systems involve capabilities enabling innovation on the supply-side and markets for innovations on the demand-side. These two sides are interlinked by producer-user interactions, which are influenced by various innovation policy measures. The differentiation between supply-side and demand-side is not unique for innovation policy, but used generally in economic policy and theory.

Some demand-side innovation policies like public procurement of innovative solutions are not novel, because they have been discussed in a literature for decades. The modern views of demand-side policies add value by taking more holistic and interconnected perspective. The demand-side innovation policies help to overcome market and system failures, achieve societal goals, modernise economy, and to

establish lead market potential. These policies are context specific and should be adapted based on experiences rather than replicated.

The renewed interest in demand-side innovation policies on EU-level was sparked during Finnish presidency around 2006, when so called Aho report outlined steps for facilitating the demand for innovations. Various demand-side policies are also needed in order to avoid situations like 'Swedish paradox' where innovation inputs are not matched by the expected level of marketable output.

From Nordic countries the demand-side policies are most explicitly incorporated into innovation strategy and policy in Finland, where demand and user orientation forms one of the key elements. Other leading policy developers are for example Australia and US. In other countries the demand-side policies are far less common or implicit. In most Central and Eastern European countries the innovation policy development is still at the stage of supply-side domination. The demand-side innovation policies are gaining importance especially in interconnection with environmental policies and so called eco-innovations, but other industries can have demand-led development periods as well. The theoretical concepts and practical experiences of demand-side innovation policies reveal interrelations of innovation system developments on regional, national, and supranational level.

The demand-side innovation policies in small EU country should incorporate also inward-outward FDI and their linkages, EU funding schemes, participation in joint research and development, and other international dimensions. However, the dominant idea behind the demand-side measures should still relate to the facilitating domestic innovation and absorptive capabilities. Articulation of demand for innovations should commence in international context, while allowing local companies to benefit from making key contributions into the innovative solutions. The small country policy systems are flexible, but restricted by limited resources.

After the accession to EU, the innovation strategy and policy making in Estonia has somewhat lost its momentum, because the follow-up strategy for 2007-2013 does not provide many novel policy ideas, but represents mostly continuation of earlier initiatives. The innovation policy implementation in Estonia takes place via two main branches – Estonian Ministry of Economic Affairs and Communications with its foundations like Enterprise Estonia and Estonian Ministry of Education and Research (also with various foundations).

Even Estonian supply-side innovation policies should account more with demand-side considerations, while human capital development measures can bridge the two sides. These policies should help to hire R&D personnel in enterprises and commercialisation experts to scientific institutions. Public procurement initiatives could help to increase returns on innovations, but have to be integrated with other policy initiatives. The policy should not shift from supply-side measures to demand-side measures, but add the latter to holistic policy mix. Regulatory and standard-setting power should be used more extensively but with consideration of expert opinions, while developing transparent and flexible decision making procedures.

Better balance between low-tech and high-tech support is needed, while science-industry links are to be developed from user-driven or industrial perspective.

The results of this policy paper are limited by the lack of focused survey on the demand-side innovation policies. The available evaluative reports and other sources might not capture the entire complexity of the demand-side needs. The reports and survey results provide preliminary generalizations, but the true interaction and impact of demand-side measures are often embedded in the context of particular sectors, regions, and policy goals.

The theoretical implications from this discussion are related to a need to refine innovation system theory towards more dynamic approach that would reflect the changes in supply-side capability development and demand-side market building roles over time and within various contexts.

Managers can benefit from this study by starting to pay more attention to the demand-side factors of innovations and by understanding the innovation policy development logic from the viewpoint of their particular business area. The involvement of managers into the public discussion about the demand-side innovation policy measures is very important to achieve public-private synergies.

The future research could focus on providing more detailed analysis of the risks and obstacles of implementing demand-side innovation policy measures. Another research venue relates to the efficiency of demand-side innovation support measures in small open economies. The changes in the roles of various support organisations induced by introduction of several demand-side innovation policies deserve also more research attention.

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# THE USE OF TAX PLANNING SCHEMES BASED ON THE DIFFERENTIAL TAXATION OF LABOR INCOME AND CAPITAL IN ESTONIA

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## Abstract

The current paper covers one of the tax optimization schemes popular in Estonia – full or partial replacement of labor income with dividends. Such scheme is used by some owner-managers as the regulation concerning emoluments of members of management body is very flexible. The main incentive to use the scheme is to reduce tax burden as dividends are only subject to income tax but emoluments to the members of management body are also taxed with the social tax. Basic results show that considered schemes are widespread. We estimate that due to replacement of salaries and wages with dividends there was a significant loss in social tax revenues in Estonia during 2005-2008. In majority of the sectors average dividends of owner-managers in 2008 were higher than their average salaries. Also, the average amount of owner-managers' emoluments in majority of the sectors was below the national monthly average salary, in some cases it was even below subsistence level.

**Keywords:** tax planning, income taxation, personal finance

**JEL Classification:** D14, H2, J3

## Introduction

Benjamin Franklin (1706-1790) once said: “... *in this world nothing is certain but death and taxes*”. While the first part of this statement is still 100 percent correct, last isn't. A financially aware taxpayer can sometimes choose when, to whom and how much to pay taxes. While some of the actions taken by natural and legal persons to change their tax burden are clearly illegal (e.g. under-the-table pays) – these are classified as tax evasion – others are not. According to different verdicts of European Court taxpayers can take into account several factors (including taxes) when making their decisions and they are not obliged to choose actions/behavior that results the highest possible level of taxes (Tallinna Ringkonnakohtu...3-08-364). Instead, it is quite natural to assume that most taxpayers try to maximize their after-tax income and as long as their actions correspond with the law, everything is fine. Unfortunately, it is almost impossible to write laws that cover every shade of human behavior and that's why numerous so-called grey areas still exist. Sometimes tax optimization schemes may be well in accordance with the formality of law, but not with the meaning of law.

The aim of the current paper is to investigate the use of one of such schemes – namely full or partial replacement of wages or salaries<sup>1</sup> with dividends. It is easy to understand why such schemes emerged in Estonia. Remuneration for work is the subject to income tax, social tax and unemployment insurance payments. Dividends, on the other hand, are only subject to income tax. The problem spans beyond the borders of financial economics being topical in business ethics and corporate social responsibility.

The paper is structured as follows. The first section presents a short theoretical overview of different types of tax planning activities as well as lists main principles that should be followed during such activities. Second section describes the rules according to which income from capital and labor are taxed in Estonia and presents effective direct tax rates on dividends and labor income. The third section analyzes how widespread full or partial replacement of wages and salaries with dividends in Estonia is.

### **Main types and principles of effective tax planning**

The cornerstone of modern financial theory is the value maximization principle. The value of an investment is determined by the size, timing and risk level of expected future cash flows generated by that investment (Brigham *et al.* 1999). The risk level of expected cash flows is reflected in the discount rate and the timing is taken into the account in discounting process. As most investors care about after-tax cash flows, taxes affect almost every financial decision both on corporate<sup>2</sup> as well as personal<sup>3</sup> level.

A government uses tax system to achieve variety of social goals and therefore sometimes tax rates vary across different economic activities, across different types of taxpayers and over time. These differential tax rates, in turn, provide strong incentives for taxpayers to engage in tax planning (Scholes and Wolfson 1992). The existence of different tax regimes in different countries expands possibilities for tax planning even further.

The goal of the effective tax planning is not tax minimization but maximization of after-tax return for an investor. According to Scholes *et al.* (2005) effective tax planning requires the planner to consider the tax implications of a proposed transaction for all of the parties to the transaction (1); to consider not only explicit taxes but also implicit taxes (taxes that are paid indirectly in the form of lower before-tax rates of return on tax-favored investments) (2); and to recognize that

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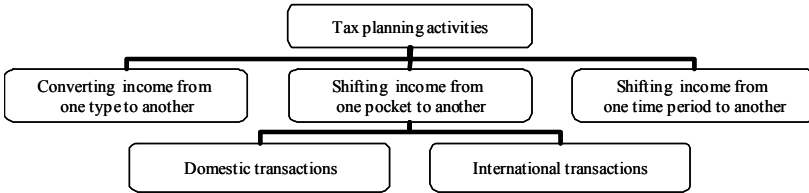
<sup>1</sup> Albeit there is a very important difference between terms 'salary' and 'wage' in English-speaking countries in the present paper we use these terms interchangeably. Those who are not familiar with nuances may get a detailed explanation e.g. on the website of the Australian Taxation Office (<http://www.ato.gov.au/individuals/content.asp?doc=/content/20083.htm>)

<sup>2</sup> An excellent review of literature on the topic can be found in Graham (2003).

<sup>3</sup> Several dynamic tax avoidance strategies have been proposed by Miller and Scholes (1978), Stiglitz (1983), Chaplinsky and Seyhun (1990), Scholes et al (2005).

taxes represent only one among many business costs, and all costs must be considered in the planning process (3).

We can distinguish between three types of tax planning activities (see figure 1).



**Figure 1.** Types of Tax Planning. (Adopted from Scholes *et al.* 2005)

When investor expects tax rates to decrease or remain constant over time, one desirable goal is to postpone the moment of taxation as further in the future as possible. Even when tax rates are expected to rise a little, one could benefit from delaying the recognition of income due to the concept of time value of money. However, if one expects a sharp increase in tax rates, acceleration of the recognition of income becomes rewarding.

Another method to reduce income tax bill is to ensure that an additional income will be attributed to a family member (in case of individuals) or subsidiary (in case of corporations) with the lowest marginal tax rates. Such behavior is especially profitable in countries with progressive income tax system and also in case of multinationals. We distinguish between two subtypes of such schemes: those that are purely under the jurisdiction of one tax authority (domestic transactions) and those that have an international scope (international transactions). Tax authorities around the world try to enforce the *Substance-Over-Form* and *Business-Purpose Doctrines* when dealing with the contracts between related parties (Scholes *et al.* 2005). They are much less concerned when contracts are written between parties with opposite interests as in those cases the use of arms-length prices is usually a rule (*Ibid*).

The third type of tax planning activities includes transactions which convert one type of income into another. In many countries “ordinary income” (like wages, dividends, interests etc) is taxed more heavily than capital gains. Sometimes the distinction has been made between “active income” and “passive income”. In the next two sections we analyze one relatively widespread scheme in Estonia that relies on differential taxation of dividends vis-à-vis compensation for work.

Many tax optimization schemes involve several types of activities listed above (Stiglitz 1985). In fact, the full or partial replacement of salaries with dividends not only consists in converting one type of income to another but also may include the postponement of taxation. For taxation of corporate profits, Estonia uses so-called distributed profit taxation system under which the moment of taxation is shifted from the period of earning the profit to the period of distributing it. The owner-

manager can therefore freely choose when to distribute the profits and therefore also when to pay corporate income taxes<sup>4</sup>.

The use of different tax avoidance schemes could heavily reduce the redistributing effect of tax system and tax revenue collected by the government. For example, Gordon and Slemrod (1988) estimated that in 1983 US tax system collected no net revenue from taxing capital income despite high marginal taxes on capital at the time. Lang *et al.* (1997) concluded that various legal and semi-legal tax write-off opportunities dramatically reduced the effective marginal tax rates of high-income households in Germany. Similar tendencies can also be found in other countries.

### **Taxation of labor income and capital in Estonia**

In Estonia, like in many other countries, the income from capital is taxed lower than income from labor. Income from capital can take several forms:

- 1) capital gain,
- 2) current income, which usually takes one of the following forms:
  - a) interests,
  - b) dividends and other forms of profit distribution,
  - c) rental income.

Dividends and other forms of profit distributions paid by Estonian companies are taxed by income tax (at tax rate 21% on gross dividends in year 2010) on corporate level and do not constitute a part of individual's taxable income. There are no taxes on undistributed corporate profit since the tax reform in 2000. Other forms of capital income are taxed (with few exceptions<sup>5</sup>) by income tax at individual level after they are realized or received by a natural person. No other taxes are levied on capital (with the only exception of land tax).

The remuneration of labor can also take several forms, from which most usual are:

- 1) wages and salaries,
- 2) emoluments paid to a member of a management or controlling body,
- 3) fringe benefits.

While all these payments are subject to both income tax and social tax (with rates of 21% and 33% respectively in year 2010), only wages and salaries are also subject to unemployment insurance payments (tax rate 1.4% paid by employer plus 2.8% paid by employee in year 2010). Wages and salaries as well as emoluments paid to a member of a management or controlling body constitute the income from which basic tax exemption is deductible. No such possibility exists for fringe benefits (see table 1).

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<sup>4</sup> In 2004, the Ministry of Justice made the proposal to introduce mandatory dividends in order to protect minority shareholders rights. This proposal was actively opposed by entrepreneurs and was eventually discarded (Sander 2005).

<sup>5</sup> Income tax is not charged on interest paid to a natural person by a credit institution, which is resident of European Economic Area.

**Table 1.** Different types of income and their taxation in Estonia

	Income tax (payer/payee)	Social tax	Unemployment insurance payments	Constitutes the income from which basic exemption is deductible
<b>Remuneration of labor</b>				
Wages and salaries	- / +	+	+	+
Emoluments paid to the member of a management or controlling body	- / +	+	-	+
Fringe benefits	+ / -	+	-	-
<b>Compensation for capital</b>				
Dividends and other profit distributions	+ / -	-	-	-
Capital gain	- / +	-	-	+
Interests	- / +	-	-	+
Rental income	- / +	-	-	+

Note: Table does not contain any payments to the second pillar of Estonia's pension system, as joining to funded pension system was mandatory only to younger employees.

In decision-making process one should rely on marginal tax rates. In our case several different taxes affect the formation of after-tax income, and therefore we calculated effective direct tax rate (*EDT*) as follows<sup>6</sup>:

$$(1) \quad EDT = 1 - \frac{\text{after tax personal income}}{\text{total payments made by the firm}}$$

The following table presents marginal effective direct tax rates calculated by using the formula 1. It should be mentioned that marginal effective direct tax rate depends on whether a person earns amount less than income tax-free minimum (27000 EEK or approximately 1726 EUR a year).

**Table 2.** Marginal effective direct tax rates in Estonia (in 2010)

Type of Income	Taxable income per year	
	< € 1726	≥ € 1726
Wages and salaries	27.7%	42.9%
Emoluments paid to a member of a management body	24.8%	40.6%
Fringe benefits	40.6%	40.6%
Dividends	21.0%	21.0%
Interests and rental income	0.0%	21.0%

Source: Authors' calculations on the basis of Estonian Income Tax Act.

<sup>6</sup> Another method to estimate average effective tax rate on labor is to use macro data on aggregate labor income tax revenues and aggregate labor income (see e.g. Mendoza et al. 1994).



From the table 2, it appears that the tax burden in case of income from labor is approximately two times higher than in case of dividends or other forms of capital income.

To synthesize illustratively information contained in tables 1 and 2 we can use a hypothetical numerical example (see table 3 below). Let's say, an owner decides to withdraw cash from his/her company in net amount of 5000 EUR. Being aware of possibilities provided by Estonian legislation he/she can do it using basically four alternatives: (1) withdraw money as salary/wage (i.e. labor income)<sup>7</sup>; (2) pay out fraction of cash as minimum wage (approximately 278 EUR a month or 3336 EUR a year) and rest as dividends; (3) pay 100% as emolument to a member of managing board, and (4) pay 100% as dividends (full replacement). Of course, it is possible to take out cash as a combination of different incomes – effective direct tax rate will fall within limits of (1) and (4).

Additionally, calculations presented in the table are made on two different assumptions: (A) the person has a full-time job position outside of this hypothetical company where employer pays his/her social tax and also keeps account for income tax-free income, and (B) the person has not full-time position outside of this company.

**Table 3.** Comparison of basic cash withdrawal schemes – the aspect of taxation

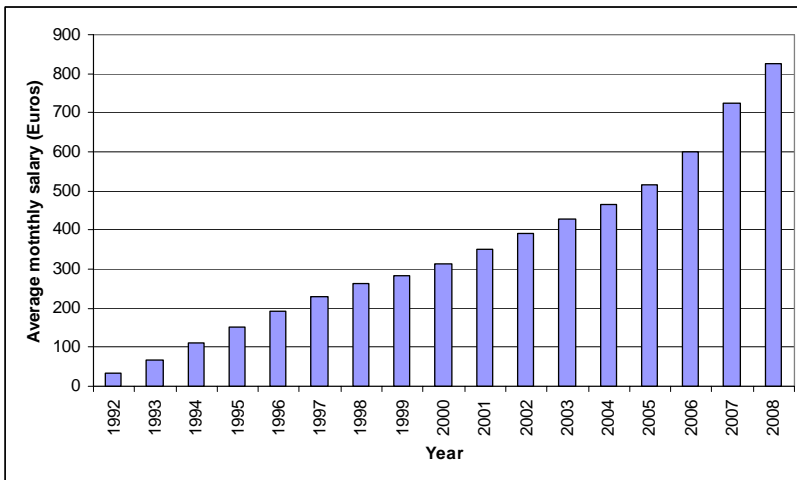
	Wage/salary		Partial replacement of wage		Emolument to a member of management		Full replacement of wage
	A	B	A	B	A	B	A=B
Net payout	5 000	5 000	5 000	5 000	5 000	5 000	5 000
Income tax	1 329	860	1 329	871	1 329	871	1 329
Social tax	2 149	1 977	1 101	1 101	2 089	1 937	0
Unemployment insurance payment	274	252	140	140	0	0	0
<b>Total payments</b>	<b>8 752</b>	<b>8 089</b>	<b>7 571</b>	<b>7 112</b>	<b>8 418</b>	<b>7 808</b>	<b>6 330</b>
Effective direct tax rate	42.9%	38.2%	34.0%	29.7%	40.6%	36.0%	21.0%

Source: Authors' calculations.

<sup>7</sup> Employees work in a company on a basis of an employment contract while members of the board operate on the basis of a contract which should be subject to regulations of authorization agreement of the Law of Obligations.

As we can see, total payments and hence, effective direct tax rate are highest in situation where cash is paid out as wage/salary vis-à-vis to other alternatives. In case the person does not have full-time job position outside his/her company effective direct tax rate is lower; however, we must consider things like health insurance and unemployment insurance benefit.

The Social Tax Act was enacted in Estonia already in 1991. Since then the average monthly salary has increased more than twenty times (see figure 2). While income tax rate has decreased from 26% to 21%, mandatory unemployment insurance was introduced in 2002. Due to a rapid increase in salaries and introduction of additional taxes on remuneration of labor, it is quite costly for companies to employ highly qualified employees. Several proposals have been made to set an upper limit for social tax and the intension of the current government is to reduce tax burden on labor (Estonian Taxes and...).



**Figure 2.** Average monthly salary in Estonia (in Euros). (Estonian Statistical Office)

It is highly questionable whether such big differences in effective tax rates are justified in the current situation. It has been argued that taxes on capital should be lower than taxes on labor income, due to the risks associated with capital investment (Lehis 2004). Most investments are indisputably risky. However, the level of risk associated with an investment into a new venture or into a listed public utility company is quite different, not to mention that some investment instruments (like government bonds or bank deposits) are almost risk-free (at least in nominal terms). Also, most firms enjoy limited liability which reduces risks taken by equity investors. The same does not apply for sole proprietors, who not only have unlimited liability but also have to pay social tax (with the upper limit of € 16 514 per year) on their net income. The risk argument is also weak due to the fact that investing into

human capital is risky too. Unemployment, serious illness, accidents, maternity leaves and changes in technology may sharply decrease the return on investment into human capital. Of course, substantial amount of these investments are actually financed by the state<sup>8</sup> and therefore taxing return is justified but due to free movement of labor within the EU it is not certain that it can be taxed by the state that actually made the investment.

The second argument for taxing remuneration for labor higher than income from capital is that capital has higher mobility than labor. Tax competition between countries has been accelerated since the late of 1980 and by the end of millennium there were 35 countries (according to the OECD tax report) which complied with the definition of tax heaven and 47 countries with harmful preferential tax regime (Tammert 2005). European Commission (1997) argued that international tax competition has caused a shifting of the tax burden away from mobile capital toward less mobile labor. Estonia, like many other CEE countries, tried to attract foreign investments by reducing direct taxes on capital. The progressive income tax system was replaced with proportional income tax system with the same tax rate (26%) for individuals and corporations in 1994. Distributed profit based corporate taxation was introduced by Estonian government in 2000. In 2005, income tax rate was reduced to 24%, with further reductions that took place during next three years (2006-2008). Since 2008 the income tax rate has been 21% in Estonia. Also, several amendments to Income Tax Law have been made to eliminate the double taxation on dividends paid to non-resident investors and bilateral tax agreements have been signed with more than 40 countries (Topeltmaksustamise vältimise...). Since 2000, Estonia does not levy any tax on capital gain from the sale of securities by non-resident investors<sup>9</sup>.

Already in 2001 foreign investors ranked the problems associated with the shortage of highly qualified labor force as one of the main obstacles for foreign direct investments (Foreign Direct... 2001). Tax issues, on the other hand, were not considered to be very important obstacles (*Ibid*). In 2009, foreign investors were still mostly pleased with taxation in Estonia; although they were somewhat concerned with high level of payroll taxes (Varblane et al 2009). The latter also hindered the hiring of highly qualified labor force by Estonian companies, especially in the field of computer software development (*Ibid*).

### **The replacement of remuneration of labor with dividends**

The payroll taxes in Estonia are high and the marginal effective direct tax rate on labor income is more than two times higher than on dividends. This would make it

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<sup>8</sup> There are some papers that propose specific methodology to estimate effective tax rates on human capital (see e.g. Collins and Davies 2003).

<sup>9</sup> An exception: gains from a transfer of a holding of at least 10% in a company of whose property, according to the balance sheet as of the last day of the preceding two financial years, more than 50% is made up of immovables or structures as movables, which are located in Estonia.

very tempting to find some ways to reduce the tax burden. While, taxpayer should never base her decisions solely on taxes, but also consider other aspects associated with tax planning schemes, those other aspects are often relatively difficult to quantify.

Paying the social tax in Estonia grants the individual the state health insurance, benefits of which are largely independent of the amount of social tax paid by an individual (only temporary disability benefit is tied to the amount of tax paid) as well as the state old-age pension (the first pillar in Estonia's pension system). The latter is also only partly depending on the salary on which social tax is calculated. The national mandatory unemployment insurance grants the taxpayer compensation in case of losing her job and this compensation depends directly on the previous salary of the taxpayer<sup>10</sup>. Most of the benefits associated with the social tax and mandatory unemployment insurance are contingent, and some are granted to a person in a distant future (like pensions), and therefore the value of those benefits is almost impossible to find. These are the reasons why some taxpayers try to evade or avoid those taxes.

In their empirical study Kriz *et al.* (2008) found that payroll and income tax evasion in Estonia is most prevalent in small firms and in the construction and agricultural sectors. Evasion is more common among individuals who work part-time, are of non-Estonian ethnicity, have relatively short education, earn a low income and are men (*Ibid*).

While the replacement of remuneration for labor with dividends also is mostly prevalent in small firms, those who are engaged in such schemes are usually relatively wealthy individuals – owners and top managers of companies.

Estonian Tax and Customs Board has monitored the use of such schemes and concluded that these schemes have become more widespread in recent years (see table 4 below).

According to the analysis carried out by Estonian Tax and Customs Board the replacement of salaries with dividends accounted for 10-20% of total losses in expected social tax revenues (Buldas 2010).

Estonian Tax and Customs Board only counted those individuals that received more than 100 000 EEK ( $\approx$  6 387 EUR) in dividends from companies which they manage as board members and whose salary and emoluments for being the member of a management body is less than expected (see table 3). Taking into the account the fact that in 2008 in Estonia there were approximately 91 000 members of management board altogether, the partial or full replacement of labor income with dividends took place in 5% of cases. Our view is that the actual use of such schemes could be even more widespread.

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<sup>10</sup> However, there is a maximum amount of unemployment insurance benefit paid to unemployed: for 2010 it is approximately 886 EUR a month (Eesti Töötukassa ...).

**Table 4.** The use of the replacement of salaries with dividends scheme and estimated losses in social tax revenues in Estonia 2005-2009

	Year			
	2005	2006	2007	2008
Expected yearly salary (Euros)	12 383	14 430	17 389	19 806
Number of executives with salary less than expected and dividend income above € 6387	1924	2592	3974	4407
Number of executives with no salary and dividend income above € 6387	106	156	211	251
Expected losses in social tax revenues due to full replacement of salaries with dividends (million Euros)	4.05	6.75	12.22	15.67

Source: Buldas 2010.

We found that among companies with single owner-manager in many sectors the ratio of average dividends to average wage/salary expenditures was above 1 (on the aggregate level in 2008 this ratio was equal to 0.96); expectedly, among this set of enterprises there were companies operating in fields of financial services (except insurance and pension funding), real estate activities, management consultancy services, entertainment activities, wholesale and retail trade and repair of motor vehicles, construction etc. Albeit there were sectors where companies did not pay out dividends at all (e.g. manufacture of machinery and equipment, water collection and transport, sewerage inter alia) these companies represent very small fraction of total number of companies.

The propensity of companies to pay higher dividends vis-à-vis salary/wage may depend on size of a company (primarily in terms of employees). Based on our data it is not possible to state unambiguously that this is a feature of smaller/larger companies in each sector but on a general level it is possible to observe higher ratio of average dividends paid out to average wage/salary expenditure among companies with lower sales revenue.

Estonian Tax and Customs Board has also indicated that total number of top executives (i.e. members of board) who has not received any salary or emoluments from their employer since 2005 was over 6000. In addition, there are almost 3000 board members who have not received any other income besides national old-age pension (Buldas 2010). In majority of the sectors monthly average salary of owner-managers in 2008 was below the level of national monthly average (825 EUR) with grand total average being on the level of 590 EUR. Another interesting finding is that approximately 20% of all owner-managers had income below subsistence level (ca 158 EUR a month in 2008) or no income at all which leads to thoughts about possible tax evasion.

Hazak (2007) confirmed that distributed profit taxation system has led companies to pay lower dividends and retain more profits. However, undistributed profits appear

to be partially retained as surplus cash, instead of being reinvested into long-term assets in companies' core businesses (*Ibid*). Therefore we propose that some owners use their firms as a piggy bank and withdraw the money (either legally as dividends or through illegal transactions) only when they need it for consumption or other purposes. Such behavior is further strengthened by declining income tax rates<sup>11</sup>, which increase the incentive to retain profits. However to confirm such proposition, one would need the data that is not publicly available.

From the legal point, it should be mentioned that Estonian Commercial Code (§ 314) stipulates that members of management or controlling body of companies may receive compensation for their work in accordance with their actual responsibilities and the financial situation of the firm. However, the Commercial Code does not establish the minimum amount of the emoluments. While such loose regulation gives companies necessary flexibility in times when company does not actually operate or is in deep loss, it also encourages owner-managers replace their salaries with dividends even when company is profitable. As no professional manager is willing to manage a firm without proper compensation, the replacement of salaries with dividends for owner-managers can be viewed as a kind of tax evasion. Alternatively, one could interpret such situation as an incentive for people to start and manage their own businesses; however, the basic principle of tax neutrality is violated as the sole proprietors are not given the same advantage. Estonian Taxation Law (§ 84) includes articles that allow tax authorities to overlook the legal form of the transaction if the form does not correspond to the substance of the transaction. In the recent case *State versus OÜ Wasp Project* the District Court decided that, in principle, dividend payments can be reclassified as emoluments to the member of controlling body of the company and taxed accordingly; however tax authorities should first give clear guidance to the taxpayers how to determine adequate compensation for the managers (Tallinna Ringkonnakohtu...3-08-364). However, these guidelines have recommended character, the Estonian Tax and Customs Board cannot force their fulfillment. Changes in the current situation may be expected only due to amendment in corresponding legal acts.

## Conclusions

As part of their financial management natural and legal persons have to deal with tax planning activities. The purpose of tax planning activities is not minimization of tax payments but maximization of after-tax income. While tax evasive optimization schemes and practices are clearly illicit others are compatible with the law. However, still numerous so-called grey areas exist as no legal act is able to cover all the aspects of economic activities.

In our paper we investigate the use of one of such tax optimization schemes – a partial or full replacement of wages (salaries) with dividends. Such schemes became especially popular in Estonia as remuneration of work is the subject to income tax,

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<sup>11</sup> When in 2000 income tax rate in Estonia was 26%; it was lowered to 24% in 2005 and to 23% in 2006. Currently (i.e. in 2010) income tax rate in Estonia is 21%.

social tax and unemployment insurance payments; dividends, on the other hand, are subject to income tax only. The direct marginal tax rate on labor income is two times higher than in case of dividends; payee' benefits associated with payroll taxes are largely independent of the amount of taxes paid and difficult to measure.

Basic statistical research shows that the average amount of emoluments paid to owner-managers for being the member of a management body is below the national monthly average salary, in 20% of cases it was even below subsistence level (ca 158 EUR a month in 2008). The analysis conducted by Estonian Tax and Customs Board showed that ca 5% of owners-managers probably use the partial or full replacement of salaries with dividends and that the use of such schemes is spreading. While the tax authority has allowed overlooking the legal form of the transaction if the form does not correspond to the substance of the transaction, it should first give clear guidance to the taxpayers how to determine adequate compensation for the managers.

The topic discussed can be developed in various directions. One suggestion for future research is to investigate negative effects of a partial or full replacement of wages and salaries with dividends from a personal point of view; largely this means compilation of a personal life-cycle financial planning model. Also it is interesting to compare the dynamics of remuneration of owner-managers vis-à-vis managers that do not hold stake in Estonia in recent years. Likewise empirical research on previously mentioned issue of using companies as piggy banks by their owners can yield interesting results.

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# PROBLEMS AND OPPORTUNITIES OF THE PUBLIC ORGANISATION OF PASSENGER TRANSPORT ON THE EXAMPLE OF BUS TRANSPORT IN ESTONIA<sup>1</sup>

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## Abstract

The purpose of the article is to show the need and opportunities for the public organisation of bus transport in Estonia. In order to achieve this goal, it is necessary to investigate Estonian and international experience in the organisation of passenger transport, its theoretical background and the resulting special measures. If we look at a specific transport service, the exclusion of the consumption thereof for a non-payer is no problem either in principle or technically. Here, public goods and market failure are not as much related to a specific transport service, but to the general availability thereof to the majority of the population. This is exactly the circumstance that the market may not necessarily guarantee. Here, the economic policy theory offers two solutions, which application in Estonian case are analysed in this article:

- 1) the cross-subsidisation of some lines at the expense of others, which, of course, presumes the prevention of the so-called price skimming with the establishment of regional monopolies and granting of special rights for them;
- 2) if cross-subsidisation cannot ensure a wide enough access to passenger transport, subsidisation must be added.

**Keywords:** Bus transport, transport policy, regulation public transport, county lines, commercial lines, market regulation, universal service, state subsidies to bus lines

**JEL Classification:** L43, L91, L98, R48, R51, H44, H76

## Introduction

The main task of a transport system and especially public transport is to provide all people and companies with access to the sites necessary for their everyday activities. In Estonia, bus transport is the main type of public transport. The purpose of the article is to show the need and opportunities for the public organisation of bus transport in Estonia. In order to achieve this goal, it is necessary to investigate Estonian and international experience in the organisation of passenger transport, its theoretical background and the resulting special measures. Other types of passenger transport (taxis, trains, planes, ferries) are only cursorily touched upon as a background.

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An efficient transport system is an important prerequisite for economic and social development, on the one hand implying roads that are in good shape and comply with international standards, safe traffic management without traffic jams, fast and efficient means of transport, consumer-friendly organisation of public transport, a safe traffic environment and much more. On the other hand, the efficient operation of the economy presumes not only the fast development of the output of the transport sector, but also the optimisation of transport expenses on every level. This presents the national transport policy with complicated complex tasks. In the Transport Development Plan (Transpordi 2009), one of the goals of the Estonian transport policy is the reduction of development differences between economically stronger and weaker regions of the state, providing the latter with fast connections and access to the capital and to international attraction centres. As a Member State of the European Union, Estonia has a chance to use the funds of the Cohesion Fund and the European Regional Development Fund for the development of transport infrastructure. In a situation in which such different goals and interests intertwine in one economic sector, it is definitely exciting and topical to study the legal and organisational arrangement of this field. Both theoretically and practically.

Here, one does not have to start at an empty spot at all. Over the past years, the legislation regulating public transport has been constantly updated in Estonia. It has been done for two reasons: first, to consolidate the directives and regulations of the European Union and second, to regulate passenger transport more accurately. The importance of the topic is added to by the fact that compared to developed countries, public transport is used relatively much in Estonia. In Estonia, the proportion of public transport in passenger turnover is about 1/3, in the European Union, it is less than a quarter.

## **1. International experience in the organisation of passenger transport**

For a long time, partial or full exceptions have been made to the transport sector in the common European competition policy, incl. at the granting of state aid. Passenger transport, especially the part that is treated as public universal service<sup>2</sup>, was out of competition for a very long time. The position was held that the granting of a monopoly status to companies providing public transport services is the only way to solve the “the problem of the use of chaotic and even destructive competition methods between companies providing public transport service“ (Eekhoff 2004: 143).

Most of the discussions in the field of public transport concern the problems occurring in urban areas. These are, for example, traffic jams, access, economic welfare and pollution. More than 75% of the people of the European Union live in towns. About 28% of greenhouse gases is produced by transport, of which 84% is made up by land transport (Better... 2010). The internalisation of negative external effects is still waiting for a solution.

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<sup>2</sup> The term “universal service” is mainly used in the field of post and telecommunications, but basically, it is the basis for public interest in public transport as well.

The lines between towns can be operated with lower expenses per bus as the average speed is higher and main roads are used. In such a case, the cost per passenger kilometre is relatively low due to greater passenger load, so the expenses are likely to be covered from ticket revenue. In the past, such lines used to compensate for the less profitable trips. The local, to us, county lines, are, however, characterised by smaller passenger load and higher expenses due to lower speed on the lower type roads. In case of these, support from local governments or the state is needed (White 2009: 164).

The mission of public transport is to ensure everyone the right to move from one place to another. It is a part of the social and regional policy of the country. The function of public transport is to make it possible for people to have a high-quality life (A Market 2005). However, it must be admitted that it is not always possible. The people of rural areas and small towns and people with limited movement capacity are, of course, entitled to the same availability of services as the people living in towns. However, in rural areas, the cost of living is higher, which is almost always caused by the factors relating to transport (price of driving to town, price of bringing goods and services to consumers).

According to Jonathan Miller, the main topics of the European transport policy are security and competition in passenger transport. Next, we will focus mainly on the latter. In his article on the openness of markets, Miller notes that in such a case, a potential entrant to a market can do it simply without the efficient resistance from other members of the market, with no extra costs and risks. A market is open when entry thereto is free: there are no significant entry or exit expenses (when exiting the market, gets their investments fully back), the existing participants compete with newcomers on the same grounds (Miller 2004: 212).

The common transport policy of the European Union is one of the bases for the operation of the common market. Thus, in the transport sector, attention is also paid to the development of fair and efficient price formation concepts, the improvement of traffic safety and the promotion of railway and short-distance maritime transport<sup>3</sup>. In the European Union Member States, between 1970-2000, the proportion of passenger cars has increased from 73.8% to 78.3%, but the proportion of public transport has dropped by 8.7% or from 24.6% to 15.9%. The relative decrease in the number of people using public transport is the result of extensive social and economic policy changes. The increasing use of cars has strengthened the political decision in favour of private vehicles, which has led to the increase in the pressure exerted on national budgets and the deficit financing of public transport (Miks... 2010).

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<sup>3</sup> In Central and Eastern Europe, most of the infrastructure investments are made into roads; however, in the EU Member States, a shift from the construction of motorways to the development of railway traffic has taken place in the past ten years. Newer cars and fuels of higher quality have not solved the problems as the increase of traffic volumes has reduced the improvement to zero.

In some countries, public transport is left for the market to regulate. The subsidies given by the European Union to the public transport of large cities amount to an average of 55% of the cost of the service. By cities, the proportion of subsidies varies greatly. For example, in Rome, it is 90%, but in Dublin, only 4% of all expenses. In the Estonian local passenger transport (bus, trolley-bus, streetcar), it is 52-56% (2009). At the same time, it must be noted that in Estonia, the subsidies do not cover the depreciation costs of the buses and the low ticket revenue caused by the socioeconomic situation does not allow to invest in the renovation of buses. This is the main reason why there are buses that are a couple of decades old driving on Estonian roads.

Public transport in Ireland, Denmark and Great Britain is exempt from value added tax and an entrepreneur gets the excise duty paid on fuels back. In Greece and Italy, the ordinary value added tax rate applies on public transport services. In Finland, Sweden, France, Austria, Germany, the Netherlands, Luxembourg, Spain and Belgium, the lowered value added tax rate is applied (Ühistranspordi... 2009). Denmark has an administrative structure, area of the state, existence of islands, etc., which are similar to Estonia, which is why the author has chosen Denmark for a closer comparison with Estonia with regard to the organisation of public transport.

In Denmark, bus transport is organised on the basis of the public transport companies in municipal ownership, who are also responsible for the organisation of public transport service. The provision of bus service has been assigned to private companies. Companies are working on the basis of the contracts signed with the companies organising public transport or directly with a municipal institution. In Denmark, the subsidies to public bus transport are given by counties or local administrations. There are generally no state subsidies. In the Copenhagen area, buses and the railway close to the city have a common tariff system.<sup>4</sup> Deficit is covered from subsidies and divided between the regional municipalities of Copenhagen according to income tax. In other parts of the country, deficit is similarly made good by the counties and local administrations that participate in the purchase of bus services (Ühtekuuluvusfondi... 2009).

In Denmark, independent companies who organise public transport also decide upon the price of tickets for retired people as they are given no state aid. In some regions, retired people can use the so-called pensioner card the price of which is 15% of the cost of full card, but is only valid outside rush hours. The rate of supports in Denmark varies by regions from 8% to 55% of the total cost of public transport. In some counties, the subsidies have been rather stable for years. Generally, the regional bus service requires less support than the local service as the passenger load of regional buses is relatively high.

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<sup>4</sup> The largest railway company in Denmark is the national DSB. Passenger transport on railway and by buses is also organised by the British company Arriva.

The official position of the International Association of Public Transport (UITP)<sup>5</sup> is that public transport needs to be adequately funded. But there are many potential funding sources. Central governments, regional governments and local governments can all participate in the funding of public transport. Every state has its specific subsidies and funds. In practice, the funding of public transport may mean the co-existence of several mechanisms (Ühistranspordi finantseerimisest 2010).

A well organised, incl. well funded public transport sector allows attracting investors. Similarly to every other type of public service, the availability of state funds depends on other competing sectors. As the resources are limited, alternative funds and innovative mechanisms must be sought, which would reconcile the risks of private investors and the need for guarantees, which proceed from the nature of public transport projects (Mezghani 2007). Just like driving a car, public transport is also for pay and the price shapes the behaviour of the people travelling and affects the choice of transport. Phil Goodwin, Professor Emeritus of London University College, is of the opinion that car transport could be decreased by 20-30% and the use of public transport increased accordingly only with the help of a political decision. (Mezghani 2010)

The funding of the public transport activity mainly comprises three components: ticket revenue, compensations received from other commercial sources, and additional subsidies. The operating costs of public transport cannot be covered with the share received from ticket revenue only as the revenue from the sale of tickets varies according to the situation. The costs of transport companies may also vary. Thus, there are great differences in the forms and needs of public funding. The state and local institutions allow the funding of public transport on economic, social and environmental considerations (The financing... 2003).

## **2. Structure and development of passenger transport in Estonia**

Before discussing the organisational issues of bus transport in Estonia, we shall study the objective development of the sector. In Estonia, bus transport is the main type of public transport. Tallinn and its immediate surroundings are the only region where streetcars, trolley-buses and electric trains are used in addition to buses.

As the equipment of public transport in Estonia is old, it impairs the quality of the service, which is why passengers prefer private vehicles instead of the worn-out and uncomfortable public service vehicles. The maintenance costs of the bus lines in towns and counties have increased by 64.9% over the past nine years. The rise in the prices of transport is caused by the higher cost of fuel and the replacement of outdated buses.

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<sup>5</sup> The International Association of Public Transport (UITP) has more than 3,100 members from more than 90 countries all over the world. Tallinn Bus Company has been a member of the organisation since 1993. (Public transport... 2010).

From 1990 to 2007, the number of people using public transport in Estonia has been constantly decreasing. If in 1990, the services of different types of public transport in Estonia were used by 432 million passengers, then in 2007, the estimated number of trips with public transport was 202.7 million. In 2007, the number of passengers dropped by 2% compared to the previous year, which means that in 2007, the services of transportation companies were used by 214.2 million passengers (Pukk 2009).

In Estonia as a whole, 2/3 of the public transport trips are made by bus, about 30% by the electric transport in the city and only 2% by train. In towns, the proportion of public transport is 30-40% of the total number of trips. Outside town borders, the number of kilometres travelled by private vehicles exceeds the public transport indicator twofold (Eesti... 2005). The small proportion of railway transport is caused by the constraint of the infrastructure. Passenger transport by types of transport in 1992-2006 is described in Table 1.

**Table 1.** Passenger transport by types of transport in 1992-2006 (million passengers)

	<b>Road transport (buses)</b>	<b>Railway transport</b>	<b>Maritime transport</b>	<b>Air transport</b>	<b>Streetcar and trolley-bus transport</b>
1992	344.7	15.8	2.1	0.2	
1993	281.6	16.7	2.6	0.2	
1994	212.8	11.6	2.8	0.2	
1995	191	8.8	3.0	0.2	
1996	187.7	6.7	3.0	0.2	
1997	193	5.6	3.3	0.3	
1998	173.7	6.7	4.0	0.3	
1999	170.4	6.8	4.7	0.3	
2000	187.8	7.3	4.8	0.3	
2001	171.7	5.5	4.5	0.4	67.2
2002	171.1	5.2	4.8	0.4	70.8
2003	162.8	5.1	4.6	0.6	71.5
2004	149.5	5.3	5.4	1	63.7
2005	139.8	5.1	5.5	1.5	57.6
2006	141.6	5.3	5.8	1.5	57.6

Source: Passenger transport by types of transport. Website of Statistics Estonia 2006 (Sõitjatevedu... 2009).

Passenger transport by bus in Estonia is divided into several branches according to the nature of transport and funding principles. According to the nature of transport, bus transport is divided into occasional services and regular services (Sõitjate... 2009). Occasional services are transport of a group of passengers formed on the

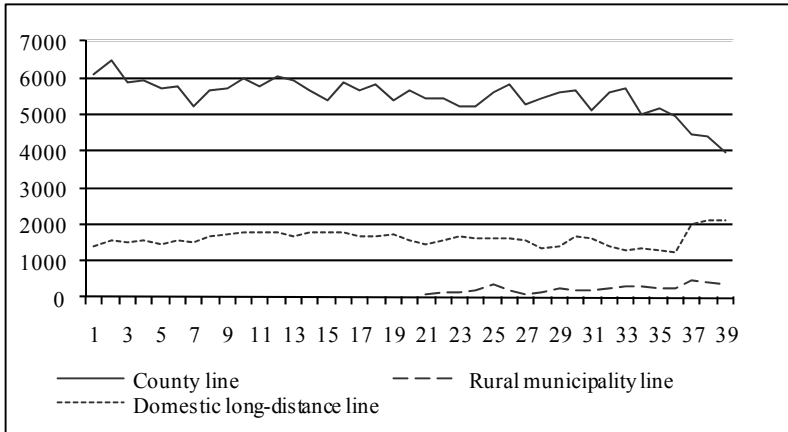
initiative of an ordering party or carrier for the sake of a common goal, which is executed as a single order or on the basis of a contract between the ordering party and the carrier. Regular services are regular passenger transport organised on a fixed route and according to a time-schedule, where passengers can enter and exit the vehicle in the stops determined in the timetable. A carrier must have a line permit for arranging regular services. Regular services are divided into rural municipality lines, urban lines, county lines, long-distance lines and international lines (Ühistranspordiseadus 2007). Local regular services means the carriage of passengers by road traffic on rural municipality, urban or county lines the route and the starting and terminal points of which are located within the administrative territory of the same rural municipality, city or county. The service is provided in the amount and on the conditions ordered by the state or local government. Public service lines are serviced according to the timetable determined by the ordering party regardless of the number of passengers (Volt 2006). Long-distance regular services means the carriage of passengers by road traffic on lines the routes of which are located in different counties. International carriage of passengers means the carriage of passengers on a route which crosses state borders.

From 2000 to 2007, the number of passengers on county lines decreased by a moderate 2.5 million or by 10%. In 2008, county lines were used by a total of 20.9 million people. Compared to 2007, the number of passengers decreased by 5% (Pukk 2010). A serious downwards trend began in the first quarter of 2008 and lasted at least until the end of 2009<sup>6</sup>.

On the long-distance bus lines, the number of passengers increased until 2002, when there were about a million or 16% more passengers than in the year 2000. In 2003, the number of passengers remained about the same as the year before, but after that, this field witnessed a new drop and by the end of 2005, the number of passengers had decreased by about 10% compared to the years 2002 and 2003. In 2008, the number of passengers on long-distance lines decreased by another 16% compared to the year before. However, the year 2009 brought along a new and noticeable rise. The passenger turnover of bus transport in 2008 was 2.4 billion passenger kilometres or 8% less than in 2007. (Pukk 2010)

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<sup>6</sup> In the third quarter of 2009, there were only 3.9 million passengers on county lines, which is as much as 23.7 per cent less than at the same time in 2008.



**Figure 1.** Number of bus travellers on domestic regular services (quarterly: 1. 1st quarter 2000, 39. 3rd quarter 2009). (Statistics Estonia)

In 2005, there were 45 carriers on county lines; a year later, 43. The number of them by counties and performance indicators (Tables 2 and 3) differed significantly. If, for example, in Ida-Viru County, in 2005-2006, there were 10 different carriers servicing the lines and 9 in Lääne-Viru County, then only one in Hiiu and Tartu counties (Maakonnaliinide ... 2007: 15). Table 2 show that state subsidy exceeded ticket revenue by 21% and made up 48.5% of the total cost of transport operations.<sup>7</sup>

**Table 2.** Total data of county lines (9 months of 2006)

Years	Unit	9 months of 2006
Distance travelled on route	Mln km	24.7
Line time	Thou. hours	818.8
State subsidy	Mln EEK	126.5
Ticket revenue	Mln EEK	104.5
Cost	Mln EEK	261.0
Number of passengers	Mln	18.9
Passenger turnover	Mln passenger km	227.8

Source: Ministry of Economic Affairs and Communications.

Table 3 shows that by attendants, the indicators of the number of passengers and average trip length vary the most<sup>8</sup>, which is the main reason for the fluctuations in ticket revenue. As the variation coefficient of the latter is still smaller than the

<sup>7</sup> In addition to state subsidy and ticket revenue, 11.5% of the funds were received from local budgets and other sources.

<sup>8</sup> According to the Ministry of Economic Affairs and Communications, the average trip length was 12 km.



previous ones, it shows that the number of passengers and the length of the trip are in negative correlation.

**Table 3.** Performance indicators of county lines in 2005-2006

	Maximum	Minimum	Average	Variation coefficient (%)
Distance travelled on route (contractual volume) (thou. km)	2638	10	541	-
Traffic speed (km/h)	43.0	11.2	28.7	29.6
State subsidy (EEK/line km)	9.18	2.52	5.43	24.3
Ticket revenue (EEK/line km)	9.30	1.35	3.90	50.3
Number of passengers (distance travelled on route per km)	1.57	0.19	0.78	62.8
Average travel distance (km)	20.07	1.93	9.20	55.1

Source: Maakonnaliinide ... 2007, calculations of authors.

One of the factors in the development of passenger transport is also the condition of infrastructure (roads and streets for bus transport). A significant fact is that local administrations own the road and street networks and repair and maintain these according to their income base. Investment decisions with regard to the local infrastructure are made on the local administration level. In rural areas, the maintenance of infrastructure is relatively costly, considering the large amount of users. The funds provided for the maintenance and development of the road network are used for preserving the current condition of the infrastructure, not for qualitative development. Sections of state roads also run on local administration territories and it is important that the country participate in the development and maintenance of these sections (Transpordi... 2009). In the period 2007-2013, the European Cohesion Fund and Regional Development Fund support the Estonian transport sector with 9.8 billion kroons. 2009. As of August 2009, decisions on satisfying the applications for domestic subsidy have already been made about 14 transport infrastructure development projects.

### 3. Theoretical bases for the organisation of passenger transport

The general basis for economic policy in market economy is the treatment of competition as an instrument for the maximisation of macroeconomic welfare. Of course, it is not always easy to ensure the operation of all competition functions. Market can be affected by various forces that hinder the efficient operation of the competition mechanism and make it impossible to achieve active competition. Such

forces are market failures that are systematically described by Jüri Sepp in the first article of the present collection.

The effects operating in bus transport are also more complex than on the so-called ordinary markets, where supply and demand for accurately defined private products meet. On the bus transport market, public interests also emerge in addition to private interests. Public goods are also produced in addition to private goods. As infrastructure is expensive and bus transport must be available for a wide public, government measures and a public law transport policy are needed (A Market 2005). Government interventions are frequent. The measures needed for the development of transport are guaranteed with laws, decisions of the Riigikogu, regulations of the government of the republic, transnational agreements for carriage by vehicles and international conventions and agreements that Estonia has joined, as well as any other legislation that has been taken into account when preparing a plan for a county.

The main task of public transport is the establishment of travelling opportunities for satisfying people's need to move, but also the decrease of the traffic burden of roads and streets. With the wealth of the society increasing, the number of cars was also increasing fast and public transport became less popular. In areas with sparse population, the cost price of public transport is inevitably high, bringing about the need to use infrequent timetables in rural areas. The solvency of people does not allow to raise ticket prices and the restrictedness of the budgetary funds of the state and local administrations has not allowed to take public transport subsidies to such a level that public service vehicles could be compared with private vehicles for their frequency, speed and comfort (Transpordi... 2009).

In order to achieve social efficiency, passenger transport cannot be left only to the power of market regulation, but must be intervened administratively. This because public transport partially means the provision of public or common goods (Villemi 1996: 15). However, this common position needs further clarification. Public goods are goods characterised by two main features: non-rivalry and non-exclusion in consumption. Because of the first feature, it is not wise to sell these separately to private persons as consumption by one person does not decrease the amount left for others to consume (Säästva 2010). The main characteristic of public goods is still the non-exclusion of the consumption thereof, which is why no market price and accordingly also a private offer is formed on the market.

But if we look at a specific transport service, the exclusion of the consumption thereof for a non-payer is no problem either in principle or technically. **Here, public goods and market failure are not as much related to a specific transport service, but to the general availability thereof to the majority of the population.** This is exactly the circumstance that the market may not necessarily guarantee. Here, the situation is similar to the universal service, which is mainly talked about in relation to postal and telecommunications services.<sup>9</sup>

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<sup>9</sup> The EU Universal Services Directive (2002) defines universal service as the provision of a defined minimum set of services to all end-users at an affordable price. The Estonian

Levy (2009) recommends the adoption of the universal service concept into public transport as well. For him, universal service is a service with fixed quality and reasonable price, which is aimed at all users of transport services regardless of their geographic location. At the implementation of universal service, the target values of services and the funding thereof must be enforced. Basically, Eurostat states the same: universal service is a legal obligation to provide basic level service in each resident country. It is mainly used at the provision of important services in regulated industrial sectors (postal, telecommunications, public transport services, etc.).

A free market that is viewed as an alternative can here lead to a significant price differentiation and the understocking of certain market segments. It is understandable that the lines that join major centres will not have a shortage of supply and the price will also be relatively low in free competition. On the other hand, the provision of transport services on borderlands presumes, due to limited demand and additional expenses, higher prices that may turn out to be too expensive for consumers and cause the fading out of the market.

Here, the economic policy theory offers two solutions:

- 1) the cross-subsidisation of some lines at the expense of others, which, of course, presumes the prevention of the so-called nitpicking and price skimming with the establishment of regional monopolies and granting of special rights for them;
- 2) if cross-subsidisation cannot ensure a wide enough access to passenger transport, subsidisation must be added.<sup>10</sup>

If usually, at the granting of special rights, the organisation of an auction for assembling monopolistic profit *ex ante* to the hands of the community together with the later use thereof for the protection of risk groups, for example, is talked about, then in case of passenger transport, underbidding is more commonly used. A competition finds out which bus company would be ready to confine itself to minimum subsidy at the servicing of the agreed route network. In both cases, competition on the market is replaced with competition for the market (Sepp 2004: 33).

A subsidy should ensure the efficient and sufficient provision of the service. Of course, the need for a subsidy depends on the relation between commercial lines and subsidised lines (proportion). The more there are commercial lines, the fewer there

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Consumer Protection Act defines in very wide terms: “universal service means a service provided in the public interest and used by the overwhelming majority of the population of the state or a certain region, such as gas, electricity, heating, water, sewerage, waste handling, communications and other similar services.”

<sup>10</sup> According to the EU Universal Services Directive (2002), to certain end-users, certain services can be presumed to be provided for the price that differs from the price corresponding to ordinary market conditions. Optimistically, it is still noted that the payment of compensation to the entrepreneurs who must provide said services in such conditions may not bring about the distortion of competition if only the specific net cost is compensated to them and the burden accompanying the net expenses is covered in a neutral manner from the viewpoint of competition.

are opportunities for cross-subsidisation in the framework of monopolistic public line sets and the more direct subsidies are needed.

In a region with smaller population concentration, the key issue is the provision of minimum movement opportunities for people by the aid of subsidies; in densely populated areas, it is important to ensure optimum capacity with the combination of different transport types, commercial lines and subsidised lines, which at the moment is unsatisfactory. Due to the incoordination of the lines operating and subsidised on commercial grounds and the inexpediency of some subsidised lines, the need to increase subsidies at the existence of a dense commercial line network has increased. The extensive opening of commercial lines can bring about a significant loss in ticket revenues on the lines serviced on the basis of a public service contract, which will bring about an increased need for subsidies.

#### **4. Organisation of bus transport on public lines in Estonia**

Public regular services are provided on the basis of a fixed-term public service contract signed between the carrier and a competent authority, which is a local or regional administration or any other public sector structural unit (for example, public transport centre). A county government of local government signs a contract with the carrier that made the best offer in the competition. Pursuant to the contract, the carrier shall be obliged to provide public service, for which a targeted subsidy is stipulated from the budget of state or local government. This part is also called a subsidy or a grant and the lines are accordingly called subsidised lines. The allocation of subsidies to public transport should generally proceed from the principle that everyone should have an equal opportunity to reach the institutions that are important in their everyday life (shops, schools, medical aid) and their work by using public transport services.

In order to assess the specific need for subsidies, it is necessary to analyse the proportion of subsidised lines in different regions according to the peculiarity of the region, and the purposefulness of the use of the subsidies. However, the lack of a common income and expenditure method does not allow to adequately assess the differences in the cost of a line kilometre by counties. The significant differences in the highest and lowest cost of a line kilometre and the reasons for this between counties (Table 4) raise the most questions. Here, we can rely on the analysis conducted by the National Audit Office (Kontrolliaruanne 2004).

According to Table 4, it can be presumed that the subsidy for a line kilometre is affected by various factors ranging from the small size of the county (Hiiu) to wealth (Harju). The former makes the fixed costs of bus transport rather expensive, whereas the latter increases the workload of the lines and the relative importance of ticket revenue. The general amount of subsidy is in turn clearly affected by the geographical size of the county.

**Table 4.** State subsidies to bus lines in counties in 2003

County	Subsidy (mln EEK)	Subsidy for line kilometre (EEK)
Harju	17	2.43
Saare	6.7	3.01
Viljandi	8.5	3.13
Lääne-Viru	7.8	3.19
Jõgeva	3.9	3.23
average	8.9	3.3
Rapla	4.1	3.32
Tartu	17.7	3.32
Järva	5.4	3.43
Ida-Viru	16.5	3.59
Pärnu	16.3	3.59
Lääne	5.3	3.61
Valga	7.5	3.91
Põlva	6.0	4.12
Võru	8.3	4.13
Hiiu	2.7	4.68

Source: National Audit Office.

The differences, although smaller, become obvious in ticket prices as well. For example, in 2008, the price of a line kilometre in Lääne-Viru County for a trip of up to 20 kilometres was 87 cents and for a trip of more than 21 kilometres, 74 cents. In Põlva County, 70 cents and 60 cents, respectively. The public transport subsidy system as a whole is mainly based on the amounts used in previous years and does not take into account the development needs, which is why it is rather inefficient. In 2007, the country spent about 140 million kroons for subsidising bus lines, to which about 50 million kroons was added by local administrations.

Organisation of public transport is more elaborate in Tallinn and in Järva County, where the transport department of the town or the public transport centre orders the transport and also collects ticket revenue. A subsidy is added to the ticket revenue and the amount received is used for paying for transport services. 2004. The public transport centre established in 2004 in Järva County as a non-profit association has succeeded in providing the people with a favourable and economically efficient public transport system. In four years of operation, significantly more favourable prices were offered to carriers without raising the ticket price. The establishment of the public transport centre has prevented the county government and local administrations from ordering parallel and logistically uncoordinated lines and using the taxpayers' money impractically for keeping overlapping lines in operation (Sarapuu: 2009). County bus transport is now mainly aimed at the most optimum satisfaction of the passengers' needs. The public transport centre systematically

investigates the movement needs of people and the demand for public transport and develops a coordinated and elaborate route network and the required infrastructure.

The Ministry of Economic Affairs and Communications of the Republic of Estonia has proposed a method for the allocation of county subsidies, the implementation of which has two stages. In the first stage, indicators are calculated for a specific period, on the basis of which subsidies are allocated. In the second stage, the dynamics component is added, where additional subsidy is associated with the indicators. (Lambing 2005). The Ministry of Economic Affairs and Communications emphasises that the indicators are not used for punishment – no money is taken away from the counties if these improve.

The new method for allocating subsidies to public transport proceeds from the principle that the passengers would have equal opportunities for reaching the institutions they need in everyday life and their work by using public transport services. Equal opportunities mean both financial availability considering the income of the people and the existence and proximity of a sufficient route network. The indicators used are: distance to bus stop, closest suitable shop, closest school, closest town or rural municipality government.

The total index consists of four components:

1. Availability of bus transport – Index<sub>PT\_availability</sub>
2. Financial availability of bus transport – Index<sub>PT\_share\_of\_expenses\_in\_income</sub>
3. Additional income component – Index<sub>gravel\_roads</sub>
4. Quality of bus transport – Index<sub>age\_of\_buses</sub>

**1. The index will improve if:**

- the geographical availability of a line network improves (for example, new lines with new stops are added)
- the satisfaction of transport need improves, for example, a larger line network (geographical aspect), a more frequent timetable (time aspect), more favourable price (financial aspect)

**2. The index will improve if:**

- the proportion of bus transport expenses in income increases slower than the Estonian average (for example, due to keeping the ticket price stable)

**3. The index will improve if:**

- infrastructure improves (quality of roads).

**4. The index will improve if:**

- the age of buses decreases.

$$\text{Total index} = \alpha_1 \times \text{Index}_{PT\_availability} + \alpha_2 \times \text{Index}_{share\_of\_PT\_in\_income} + \alpha_3 \times \text{Index}_{gravel\_roads} + \alpha_4 \times \text{Index}_{age\_of\_buses}$$

$\alpha_i$  – proportion of indices in the average; at the moment, all are equal,  $\alpha_i = 1/4$ .

It can only be hoped that the new methods will really be adopted and the allocation of state subsidies will get an objective basis. This would help significantly save on political transaction costs, which in the past few years have become too noticeable

and have led to legal proceedings with corruption charges due to the strategic behaviour of the parties involved, both entrepreneurs and county leaders.

## Summary

The transport sector is one of the most important branches of economy in Estonia. A high quality transport system is a significant part of the living and business environment that corresponds to the current needs. The existence of a proper transport system promotes local entrepreneurship, but also the increase of the competitiveness of Estonian economy in general. However, the optimisation of the relation between various types of transport, incl. at passenger transport, has not been sufficiently dealt with yet. According to the Public Transport Act, it is the task of the ministry, county government and local government to plan the lines accordingly in the republic, county or on the local administration territory.

One of the goals of the development of public transport in Estonia is to turn bus transport into an attractive and sustainable alternative for passenger cars for satisfying the need of people to move. The main problems that have arisen are the issues related to the organisation of the local and county line organisation of public transport, which arise from the fact that the private sector does not provide the universal service of public transport (general availability) as it is a public good that cannot be excluded.

Here, the economic policy theory offers two solutions:

- 1) the cross-subsidisation of some lines at the expense of others, which, of course, presumes the prevention of the so-called nitpicking and price skimming with the establishment of regional monopolies and granting of special rights for them;
- 2) if cross-subsidisation cannot ensure a wide enough access to passenger transport, subsidisation must be added.

The hindrance to the development of the public transport sector (incl. bus transport) has been the lack of resources. According to the Public Transport Act, the state does cover, at the request of the local government, the deficit of the subsidies to public regular services on a county bus line wholly or partly from the state budget if the income base of the budget of the local government is not sufficient. Unfortunately, the funds of the public sector are limited and this is why the state has not been able to sufficiently invest in the improvement of the situation of public transport.

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# ANMERKUNG ZUR ZINSPOLITIK DES EURORAUMS

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## Abstract

In modern monetary policy nearly every central bank has an output driven task to fulfil. This could be price stability or the attainment of a stable inflation rate. In order to establish whether the monetary policy has reached its goals, it is possible to use monetary rules ex post as a benchmark. For this we will use the Taylor rule and interest rate to describe the European interest rate policy from 1999 to 2009. The main result is that from 2000 till 2008 the Taylor interest rate is much higher than its benchmarks EONIA and EURIBOR. Only for the year 1999 a neutral interest rate emerges. Furthermore the paper shows that the European interest rate policy missed its Taylor interest rate benchmark every time except 1999. So it is possible to state that the European interest rate policy was too expansive.

**Keywords:** taylor rule, interest rate policy

**JEL Classification:** E58

## Einleitung

Innerhalb einer modernen Geldpolitik wird den meisten Zentralbanken eine ergebnisorientierte Aufgabe zugewiesen. Diese können bspw. die Gewährleistung von Preisniveaustabilität oder das Erreichen einer vorgehenden Inflationsrate sein. Allerdings gibt es für die Öffentlichkeit keine Gewissheit, dass die gewünschten Ergebnisse hundertprozentig realisiert werden (Europäische Zentralbank 2001). Mögliche Ursachen dafür können z. B. exogene Schocks, Wirkungsverzögerungen, Unsicherheiten über den Transmissionsprozess, oder fehlende geldpolitische Glaubwürdigkeit sein. Um zu erfassen, wie auf solche systematischen und unsystematischen Abweichungen reagiert wird, können so genannte geldpolitische Regeln oder Reaktionsfunktionen empirisch geschätzt und angewendet werden (Görgens, Ruckriegel, Seitz 2008). Eine solche Regel oder Funktion kann dabei als ein Ablaufplan verstanden werden, der versucht einer Zentralbank in unterschiedlichen Situationen einen darauf angemessenen Instrumenteneinsatz vorzuschreiben (Fendel, Frenkel 2002; Kamps, Pierdzioch 2002).<sup>1</sup> Zu den möglichen Instrumenten lassen sich alle Variablen zählen, die direkt kontrollierbar sind, wie z. B. der kurzfristige Zins und die Zentralbankgeldmenge.

In diesem Zusammenhang ist die von *John Taylor* entwickelte und nach ihm benannte Taylor Regel ein gängiges Werkzeug für die Bewertung und Beurteilung unterschiedlicher Zinspolitiken geworden (Taylor 1993; Nierhaus 2001; Sauer,

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<sup>1</sup> Ferner lassen sich die Regeln einteilen in Instrumentenregeln und zielorientierte Regeln, vgl. Svensson, L. E. O. (1997).

Sturm 2003). Besondere Aufmerksamkeit erlangt diese Regel unter anderem auch dadurch, dass sie zur Analyse und Beschreibung der US-amerikanischen wie auch der europäischen Zinspolitik angewendet werden kann (Judd, Rudebusch 1998; Deutsche Bundesbank 1999; Kamps, Pierdzioch 2002; Sauer, Sturm 2003; Belke, Klose 2009). Der Grund dafür kann in der Einfachheit dieser Regel bei der Interpretation und Anwendung zur Beschreibung des vergangenen zinspolitischen Verhaltens gesehen werden. Zu gleich kann die Taylor Regel, wenn die Zinspolitik danach betrieben wird, als Benchmark oder Erfolgsmesser für eine erfolgreiche Politik gesehen werden (Gerlach, Schnabel 2000).

Das Ziel, das mit diesem Aufsatz verfolgt wird, sind einige kurze Anmerkungen zur Zinspolitik der Europäischen Zentralbank im Zeitraum von 1999 bis 2009 mit Hilfe der Taylor Regel und dem daraus berechneten Taylor Zins, obwohl die Europäische Zentralbank betont, dass sie die Anwendung geldpolitischer Regeln, inklusive der Taylor Regel, ablehnt.<sup>2</sup> Wie zuvor erwähnt, dient die Regel dabei als Benchmark für die Beurteilung der europäischen Zinspolitik, was ebenfalls als Zielstellung ausgegeben wird.

Für das weitere Vorgehen wird sich in Kapitel 2 mit der ursprünglichen Taylor Regel und einer kritischen Beurteilung dieser beschäftigt. Im anschließenden Kapitel 3 werden die für die Anwendung der Regel benötigten Daten vorgestellt. Danach findet im Kapitel 4 die Berechnung des Taylor Zinses gemäß der dazugehörigen Regel und anschließend ein Vergleich mit der Zinspolitik der Europäischen Zentralbank statt. Eine Zusammenfassung in Kapitel 5 schließt die Ausführungen ab.

### Die ursprüngliche Taylor Regel

Im Jahr 1993 entwickelte *John Taylor* basierend auf der Arbeit von *Bryant, Hooper* und *Mann* eine geldpolitische Regel zur Steuerung der Federal Funds Rate (Taylor 1993; Schinke 2004).<sup>3</sup> Dabei handelte es sich zum einen um eine Parametrisierung der zuvor gemachten Arbeit von *Bryant, Hooper* und *Mann* (Orphanides 2003). Zum anderen war es *Taylor's* Absicht eine Regel zu entwerfen, die geeignet war die Zinspolitik der Fed nachzuzeichnen (Görgens, Ruckriegel, Seitz 2008). Die folgende Gleichung zeigt die Taylor Regel in ihrer ursprünglichen und allgemeinen Form (Kamps, Pierdzioch 2002; Jarchow 2003; Schinke 2004; Schäfer 2006):<sup>4</sup>

$$r_t = \pi_t + \alpha(\pi_t - \pi^*) + \beta y + r^s \quad (1)$$

Dabei bezeichnet hier  $r_t$  das Operationsziel der Zentralbank, was bei *Taylor* die nominale Federal Funds Rate war. Ferner wird diese Größe häufig auch als Taylor Zins bezeichnet. Die Variable  $\pi_t$  bezeichnet die aktuelle Inflationsrate, während  $\pi^*$

<sup>2</sup> Vgl. zur Ablehnung geldpolitischer Regeln im Entscheidungsfindungsprozess Europäische Zentralbank (2001).

<sup>3</sup> Zur Vorarbeit der Regel vgl. allgemein die Arbeit von Bryant, R. C., Hooper, P., Mann, C. (1993).

<sup>4</sup> Vgl. zur Darstellung der Gleichung im Original Taylor, J. B. (1993).

das Inflationsziel darstellt. Die Differenz zwischen  $(\pi_t - \pi^*)$  wird zudem als Inflationslücke bezeichnet (Deutsche Bundesbank 1999; Jarchow 2003; Gischer, Herz, Menkhoff 2005). Die Variable  $y$  stellt die Outputlücke dar, die sich wie folgt erfassen lässt:

$$y = \frac{100 * (y_t - y_t^*)}{y_t^*} \quad (2)$$

Die Produktionslücke kann dabei als die relative Abweichung zwischen dem tatsächlichen Produktionsniveau oder realen BIP  $y_t$  und dem potentiellen Produktionsniveau oder BIP  $y_t^*$  gesehen werden (Deutsche Bundesbank 1999; Deutsche Bundesbank 2003). Als Produktionspotential kann die langfristige Entwicklung des BIP bei normaler Auslastung der existierenden Kapazitäten verstanden werden. So kann eine positive Produktionslücke bspw. in einem konjunkturellen Aufschwung entstehen und eine negative Lücke im konjunkturellen Abschwung (Kamps, Pierdzioch 2002). Die Größen  $\alpha$  und  $\beta$  stellen Gewichtungsfaktoren dar, die größer als null sind. Die letzte Größe  $r^g$  stellt den gleichgewichtigen Realzins dar.

Die von *John Taylor* entworfene Gleichung wurde nie ökonometrisch geschätzt (Taylor 1993; Judd, Rudebusch 1998; S. 5, Deutsche Bundesbank 1999; Fritzer 2000; Schinke 2004). Stattdessen nahm sein Entwickler an, dass die reale Federal Funds Rate (gleichgewichtiger Realzins) und die Zielinflationsrate zwei Prozent betragen und die Gewichtungsfaktoren jeweils mit 0,5 zu berücksichtigen sind. Für die Berechnung der Produktionslücke wurde eine jährliche Wachstumsrate des Produktionspotenzials von 2,2 Prozent angenommen. Die sich somit ergebene Taylor Regel hat dann die folgende Gestalt:

$$r_t = 2 + \pi_t + 0,5(\pi_t - 2) + 0,5y \quad (3)$$

Die oben dargestellte Regel kann in einem normativen und einem positiven Sinne verstanden werden (Kamps, Pierdzioch 2002; Fendel, Frenkel 2002; Schinke 2004; Jarchow 2003; Schäfer 2006). Im positiven Sinn liefert die Taylor Regel eine Erklärung für die zeitliche Entwicklung eines durch die Zentralbank kurzfristig steuerbaren Zinses. Normativ hingegen stellt die Regel eine Handlungsvorschrift oder Reaktionsfunktion dar. Aufgrund der Tatsache, dass sich die Wissenschaft zum größten Teil auf die normative Interpretation der Taylor Regel konzentriert, soll auch hier dieser Ansicht gefolgt werden und auf die normative Sichtweise detaillierter eingegangen werden. So können die Gleichungen eins und drei dahingehend verstanden werden, dass in einer Situation, in der das Inflationsziel sowie die Inflationsrate übereinstimmen und zudem keine Outputlücke besteht, der Nominalzins sich als Summe aus dem gleichgewichtigen Realzins und dem Inflationsziel ergibt. Bei einem Anstieg der Inflationsrate über das vergebene Ziel und/oder einer positiven Produktionslücke soll dann der Taylor Zins bzw. der zu steuernde Zins erhöht werden bzw. über dem Nominalzins fixiert werden.

Umgekehrtes gilt, wenn die Inflationsrate unter dem Inflationsziel liegt und/oder die Produktionslücke negativ ist. Wie stark oder schwach auf eine bestehende Produktions- oder Inflationslücke reagiert wird, ist durch die Gewichtungsfaktoren bestimmt. Konkret impliziert die Taylor Regel nach Gleichung drei (Fritzer 2000; Jarchow 2003; Görgens, Ruckriegel, Seitz 2008):

- Bei einem Anstieg der Inflationsrate um einen Prozentpunkt ist die Federal Funds Rate um 1,5 Prozentpunkte zu erhöhen.
- Bei einem Abfall des BIPs um einen Prozentpunkt unter das potentielle BIP ist die Federal Funds Rate um 0,5 Prozentpunkte zu senken.

Hinsichtlich der beiden Gewichtungsfaktoren hat sich basierend auf den Studien von *Clarida/ Galí/ Gertler* das sogenannte „Taylor Prinzip“ durchgesetzt (Clarida, Galí, Gertler 1998). Darunter ist zu verstehen, dass der Gewichtungsfaktor  $\alpha$  größer als eins zu wählen ist (Europäische Zentralbank 2001; Schäfer 2006). Damit soll gewährleistet werden, dass bei einem auftretenden Inflationsdruck die Geldpolitik restriktiver wird, um somit einen Anstieg des Realzinses zu ermöglichen. Dieser Anstieg soll garantieren, dass den, über Inflationserwartungen, negativ wirkenden Kräften auf die Konsum- und Produktionsentscheidungen entgegengesteuert wird, damit die gesamtwirtschaftlichen Ausgaben reduziert werden. Würde die Zentralbank ihren steuerbaren Nominalzins hingegen z. B. nur schwach anheben, so dass dieser unter der Inflationslücke bleibt, wäre der Realzins gefallen und es würde zu weiterer Inflationsdynamik führen.

Tatsächlich konnte *Taylor* mit seiner aufgestellten Regel die Entwicklung der Federal Funds Rate für den Zeitraum 1987-1992 sehr gut nachzeichnen (Taylor 1993; Woodford 2001; Fendel, Frenkel 2002). Dementsprechend konnte daraus gefolgert werden, dass die Fed in diesem Zeitraum ihre Zinspolitik an einer solchen Regel ausgerichtet hat, obwohl sie sich im Vorfeld nie darauf festgelegt hat.

Trotz des positiven Ergebnisses ist die ursprüngliche Taylor Regel nicht frei von Kritik. So basiert die Regel auf zum Teil abstrakten Annahmen und auf einem ad hoc Zusammenhang, dass heißt die von Taylor dargestellte Reaktionsfunktion kann nicht auf modelltheoretische Betrachtungen zurückgeführt werden (Fendel, Frenkel 2002; Schäfer 2006). Darüber hinaus wird Kritik an der willkürlichen Festlegung der Gewichtungsfaktoren geübt, da sich die Bestimmung der Koeffizienten bei Taylor nicht an der geldpolitischen Orientierung der Zentralbank und der Struktur der Volkswirtschaft ausrichtet (Deutsche Bundesbank 1999; Polleit 1999; Gischer, Herz, Menkhoff 2005; Schäfer 2006; Görgens, Ruckriegel, Seitz 2007). Weiterhin sind die Gewichtungsfaktoren nicht empirisch geschätzt, so dass bei ihrer Wahl Willkür besteht. Ferner gibt es rechnerische Probleme, die sich im Zusammenhang mit der Inflationslücke, der Outputlücke und des Realzinses ergeben. In diesem Zusammenhang kann die Inflationslücke unter unterschiedlichen Voraussetzungen berechnet werden. Zum einen bietet sich ein möglicher Preisindex für die Lebenshaltung an zum anderen der sogenannte BIP-Deflator. Auch wenn sich beide Alternativen im Zeitablauf sehr ähneln und eine fast gleiche Entwicklung auf zeigen können, reagieren sie unterschiedlich stark auf wirtschaftliche Schwankungen bzw.

Schocks, so dass sich dann unterschiedliche Taylor Zinsen ergeben können. Auch für die Berechnung der Produktionslücke gibt es mehrere unterschiedliche Alternativen. So kann zur Berechnung des Produktionspotenzials ein log-linearer Trend, der Hodrick-Prescott Trend oder der Weg über die Schätzung einer gesamtwirtschaftlichen Produktionsfunktion zur Anwendung kommen. Je nach Alternative können sich dabei unterschiedliche Niveaus des Produktionspotentials ergeben. Ferner sind die Annahme und die Berechnung eines gleichgewichtigen realen Kurzfristzinses als Durchschnitt der Differenz zwischen dem Nominalzins und der Inflationsrate über einen nicht näher spezifizierten Zeithorizont nicht widerspruchsfrei. Hinzu kommt als Kritikpunkt die Annahme einer Konstanz des realen Zinssatzes über einen langfristigen Zeitraum.

Neben diesen rechnerischen Kritikpunkten lassen sich außerdem konzeptionelle Probleme aufführen. Als Erstes ist die ursprüngliche Taylor Regel nur ein Erfahrungsergebnis, da sie keinen Erklärungsbeitrag für die Zinspolitik liefert (Polleit 1999). Ursache dafür sind die verschiedenen Wirkungsverzögerungen in der tatsächlichen Geldpolitik und der ex post Charakter der Regel. So liefert das Ergebnis der Taylor Regel keine Anwendung für eine vorausschauende Politik. Vielmehr verdeutlicht sie nur systematische Abweichungen der realisierten Inflation von der Zielvorgabe. Ebenfalls als Problem wird die Operationalität der Taylor Regel gesehen (Orphanides 2003; Schäfer 2006). Darunter wird verstanden, dass eine zeitnahe Beschreibung der Geldpolitik durch die von *Taylor* vorgeschlagene Regel nicht möglich ist. Der Grund dafür ist die späte Verfügbarkeit von notwendigen Informationen, um eine Berechnung des Taylor Zinses durchführen zu können. So werden die veröffentlichten Zahlen von den herausgebenden Ämtern bis zu ihrer Endfassung mehrfach revidiert und haben nur vorläufigen Charakter (Schäfer 2006). *Taylor* hingegen nahm in seiner Gleichung an, dass zum Schätzzeitpunkt vollkommene Sicherheit hinsichtlich der verfügbaren Informationen besteht. Wird stattdessen versucht die Taylor Regel mit Echtzeitdaten zu schätzen, ergeben sich signifikante Unterschiede hinsichtlich des Ergebnisses im Vergleich zu ex post Daten (Orphanides 2003).<sup>5</sup> Auch wird als weiterer Kritikpunkt das Zinsglättungsmotiv angeführt (Gischer, Herz, Menkhoff 2005; Schäfer 2006; Görgens, Ruckriegel, Seitz 2007). Hierunter ist zu verstehen, dass in der geldpolitischen Praxis die Zentralbanken versuchen Zinsschwankungen zu vermeiden. Dahinter kann die Absicht einer berechenbaren Geldpolitik verstanden werden. So ist es in einem Umfeld wirtschaftlicher Unsicherheit sowie nicht exakt definierter Wirkungszusammenhänge zwischen Geldpolitik und wirtschaftlicher Aktivität ratsam, vorsichtig auf Schocks zu reagieren und eventuell auf eine zeitlich versetzte aber bessere Informationslage zu vertrauen. Dies schließt mit ein, dass auf große und unvorhersehbare Zinssprünge aus Gründen der wirtschaftlichen Stabilität verzichtet werden soll. Nach diesem Ansatz sollte daher die Zentralbank ihre Zinspolitik nicht in einem Schritt betreiben, z. B. die Differenz zwischen Marktzins und Zielzins zu schließen, sondern in kleinen Schritten. Bei Anwendung der Taylor Regel allerdings erhöht die Zentralbank bei gestiegener Inflation ihre

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<sup>5</sup> Ähnlich sieht es auch die Europäische Zentralbank, vgl. hierzu Europäische Zentralbank (2001).

Geldmarktsätze eben nicht in diesen kleinen Schritten, sondern in einem Großen, so dass von einem Zinsglättungsmotiv nicht die Rede sein kann.

## Überblick über die verwendeten Daten

Bevor im Kapitel 4 eine Berechnung des Taylor Zinses nach der ursprünglichen Regel vorgenommen wird, sollen in diesem Kapitel die dafür benötigten Daten vorgestellt werden. Da es das Ziel ist, herauszufinden, ob sich die Zinspolitik der Europäischen Zentralbank im Zeitraum von 1999 bis 2009 durch die ursprüngliche Taylor Regel beschreiben lässt, kommen Daten zur Anwendung, die sich auf den Euroraum bzw. die Eurozone beziehen. Aufgrund der Zeitverzögerung bei der Berechnung und Verfügbarkeit von ex-post Daten wird für das Jahr 2009 auf Prognosewerte zurückgegriffen, die z. B. im Rahmen des Surveys of Professional Forecasters der Europäischen Zentralbank oder von Eurostat dem statistischem Amt der Europäischen Union bereitgestellt werden.<sup>6</sup> Zur besseren Anschaulichkeit sei die originäre Taylor Gleichung hier noch mal dargestellt:

$$r_t = \pi_t + \alpha(\pi_t - \pi^*) + \beta y + r^g \quad (6)$$

Im Rahmen der Beschreibung der verwendeten Daten und Variablen soll zuerst, das Inflationsziel  $\pi^*$  parametrisiert werden und mit dem Wert 1,9 in die Gleichung einfließen. Dabei ergibt sich dieser Wert aus dem aktuellen geldpolitischen Ziel der Europäischen Zentralbank „die Inflation mittelfristig unter, jedoch nahe zwei Prozent zu halten.“ (Europäische Zentralbank 2003a) Die Bestimmung des gleichgewichtigen Realzinses  $r^g$  erweist sich als etwas schwieriger. So kann der natürliche Realzins verstanden werden als der kurzfristige Realzins, der mit einem potentialgerechten Produktionswachstum und der Zielinflation vereinbar ist (Sachverständigenrat zur Begutachtung der gesamtwirtschaftlichen Entwicklung 2004; Europäische Zentralbank 2004; Sachverständigenrat zur Begutachtung der gesamtwirtschaftlichen Entwicklung 2006). Jedoch kommt als Schwierigkeit hinzu, dass sich dieser Zins nicht direkt beobachten lässt und langfristig unterschiedlich starken Schwankungen unterworfen ist. Somit kann über die Höhe des Realzinses nur eine Näherungsangabe gemacht werden, die das Ergebnis statistischer Schätzverfahren ist. Allerdings unterliegen diese Schätzungen selber Schwankungen, so dass die Angaben für den Realzins im Euroraum zwischen zwei und drei Prozent liegen (Europäische Zentralbank 2004). Darüber hinaus gibt es auch Studien, die einen Realzins von unter zwei Prozent und über drei Prozent verwenden, um den Taylor Zins zu berechnen (Deutsche Bundesbank 1999; Fritzer 2000; Schinke 2004). Um dennoch eine Parametrisierung des Realzinses vorzunehmen, sei auf die letzte Schätzung des Sachverständigenrats zur Begutachtung der gesamtwirtschaftlichen Entwicklung zurückgegriffen, der mit Hilfe der Kleinste-Quadrate-Schätzungen und unter Vernachlässigung einer möglichen Zinsglättungspolitik, sowie über einen 10 jährigen Zeitraum einen Realzins von 2,7 Prozent für den Euroraum schätzt (Sachverständigenrat zur Begutachtung der gesamtwirtschaftlichen Entwicklung 2007).

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<sup>6</sup> Zum Survey of Professional Forecasters vgl. exemplarisch Europäische Zentralbank (2009).

Ähnlich wie bei der Festlegung des Realzinses gibt es auch Schwierigkeiten bei der Bestimmung der Gewichtungsfaktoren. So sind die ursprünglichen Werte von *Taylor* in seiner originären Gleichung nicht auf Basis statistischer Schätzung ermittelt worden, sondern ad hoc festgelegt. Aus diesem Grund gibt es eine Vielzahl von Studien, die sich mit dieser Problematik auseinandersetzen und versuchen die Gewichtungsfaktoren mit Hilfe statischer Verfahren zu bestimmen (Belke, Klose 2009). So ermitteln bspw. *Gerdemesier* und *Roffia* unter Berücksichtigung der ursprünglichen Taylor Gleichung bei Vernachlässigung einer möglichen Zinsglättung Gewichtungsfaktoren für den Euroraum von 1,93 für die Inflation und 0,28 für die Outputlücke (Gerdemesier, Roffia 2003). In einer weiteren Studie, ein Jahr später, ermitteln die beiden gleichen Autoren hingegen Gewichtungsfaktoren von 0,80 für die Inflation und 0,72 für die Outputlücke (Gerdemesier, Roffia 2004). Demgegenüber steht z. B. die Schätzung des *Sachverständigenrats zur Begutachtung der gesamtwirtschaftlichen Entwicklung*, die ebenfalls für eine ursprüngliche Taylor Regel ohne Zinsglättung Gewichtungsfaktoren von 1,3 und 0,7 ermitteln (Sachverständigenrat zur Begutachtung der gesamtwirtschaftlichen Entwicklung 2007). Es zeigt sich somit, dass auch die Bestimmung der Gewichtungsfaktoren nicht eindeutig ist und Schwankungen unterliegt, die auf die verwendeten statistischen Verfahren und benutzten Daten zurückzuführen sind. So nutzen *Gerdemesier* und *Roffia* als Schätzverfahren die generalized method of moments, während der *Sachverständigenrat zur Begutachtung der gesamtwirtschaftlichen Entwicklung* die Kleinste-Quadrate-Methode anwendet. Beide Verfahren kommen dabei zu unterschiedlich signifikanten Ergebnissen für die Gewichtungsfaktoren. Da bereits bei der Bestimmung der Realzins auf die Ergebnisse des *Sachverständigenrats zur Begutachtung der gesamtwirtschaftlichen Entwicklung* zurückgegriffen wurde, soll dies auch für die beiden Gewichtungsfaktoren gemacht werden. Somit ergeben sich für die Variablen  $\alpha$  und  $\beta$  Werte von 1,3 und 0,7. Die Verwendung dieser beiden Werte verdeutlicht zum einen das Taylor Prinzip und zum anderen die Nähe der ursprünglich von Taylor festgelegten Werte von 1,5 und 0,5.

Für die Parametrisierung der Inflationsrate wird auf Jahresdaten im Zeitraum 1999 bis 2009 zurückgegriffen. Die verwendeten Daten basieren dabei auf Berechnungen von Eurostat und wurden als Veränderungsraten des Jahresdurchschnitts des Harmonisierten Verbraucherpreisindizes berechnet. Da für das Jahr 2009 noch keine endgültigen Zahlen vorliegen sei hier auf die Inflationsprognose zurückgegriffen. Die Berechnung der Outputlücke  $y$  findet nach folgender Gleichung sieben statt:

$$y = \frac{100 * (y_t - y_t^*)}{y_t^*} \quad (7)$$

Als schwierig in dieser Gleichung erweist sich die Bestimmung des potentiellen Produktionsniveaus oder BIP ( $y_t^*$ ) für den Euroraum. So gibt es eine Vielzahl von unterschiedlichen Schätzmethoden, die sich grob in statistische und theoriegestützte Ansätze unterscheiden lassen und zu unterschiedlichen Ergebnissen führen



(Deutsche Bundesbank 1999).<sup>7</sup> Bei den statistischen Verfahren können bspw. eine Trendfunktion und ein statistischer Filter zur Anwendung kommen. Die theoriegestützten Verfahren versuchen dahingegen das Produktionspotenzial auf seine ökonomischen Bestimmungsgrößen zurück zu führen (Deutsche Bundesbank 1999). Aufgrund dieser unterschiedlichen Methoden variieren die Werte für  $y_t^*$  im Euroraum je nach Studie zwischen 0,7 und 3,0 (Chagny, Döpke 2001; Vgl. Gerdesmeier, Roffia 2003; Sachverständigenrat zur Begutachtung der gesamtwirtschaftlichen Entwicklung 2007). So beträgt nach aktuellen Schätzungen der Europäischen Kommission für Wirtschaft und Finanzen das durchschnittliche Potentialwachstum im Euroraum 1,8 Prozent für den Zeitraum 2000 bis 2007 (European Commission Economic and Financial Affairs 2009). Um trotz der verschiedenen Möglichkeiten der Bestimmung und der breiten Spanne hinsichtlich des Potenzialwachstums eine Parametrisierung der Outputlücke vorzunehmen, sei auf die Berechnungen der *OECD* zurückgegriffen, die die jährliche Outputlücke im Euroraum für den Zeitraum von 1991 bis 2009 berechnet hat (OECD 2009). Außerdem spricht für die Nutzung dieser Daten, dass die Outputlücke von der *OECD* nach Gleichung sieben berechnet wurde.

Um abschließend den Taylor Zins mit der Zinspolitik der Europäischen Zentralbank zu vergleichen, soll dieser mit dem EONIA Zinssatz (*Euro OverNight Index Average*) verglichen werden. Dabei handelt es sich um den Zinssatz, zu dem auf dem Interbankenmarkt im Euro-Währungsgebiet unbesicherte Ausleihungen von einem auf den nächsten Tag gewährt werden. Die dazu benötigten Daten stammen aus den Monatsberichten der Deutschen Bundesbank von 1999 bis 2009 und wurden von dieser Institution als durchschnittliche Jahreswerte ermittelt. Zwar steuert die Europäische Zentralbank diesen Zinssatz nicht direkt, jedoch ist es ihr erklärtes Ziel Schwankungen dieses Zinses zu vermeiden und ihn nahe am Mindestbietungssatz zu halten (Europäische Zentralbank 2002; Europäische Zentralbank 2003b). Dementsprechend kann der EONIA als Proxy für den Vergleich der europäischen Zinspolitik mit dem Taylor Zins dienen. Darüber hinaus soll der 3-Monats-Euribor, als Zinssatz für Termingelder, mit dem berechneten Taylor Zins verglichen werden, da dieser Zinssatz als Benchmark für die langfristige Zinsentwicklung im Euroraum und die Entwicklung der Zinspolitik gesehen werden kann. Die hierfür benötigten Daten stammen ebenfalls aus den Monatsberichten der Deutschen Bundesbank von 1999 bis 2009 und wurden als durchschnittliche Jahreswerte ermittelt.

### **Anmerkungen zur Zinspolitik der EZB mit Hilfe des Taylor Zins**

Unter Verwendung der vorgestellten Daten aus Kapitel 3 ergibt sich für die Gleichung sieben folgende Gestalt um den Taylor Zins im Zeitraum von 1999 bis 2009 für den Euroraum zu berechnen:

$$r_t = \pi_t + 1,7(\pi_t - 1,9) + 0,7y_t + 2,7 \quad (8)$$

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<sup>7</sup> Eine gute Übersicht findet sich unter anderem auch bei Chagny, O., Döpke, J. (2001), S. 5.

Die jeweiligen Jahresdaten für die Inflation und die Produktionslücke sind in der Tabelle 1 zusammengefasst. Daraus lässt sich unter Verwendung der Gleichung acht ein entsprechender Taylor Zins berechnen, der ebenfalls in Tabelle 1 abgebildet ist.

**Tabelle 1.** Inflation, Produktionslücke und Taylor Zins für den Euroraum 1999-2009

<b>Jahr</b>	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
<b>Inflation</b>	1,2	2,2	2,4	2,3	2,1	2,2	2,2	2,2	2,1	3,3	0,4
<b>Produktionslücke</b>	0,0	1,4	0,9	-0,2	-1,2	-0,8	-0,5	0,9	1,8	0,4	-5,5
<b>Taylor Zins</b>	2,9	6,2	6,3	5,3	4,2	4,7	4,9	5,9	6,3	8,1	-2,7

Quelle: Eigene Berechnung.

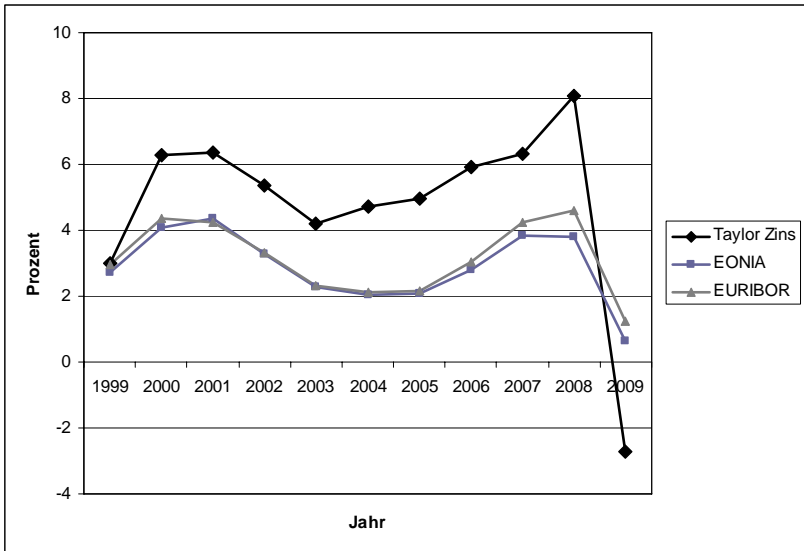
Besonders auffällig ist der negative Taylor Zins für das Jahr 2009, nach dem die Europäische Zentralbank ihr Geld am besten „verschenken“ bzw. ihr bereitgestelltes Zentralbankgeld zu einem freien Gut werden lassen sollte. Dieses Ergebnis kann als Ausreißer betrachtet werden und ist zum einen das Resultat der Finanz- und Wirtschaftskrise aus dem Jahr 2008/2009, die sich besonders in der negativen Berechnung der *OECD* hinsichtlich der Produktionslücke widerspiegelt. So gab es innerhalb des 10jährigen Betrachtungszeitraums kein so starkes Auseinanderfallen des realisierten Bruttoinlandsprodukts BIP vom Produktionspotenzial im Euroraum. Zum anderen ergibt sich dieser Wert auch aus der Unbestimmtheit der originären Taylor Regel, die sowohl für positive und negative Werte definiert ist, als auch aus der großen Wahlfreiheit bei der Berechnung des Zinses. Darunter fallen insbesondere die Gewichtung der Inflations- und Produktionslücke, als auch die Schätzung eines über zehn Jahre konstanten Realzinses.

Vergleicht man den berechneten Taylor Zins mit den Jahresdurchschnitten des EONIA und EURIBOR ergibt sich die folgende Tabelle 2 und die daraus entwickelte Abbildung 1. Dabei wird aus der zuvor genannten Abbildung der zeitliche Verlauf von Taylor Zins, EONIA und EURIBOR sichtbar.

**Tabelle 2.** Taylor Zins, EONIA und EURIBOR für den Euroraum

<b>Jahr</b>	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
<b>Taylor Zins</b>	2,9	6,2	6,3	5,3	4,2	4,7	4,9	5,9	6,3	8,1	-2,7
<b>EONIA</b> (Jahresdurchschnitt)	2,7	4,0	4,3	3,2	2,3	2,0	2,0	2,8	3,8	3,8	0,6
<b>EURIBOR</b> (Jahresdurchschnitt)	2,9	4,3	4,2	3,3	2,3	2,1	2,1	3,0	4,2	4,6	1,2

Quelle: Eigene Berechnung.



**Abbildung 1:** Entwicklung des Taylor Zins, EONIA und EURIBOR für den Euroraum. (Eigene Darstellung)

Es zeigt sich, dass der mit Hilfe der Taylor Regel berechnete Taylor Zins einen ähnlichen phasenweisen Verlauf aufweist wie der EONIA oder EURIBOR und somit zu Beschreibung der europäischen Zinspolitik im Zeitraum von 1999 bis 2009 dienen kann. Weiterhin wird deutlich, dass in Phasen eines wirtschaftlichen Aufschwungs (bspw. 1999-2001 und 2003-2009), gemäß dem Taylor Zins, eine restriktivere Zinspolitik durchzuführen sei, als in Zeiten des wirtschaftlichen Abschwungs (bspw. 2002-2003 und 2009). Beim Vergleich des Taylor Zinses mit seinen beiden Referenzgrößen bzw. Benchmark fällt auf, dass bis auf das Jahr 1999 von keiner Übereinstimmung der drei Zinsen gesprochen werden kann. Einzig in diesem Jahr liegen alle drei Zinsen dicht beieinander, so dass hier von einem neutralen Taylor Zins gesprochen werden kann. Das heißt, dass die europäische Zinspolitik, sofern die Europäische Zentralbank einer solchen Regel gefolgt wäre, weder zu expansiv noch zu restriktiv war. Nur in diesem Fall kann die Zinspolitik der Europäischen Zentralbank dahingegen verstanden werden, dass sich der zu steuernde Nominalzins aus der Summe des gleichgewichtigen Realzinses und dem Inflationsziel ergab. Jedoch zeigt sich weiter, dass für die Jahre 2000 bis 2008 keine Übereinstimmung zwischen dem Taylor Zins und dem EONIA sowie EURIBOR existiert. Hier wird ersichtlich, dass gemessen am Taylor Zins die europäische Zinspolitik zu expansiv war, da gemäß der Taylor Regel ein höherer Taylor Zins berechnet wurde, als es in der praktischen Umsetzung geschah. So hätte die Europäische Zentralbank für diesen Zeitraum eine wesentlich restriktive Politik betreiben müssen, damit sich gemäß der Taylor Regel ein neutraler Taylor Zins einstellt. Das heißt, die im Zeitraum von 2000 bis 2008 vorgenommen

Zinsänderungen waren für die damalige wirtschaftliche Situation (dargestellt durch die Inflations- und Produktionslücke) nicht angemessen und hätten stärker in Richtung einer restriktiven Politik ausfallen müssen. Ihr könnte der europäischen Zinspolitik vorgeworfen werden, dass sie ihr Inflationsziel nicht energisch genau verfolgt hat. Insbesondere für den Zeitraum 2003 bis 2005 wird deutlich, dass zwischen dem Taylor Zins und dem EONIA bzw. EURIBOR eine große Diskrepanz liegt. Zudem verweist ein in dieser Phase ansteigender Taylor Zins darauf, dass die zum damaligen Zeitpunkt eingeschlagene Niedrigzinsphase bereits Ende 2003 beendet werden hätte müssen. Hier wären ein Anstieg der Leitzinsen im Euroraum und ein restriktiver Kurs angebracht gewesen. In der praktischen Geldpolitik begann diese Phase allerdings erst Ende 2005. Wobei gemäß der Taylor Regel dieses Vorgehen der Europäischen Zentralbank weiterhin als zu expansiv gesehen werden kann, da die Entwicklung des EONIA bzw. EURIBOR unterhalb des berechneten Taylor Zinses liegt. Die stärkste expansive Phase der europäischen Zinspolitik, dargestellt durch die größte Diskrepanz zwischen EONIA bzw. EURIBOR und Taylor Zins, lässt sich für das Jahr 2008 finden. Hier hat der Taylor Zins seinen höchsten Wert, jedoch liegen EONIA und EURIBOR weit darunter. Es lässt sich folglich die expansivste Phase der europäischen Zinspolitik in ihrem zehnjährigen Bestehen konstatieren. Neben diesem Zeitraum einer zu expansiven Politik gemessen am Taylor Zins, wird für das Jahr 2009 wiederum eine zu restriktive Zinspolitik deutlich. Hier ergibt sich sogar ein negativer Taylor Zins im Vergleich zu den niedrigen aber positiven Werten von EONIA sowie EURIBOR. Dies Resultat kann der aktuellen wirtschaftlichen Lage in Folge der Immobilien- und Finanzkrise 2008/2009 geschuldet sein, die einen starken realwirtschaftlichen Einbruch hervorgerufen hat. Diese schockartige bzw. überraschende wirtschaftliche Entwicklung findet sich ohne besondere Gewichtung in der Taylor Regel wieder. Daher ist es auch nicht verwunderlich, dass als Reaktion auf dieses Ereignis auch der Taylor Zins sehr stark reagiert und einen übertriebenen restriktiven Kurs aufzeigt. Auf Grund einer bestehenden Nullzins Grenze in der praktischen Zinspolitik kann dieser berechnete Taylor Zins nur schwer als Ankerpunkt oder Benchmark für die Beurteilung der europäischen Zinspolitik gesehen werden.

## **Zusammenfassung**

Die von *John Taylor* entwickelte und nach ihm benannte Regel ist trotz einiger dargestellter Kritikpunkte ein probates Instrument zur Beschreibung und Beurteilung unterschiedlicher Zinspolitiken. So zeigt sich, dass mit Hilfe der Taylor Regel und dem daraus berechneten Taylor Zins die europäische Zinspolitik ex post beschrieben werden kann. Es lässt sich zudem vermuten, dass die Europäische Zentralbank bei der Durchführung ihrer Politik einer solchen Regel gefolgt ist. Allerdings wurde ein solches Vorgehen von der Europäischen Zentralbank stets verneinet, so dass die hier berechneten Taylor Zinsen nur als Beurteilungsmaßstab der tatsächlich durchgeführten Zinspolitik gesehen werden können. Vor diesem Hintergrund zeigt sich, dass die europäische Zinspolitik für den Zeitraum 2000 bis 2008 als zu expansiv gesehen werden kann. Einzig zu Beginn einer einheitlichen europäischen Zinspolitik im Jahr 1999 kann von einem neutralen Taylor Zins gesprochen werden. Das bedeutet, hier entspricht der berechnete Zins der tatsächlich durchgeführten

Geldpolitik. Auffällig ist zudem das Jahr 2009, hier ergibt sich aus der Berechnung ein negativer Taylor Zins und im Vergleich mit dem EONIA und dem EURIBOR eine zu restriktive Zinspolitik für den Euroraum. Jedoch kann dieses Ergebnis aufgrund der Finanz- und Wirtschaftskrise als Ausreißer gesehen werden. Trotz der guten Beschreibung der europäischen Zinspolitik mit Hilfe des Taylor Zinses muss abschließend fest gehalten werden, dass es sich hierbei nur um eine grobe Orientierungsgröße handelt. Daher sollte bei der Interpretation und besonders bei der Ableitung möglicher zinspolitischer Empfehlungen Vorsicht angebracht sein.

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# DOES INTEREST RATE MATTERS: STUDY OF INVESTMENT MANAGEMENT OF ESTONIAN COMPANIES

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## Abstract

The paper examines determinants of investment decisions of Estonian companies. Within investment decision determinants the influence of interest rates and cost of capital get special attention as well as the analysis of liquidity constraints. The study is based on answers of questionnaires received from 44 companies of Estonia. Results of the study show that most important determinants of investments are related to risk and uncertainty followed by liquidity constraints and business confidence determinants. Interest rate determinant and cost of capital consideration has small influence to investment decisions as well as have a low profile in overall management focus. Liquidity constraints on other hand should be considered an important decision factor behind investment decisions.

**Keywords:** investment management, interest rates, liquidity management, channels of monetary transmission mechanisms

**JEL Classification:** E22, G31

## Introduction

Do macroeconomic factors and specifically interest rates improve the allocation efficiency of investments? This question has intrigued both academic and business people. First significant concept in this field is the work of J. Miller and F. Modigliani where they state the interdependency of investment decisions from financial decisions (Miller, Modigliani 1958). Several empirical studies on that field are reporting different findings on relationship between financial market characteristics and corporate investment decisions showing large variety on their magnitude and direction of correlation. Even though assumptions of Miller and Modigliani model nowadays have been questioned still many studies would lean to strong influence of interest rates to investment decisions.

The purpose of this study is to analyze determinants of investment decisions of Estonian companies. Special attention has given to the interest rate influence on investment decisions. Different to most of empirical studies on that field where sophisticated econometric models are tested in the pool of aggregated data we have analyzed decision making motives through the direct questions from top managers of companies. The research method gives a possibility to analyze not only interest rate influence to investment decisions but more specifically the interest rate and other financial variables influence through the framework of cost of capital. Therefore our study do not argue as much over the interest rate influence to investment decisions but rather the usage of cost of capital framework within the



management of companies. Even though we have reached close to the investment decision makers of companies there remains still the question of interpretation of results. Therefore we used extensive literature review to work out questions and explain our considerations.

Beside the cost of capital variables influence to the investment decisions there is analyzed the wider set of variables important for companies considering investments. There is excessive number of empirical studies discussing the significance of certain variable to investment decisions whereas in our study the rank of important characteristics is presented. Due to the multiple choice questionnaire there is closed set of possible answers even though we have used large set of characteristics from other previous studies. For better interpretation we later group these characteristics into several sub-groups and discuss results in line with other studies. Even though the methodology and questions are not unique the results of the study are rather unique and could be used in further academic discussions as well as in practical purpose.

Within the analysis of determinants we also focus more deep to financial constraints of companies. Based on model from literature we discuss the existence of liquidity constraints of companies and possible reasons behind of it. According to studies of monetary transmission mechanisms the financial constraints could be another important framework explaining the interest rate influence to investment activities. Therefore the simultaneous study of several decision making frameworks gives unique opportunity not to study them separately but also compare their significance and rank their influence to the management of companies.

The paper is organized as follows. Literature review contains overview of classical investment theories where several costs of capital variables used in other studies are discussed. Also there has given a brief review of other important variables of investment activity discussed deeply in the literature as liquidity constraints and uncertainty influence to investments. Finally some other aspects of investment management as industry influence, ownership structure and the size of a company is discussed. Methodology and data part explains the composition of questionnaire and gives short overview of responding companies as well as the questioning procedure. As the sample of companies consisted 44 biggest non-financial companies of Estonia the interpretation of results should be carefully considered. Results of the study have been organized in three sub-sections to give a better distinction of findings. There is a section for ranking of several investment variables as well as separate sections for cost of capital variables analysis and liquidity constraints analysis. Finally, some conclusions are drawn about the investment management in Estonian companies.

## **Literature review**

The neoclassical interest-profit theory of investments says that investment depends on the interest rate, given a demand curve for investment which is defined by decreasing marginal product (rather similar to the Keynesian marginal efficiency of

capital). The objective of investment is to maximize the market value of the company. “The (neoclassical) theory states that the size of the capital stock and the rate of interest are mutually determined by the supply and demand of capital services, both of which are expressed as a function of the rate of interest” (Lund 1971). Investment will be approved as long as expected rate of profit is higher than the rate of interest whereas expected rate of profit is determined along the marginal product curve. Therefore the interest rate determines the amount of investments made by the company.

The further development of theory replaces the interest rate by the cost of capital stating that investments are dependent on opportunity cost of investments (which means the weighted average of the expected return of capital) (Miller, Modigliani 1958). With the unlimited and easy access to money and capital market and assumptions of rational behavior the cost of capital for every company is determined and is the same for every company independently of its origin (for example, no distinguish of internal and external origin). This theory strongly influences modern mainstream economics in micro level as well as in macro level.

The empirical studies test the cost of capital influence to investment decisions using variety of cost of capital determinants. Despite the obvious selection of interest rate as the main determinant of cost of capital the test through the interest rate has some disadvantages. There has been pointed out the interest rate influence to investments through the overall demand in economy and possible influence to investment decisions through the expected revenue of company (House *et al.* 2007; Gilchrist, Zakrajsek 2007). Also the direct questionnaire methodology includes the risk of positive feedback phenomena from respondents and therefore the cost of capital influence should be studied through several questions (Wilkes *et al.* 1996). In the current study inflation and taxes are included as the two most quoted cost of capital variables beside the interest rate. Inflation and inflation uncertainty has been considered an influential variable influencing the cost of capital (Huizinga 1993; Dewald 1998). Increasing inflation uncertainty means larger realizations of unexpected inflation which is incorporated into interest rates and thereby affects the intertemporal allocation decisions made by people and companies. Based on those studies the importance of inflation expectation is the same as the expectation of future interest rates due to the same transmission mechanism to the cost of capital. There are empirical studies investigating inflation uncertainty influence to investment decision of companies which find mostly positive causality (Dewald 1998; Wu 2006). The transmission mechanism for the possible link is uncertainty about the real net present value of capital expenditure where investors are motivated on real interest rates rather than nominal interest rate<sup>1</sup>.

The influence of taxes is not so obvious. There is a theoretical framework presented by J. Stiglitz (Stiglitz 1973) that investment decisions are done based on before-tax results. The main argument for this phenomenon is that a change in the tax rate would not change the ranking of investment projects' expected profitability. Thus,

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<sup>1</sup> see for further disussion Wu (2006) and Bercenau (2006)

tax rates would not influence investment choices directly. Tax rates however would influence investment choices indirectly because tax rates would affect savings and through that market-clearing real interest rate reducing the propensity to save in society. These indirect phenomena would cause negative causality between tax rates and investment activity. Empirical studies of taxation cover more wide range of taxes from property tax, personnel tax etc to income tax and other capital taxes. Generally could be stated that within the country the influence of taxes to investment decision is rather mild whereas the influence of taxes to foreign direct investment decisions are significant (Dewald 1998; Schanz 2006; Tanzi, Howell, 2000; Canh *et al.* 2004). There also has been found that tax incentives play higher role in developing countries than in developed countries (Tanzi, Howell 2000; Canh *et al.* 2004) even though there is not clear the reason of that. Non of those groups of countries tax incentives are not considered (most) important determinants of investments therefore the high usage of tax incentives would not ultimately indicate the high efficiency of the method to stimulate investments. Even though the industrial policies which provide incentives to retain profits and through that encourage investments in growth-oriented strategies are important instruments perhaps with major impacts on the capital structure and investment policy of small growing high tech companies (Heshmati 2001). Therefore the influence of taxes in monetary terms – the impact transmission mechanism through the cost of capital – might be relative small whereas the influence of taxes in liquidity constrained companies – the impact transmission mechanism through the availability of internal equity – might be high.

In a world of perfect capital markets the investment decision of a company would be independent of its financing decision (Miller, Modigliani 1958). However in a world with asymmetric information, moral hazard, agency costs, adverse selection and other market imperfections internal and external funds will not be perfect substitutes. Therefore in world with imperfections investment spending could be affected by restrictions and constraints. Due to the asymmetric information and agency costs banks will charge a higher interest rates from companies on which they have less information. The risk premium in interest rates will be lower and depend of net worth of a company which can be seen as collateral for financing institutions. Due to the moral hazard effect banks will raise premium of external financing based on relative indebtedness of a company. This is also the basic concept for credit channel view of monetary policy transmission mechanism which lay on idea that the investment decision of a company is dependent from financing decision.

As examples of credit rationing and impact of financial constraints of investment decisions of companies there are studies which empirically test relationship between companies generated cash-flow and their investment activities (Love 2001; Cleary *et al.* 2007; Bopkin, Onumah 2009; Heshmati 2001). According to the cash-flow influence to investments companies prefer to use internal resources for investments which would indicate the liquidity constraints of companies. However, there is considerable debate about interpretation of these positive correlations. Beside the constraint theory there are explanations of “excessive conservatism” of managers (Kaplan, Zingales 2000) or agency conflict between managers and shareholders

(Fathi, Gailly 2007). According to the agency conflict managers can act contrary to the interest of shareholders and pursue other goals than maximizing the company's value. Thus, managers tend to over-invest and adopt investment projects as long as these investments increase the size of the company. There are more agency constraint explanations in literature – cash-flow sensitivity to diluted structure of shareholders (Goergen, Renneboog 2001) or investment analysis within Keiretsu's (Hoshi *et al.* 1991) etc – where they all confirm the positive relationship between the free cash-flow and investment activity.

Since late 1980s several authors have stressed the impact investment-uncertainty relationship (Abel, Eberly 1994; Dixit, Pindyck 1994). The irreversibility of investments refers to the situation that machinery and equipment may be difficult to sell afterward or resale price is substantially below the replacement costs. While the investment is irreversible, this introduces an option-value of postponed investments until later time when more information about relevant future events is available. If uncertainty is higher then the value of that investment option of waiting is increasing leading to lower current investment outlays.

One can see that under the assumption of competitive markets and constant return of scale uncertainty may not necessarily lead to lower level of investments (Abel, Eberly 1999; Wu 2006; Cleary *et al.* 2007). This inverted U-curve - low levels of uncertainty investment-uncertainty relation may show positive correlation whereas at high level of uncertainty this relationship starts to become negative - may be explained by so-called hangover effect of irreversible investment. It means that on the stage of small uncertainty the irreversibility would inert companies invest more than their desired level of investment would be. Few empirical studies would support this theory (Bo, Zhang 2003) but wider empirical approach is to study the linear impact of investment and uncertainty (Abel, Eberly 1999). Studies also show that this negative relation is related to the degree of irreversibility of investment (Ogawa, Suzuki 2000).

Usually empirical studies of determinants of investment decisions include a number of other parameters not directly related to any significant economic theory. Due to the specific sample analyzed in empirical part of the study we shortly refer two of those parameters: industry influence to the investment determinants and ownership structure to investment determinants. There has been found that industry affects the capital structure choices of companies (Chung 1993) as well as determinants within different industries might be different (Wilkes *et al.* 2002; Ogawa, Suzuki 2000). Also the ownership structure has an impact of determinants of investments. Some studies (Goergen, Renneboog 2001; Fathi, Gailly 2007) find that concentration of ownership increases the sensitivity of investment determined by free cash-flow.

Last but not least, the influence of companies size to investment determinants. Several empirical studies show that bigger companies are less constrained financially (Love 2001; Fathi, Gailly 2007) as well as the cost of capital consideration is higher in publicly traded large companies (Pinegar, Wilbricht 1989; Kjellman, Hansen 1995; Sander 2003). This might be explained higher information

asymmetry in case of small companies as well as the higher influence of agency costs per output of companies. Therefore the results of current study could be applied to the total Estonian companies even though the size of average sample company is much higher than the size of an average Estonian company.

## **Data and methodology**

The method of current empirical study is the direct questionnaire studying investment decision making motives of Estonian companies. There are number of empirical studies using aggregated data to analyze motives and behavior of investment management having later on difficulties to interpret results. The direct questionnaire avoids the problem of later interpretation but still has data enough to draw statistically significant findings.

Questionnaires accompanied with a letter explaining the aims of the research were sent to the CFOs of 200 biggest Estonian non-financial companies. The questionnaire itself contained wider spectrum of financial management issues of companies; in this study investment-related topics are discussed. 44 companies out of 200 replied which makes the response rate ca 22% which is an average response rate of such kind of studies. Questionnaire was composed in Estonian language. The study sample was consisted of big companies where the knowledge and ability to follow and manage capital costs and financial indicators should be bigger (Pinegar, Wilbricht 1989; Kjellman, Hansen 1995; Sander 2003) and the influence of liquidity constraints should be rather moderate (Love 2001; Fathi, Gailly 2007). The ranking of companies was done on the basis of companies' turnover which somehow increased the representation of trade companies in the study sample.

The questionnaire consisted mostly closed questions and statements which respondents were asked to rate on a scale of "strongly agree" or "strongly disagree" (for example, "which of the following determinant plays important role on investment decision?") or to rank in order of importance to their company. Some questions were behavior situations with possible reactions (multiple choices) from which respondents could choose most suitable reaction (for example "which of the following choices would describe better your financing decision making new investment?").

The questionnaire used in the current study is a modified version of the questionnaire designed by J. M. Pinegar and L. Wilbricht (Pinegar, Wilbricht 1989). Main modification considered the fact that most of Estonian companies were not listed companies and therefore questions and terminology had to be rearranged. Current study differs also by fact that study results are not anonymous. On one hand it enables to mix data from different sources but on other hand may discourage respondents and reduce the response rate. Still, respondents were assured that obtained information would be revealed to third parties only in aggregate form.

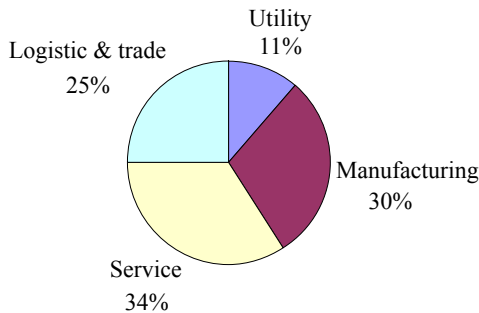
Respondent companies were quite different from an average Estonian company (Table 1). They were bigger in size and had smaller financial leverage as an average

Estonian company. Therefore companies in our sample have more analytical resources to study investment projects, have wider and easier access to different options of financing investments as well as better knowledge of financial management issues than an average Estonian company. The financial capability, better knowledge, more human resources with higher specialization within company should be considered interpreting results and drawing conclusions.

**Table 1.** The comparison of sample companies to an average Estonian company

	average Estonian company	respondent company
Average Size of Assets (Mio Euros)	0.402	53.177
Average Number of Employees	11.7	574
Average Debt-Equity Ratio	0.535	0.28
Average Return on Equity (%)	12.43	10.5
Average Growth of Assets (%)	15.44	15.51

Also the structure of responding companies does not represent the structure of Estonian companies nor does the structure of companies from other study (Wilkes *et al.* 1996; Sangster 1993). The structure has illustrated in Figure 1.



**Figure 1.** The structure of responding companies by field of activity.

The ownership structure illustrates well the origin of the bigger non-financial companies but is not a typical ownership structure of Estonian companies. State-owned and municipality-owned companies are 14 (32%) within our sample group. Subsidiaries of foreign-owned or domestic-owned companies were 12 (27%). Publicly traded companies were 5 (11%) within the sample group of respondents. Therefore the sample would not match the structure of Estonian companies nor in the field of activity nor by the ownership.

Even though direct questions from managers of companies would help to overcome the problems of later interpretation of data there still should be carefully avoid confusing questions. Similar studies conducted on investment management issues have found that interpretation of direct study of interest rate influence to the investment management can be confusing and easily misinterpreted. On study of F. M. Wilkes et al (Wilkes *et al.* 1996) they found that high and rising interest rate would be seen from the management perspective as a negative determinant in management of investments due to the fact that high interest would reduce demand for goods and therefore unstimulating the further investment of a company. The direction of an answer – high negative correlation between the interest rate and the amount of investment – is in line with the neoclassical interest-profit theory but the reason behind of it is something very different.

In the current study has deliberately avoided direct questions of interest rate influence. Instead of a questioning interest rate influence to investment decisions interest rate influence has been compared with other possible determinants of investment decision. The set of questions would give a context of overall management and help better to interpret results. This behavior approach has been used to describe cost of capital framework within companies.

We are fully aware of possible distortion of answers due to the close set of multiple options. Still we consider the influence of closed set relatively small due to the high number of multiple choices as well as interpretation of results through the many questions. Also should be stressed that the main focus of the study is not to analyze behavior of companies in investment management but to test a certain hypothesis on management behavior on investment decisions presented in the literature review.

Most of the studies in the field of investment management recommend to use real interest rate instead of nominal interest rate (Huizinga 1993; Dewald 1998) whereas some studies argue the importance of goals and objectives of investments to decide for the usage of nominal or real interest rate (Bercenau 2006). When the revenues and costs within the investment horizon are determined by market rather than fixed by some contracts companies should use the real interest rate instead of nominal interest rate. Therefore the expectations to inflation for companies would be as important as the expectations for interest rates. Within the current study inflation and expectation for inflation are rather important variables to estimate the usage of cost of capital framework within the companies.

Even though other empirical studies would not consider taxes as important determinant of investment decision they all have included the taxation part in their studies. In the current study taxation issues are also included in the set of multiple options as a determinant of investments. Whereas the saving ratio within the country is relatively unimportant on the point of availability of financial resources the influence of taxes could be seen in the context of financial management of companies. The influence of taxes could be considered as a determinant of cost of capital and have similar effect as the interest rates or inflation.

## Results of the study

The results of the study have organized through the three separate parts. First, respondents were asked to rank determinants of investments from the given set of determinants including determinants related to the cost of capital of companies. Findings of investment determinants are discussed in first subsection of the study results. Second subsection includes analysis of cost of capital to the management of companies. It consists three different set of questions related to the interest rate risks and interest rate management. Through the analysis of answers to those questions the purpose of interest rate management within companies becomes obvious. Third subsection analyzes the influence of liquidity constraint through the preferences to finance investments.

### Determinant of investment decisions

The set of multiple choices to analyze determinants of investments were based on similar studies from other countries (Pinegar, Wilbricht 1989; Kjellman, Hansen 1995) as well as consideration of authors. Those determinants obviously included determinants of cost of capital of companies. Results of relative importance of determinants affecting investment decisions are brought in table 2.

**Table 2.** Relative importance of factors and principles affecting investment decision of Estonian non-financial companies

Factors and Principles by order of importance <sup>a</sup>	Number of responses within each rank						Mean <sup>b</sup>
	1	2	3	4	5	Not ranked	
Expected cash flows from project to be financed	0	0	2	7	34	0	4.74
Ensuring long-term survivability of the firms	0	0	3	8	32	0	4.67
Maintaining financial flexibility	0	1	3	20	19	0	4.33
Risk of project to be financed	0	0	6	19	18	0	4.28
Size of the project to be financed	0	2	14	8	19	0	4.02
Maintaining financial independence	0	5	7	16	15	0	3.95
Maintaining voting control	2	6	11	8	16	0	3.70
Growth potential of the firm	1	3	17	15	7	0	3.56
Avoiding dilution of common shareholders' claims	3	10	10	8	12	0	3.37
Tax considerations	2	9	15	14	3	0	3.16
Maximizing security prices	8	5	12	8	9	1	3.12
Inflationary expectations	6	6	15	13	2	1	2.98
Depreciation	8	11	12	10	2	0	2.70
Considering financial decisions of competitors	12	10	9	8	4	0	2.58
Bankruptcy costs	22	7	7	4	3	0	2.05

<sup>a</sup> The managers were asked to rank the factors on a scale from 1 as "unimportant" to 5 as "important".

<sup>b</sup> The mean is calculated from rankings 1 through 5. A source not ranked is neglected.



As one can see the set of important determinants is much wider than discussed in the literature review. By analyzing the relative importance of different factors becomes obvious the high importance of the investment project characteristics as expected cash flow, risk and the size of investment. Other important characteristics are related with the survivability and business confidence as financial flexibility, long-term survivability, financial independency and voting control.

For better interpretation of results brought in table 2 determinants could be grouped into following groups: cost of capital determinants (as inflation expectation, taxation, maximizing share price etc), business confident determinants (expected cash-flow, survivability, financial independency, bankruptcy etc), uncertainty and risk determinants (risk of project) and liquidity determinants (size of the project, financial flexibility). The basis for division of determinants is the internal behavior motives of companies like their vision to future or confidence, their cost of capital determinants, their risk evaluation and their financial ability constraints. Results are presented in table 3 where the rank has been calculated as the weighted average mean of total group.

**Table 3.** Relative importance of group of factors determining investment decisions of Estonian companies

	number of determinants	rank
uncertainty and risk determinants	1	4.280
liquidity determinants	2	4.175
business confident determinants	5	3.794
cost of capital determinants	3	3.087
other ungrouped determinants	4	3.053

As it can be seen that uncertainty and risk determinants are most important consideration in investment management followed by liquidity determinants and business confident determinants. Based on the multiple choices within the questionnaire becomes obvious that those risk and uncertainty issues are rather related with investment project then failure or bankruptcy risk of company or overall business confidence. As the differences between those top rankings are relatively small and number of determinants in some subgroup is very little then those top rankings could change including more characteristics into the list of multiple choices. Even though could be stated that determinants related with uncertainty, liquidity constraints and business confidence are important for Estonian companies to make investment decisions.

The low importance of cost of capital determinants is in line with other empirical studies (Bopkin, Onumah 2009; Kjellman, Hansen 1995; Pinegar, Wilbricht 1989; Wilkes *et al.* 1996). One explanation to the low importance of cost of capital determinants could be the fact that the current sample consists only 11% of publicly traded companies and could therefore be biased towards the inefficient feedback of capital market and shareholders value. Also there are many companies owned by

local municipalities or solely by other companies. Still the low importance of cost of capital determinants are viable in other studies were the sample consists only publicly traded companies. Therefore the reasons why costs of capital determinants have low importance need deeper analysis. The influence of cost of capital and behavior towards the interest rate risks within companies are analyzed in next subsection.

Another group of determinants, liquidity constraints, will also be analyzed more deeply in further subsection. As presented in table 2 and table 3 the relative importance of liquidity constraints is high on investment decisions of companies. To give a better understanding of liquidity constraints the absolute importance should be discussed similar to the cost of capital.

Surprisingly strong influence to investment decisions have determinants which are related to business confidence. Those characteristics include cash-flow expectations from business projects, long-term survivability as well as financial independency. All those parameters reflect the aspects of attitude towards the external economic processes. Previous micro level studies have not stressed the influence of business confidence on decisions of investment management. Still there are several macro level studies which refer to the business confidence influence to investment decisions (Amato, Gerlach 2001; Borio, Zhu 2008). They state that companies treat the risk of projects as exogenous and risk premiums also exogenously given (or absent totally). Then the defaults when they will occur will not change the behavior but rather will change the attitude or confidence of companies. This would cause easily the over-exuberance or disappointment of companies which depends on the cycle of economy. Those procyclical business confidence stages would impact the investment behavior of companies. Therefore also is plausible to assume that the relative importances of business confidence determinants are cyclical and have strong time dependency.

As one can see there are many determinants which are ungrouped. Due to the fact that weighted mean of those determinants are close to three their influence to investment decision is rather neutral. Therefore determinants as the behavior of competitors or diluted shareholding would have little impact to the investment management decisions of companies.

### **Cost of capital**

As the analysis of determinants showed the interest rate determinants have relative insignificant influence on investment decisions. In this subsection we analyze interest rate management and cost of capital consideration on management decisions of companies. Instead of direct questions to interest rate influence and other variables of cost of capital we approach to that issue analyzing meaning of interest rate management to companies and through that the importance of cost of capital framework in the management of companies.

A sustained environment of lower interest rate should mean a lower cost of capital and therefore also lower required rate of return. How much lower depends on the method of funding and structure of balance, but definitely it should be lower. If a company does not adjust its cost of capital in phase of low interest rate it cuts out potentially profitable investments. In opposite case, if a company does not adjust its cost of capital on high interest phase, it lowers substantially the wealth of owners of a company.

The current questionnaire consisted many questions about the follow-up of interest rate exposure and expenditure as the main source of cost of capital of a company. Due to the fact that most of sample companies were not publicly traded and have loans from banks then we do not expect active capital structure management as could be on the case of publicly traded companies. Instead of that the focus of questionnaire was the active follow-up of interest costs and active interest risk management. This would not only describe the interest follow-up and interest risk management but also explains motives behind those decisions.

First, we were asking to specify how they would interpret possible interest rate risk to their company 41 companies out of 44 considered interest risk as possible interest cost influence to the profitability to the company. Only 3 companies considered interest rate risk as a determinant to the cost of capital whereas 2 of them were concerned possible influence to their share price. This result would indicate that most of Estonian companies would consider interest rate as a determinant of profitability of company and interest rate influence to cash-flow rather than the determinant of cost-of-capital.

Second question was to specify the target of interest rate management. 12 companies (36%) answered the direct interest costs, 6 companies (18%) answered the profit/profitability of company and 1 company mentioned influence to company's investments. 14 companies out of 44 did not specify the target of interest rate management. This result is in line with a first question that companies are dealing with interest rates as a determinant of interest costs and therefore determines also profitability of company. Interest rates are not considered as a determinant of cost of capital in investment management and therefore determinant of shareholders value. The result is also in line with the finding that companies would consider more the business confidence instead of cost of capital issues (motives as avoidance of bankruptcy, stability of profit, stable liquidity etc).

Last but not least, we asked from companies also directly the importance of cost of capital management as a part of interest rate management of company. More than half of respondents (23 out of 44 companies) said that interest rate risks are unimportant in management of company. Even though it does not indicate the unimportance of interest costs or interest rate influence to the company but rather would reflect the interest rate importance on cost of capital follow up of the company. It would be difficult to imagine companies being passive in interest rate management and having active follow-up of interest rate influence to cost of capital in investment management.

Passiveness of management of cost of capital is in line with findings of other studies (Dewald 1998; Love 2001; Wilkes *et al.* 1996). According to those studies companies prefer to use cost of capital figures or discount ratios for investment analysis for a longer period of time. They tend to use approximate figures which have been calculated some times ago where fluctuating interest rates and inflation would not have a intimate influence to the discount factor of investments nor through the expected cash flows or through the expected cost of capital.

The stickiness of discount rates on investments within the sample group might be also explained by the ownership structure. Should be stressed that 59% of respondents were not a typical privately owned companies – 14 of them (or 32%) were owned by state or local municipalities and 12 of them (27%) were solely owned by foreign or domestic company. Therefore required rates of investment projects may also be determined by parent companies abroad on the basis of interest rates elsewhere. Some international companies have established required rate of return which is applicable in all countries they operate. Also there are studies stating the industry effect on capital structure choices (Chung 1993) which could have influence to low importance of cost of capital determinants.

We still would consider the influence of ownership structure as well as industry influence to cost of capital determinants rather mild. There are results of other studies where the industry structure is different (Wilkes *et al.* 1996) or different ownership structure (Pinegar, Wilbricht 1989) and still those studies refer to low importance of cost of capital on investment decisions. Therefore the significance of cost of capital framework should be carefully considered in academic studies as well as on practical exercises of corporate finance.

### **Liquidity constraints**

Our first part of study showed how important is liquidity constraints within other determinants of investment management decisions. In this part we analyze how important are liquidity constraints as determinant of investment decisions in companies using more traditional approach studying the financing preferences of investments. The financing preferences approach – also referred as pecking order approach – is probably most used approach for examining the liquidity constraints in companies and overall economies<sup>2</sup>.

As we showed earlier in literatures review the positive correlation between investments and generated liquidity is highlighting possible financing constraints. In the current study we analyzed financing constraints in opposite way by asking respondents to rank their financing source preferences on investment management. Results are brought in table 4 where the mean of the rankings were calculated and higher mean imply higher preferences.

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<sup>2</sup> See for further discussion Fazzari *et al.* 1988; Hennessey *et al.* 2007

**Table 4.** Preference ranking of financing sources among Estonian companies

Financing source	Mean
Internal equity	6.79
Bank loans	6.16
Bond issue	5.00
External equity from existing shareholders	4.53
External equity from strategic partners	3.16
Convertible debt	3.05
Open public emission of shares	2.26
Preferred equity	2.21

Survey results indicate that internal equity is the most preferred financing source of investments followed by bank loans and bond issue. Also one can see strong relative preferences within financing options brought in Table 4.

65% of respondents ranked internal equity as their first choice while 16% preferred to take bank loans as a first choice and 7% had first choice to issue bonds. The current survey results are unanimously support the internal equity as the most preferred and most used source to finance investments. Even though there are explanations as high transaction costs or agency costs of other sources we would consider main reason for high usage of internal equity as a typical example of liquidity constraints of companies. The argument of agency costs would not be proper on companies where they already use bank loans and transaction costs would not be significant on total amount of investments. On other hand there is not enough data to model precisely the behavior of companies. Based on current findings companies prefer internal equity for financing investments which strongly indicates the problem of credit rationing and liquidity (or collateral) constraints of companies. Existence of liquidity constraint would be also in line of other findings of the current study.

There are several studies arguing existence of liquidity constraints of companies operating in less-developed countries with weak financial system and high agency costs (Canh *et al.* 2004; Mickiewicz *et al.* 2004). There are other studies which rather see dependency of liquidity constraints of development stage of company and dependency of industry (Valderrama 2002). Typical example is the fast-growing hi-tech companies which face strong liquidity constraints in the phase of product development. In our sample there are not so many companies to analyze industry dependency of liquidity constraints nor does our collected data structure not allow analyzing different development stage of companies. We could refer to number of studies from different countries and different industries referring to the importance of liquidity constraints on investment decisions (Pinegar, Wilbricht 1989; Kjellman, Hansen 1995; Canh *et al.* 2004; Tanzi, Howell 2000).

Should be also mentioned that since 2000 Estonian companies are eligible to pay corporate income tax on payment of dividend (s.c. deferred income tax system). This could affect the postponed dividend payout decisions and preference to use internal

equity on financing investment decisions. Still we could argue that the influence of tax system to investment activity is rather mild due to the relative importance of tax determinacy of investment decision presented in Table 2 and Table 3.

## **Conclusions**

The aim of the current study was to analyze determinants of investment decisions of Estonian companies. More deep was analyzed interest rate influence to investment decisions through the framework of cost of capital and an existence of liquidity constraints motive on investment decisions. For that the questionnaire was composed and sent to 200 biggest non-financial Estonian companies. 44 out of those 200 answered (response rate 22%) and results were discussed and analyzed in the current study. Based on the results of previous studies confirming that bigger companies are less constrained financially as well as the cost of capital consideration is higher in publicly traded large companies we refer to our findings as findings of whole Estonian corporate sector.

Using similar research methodology of previous studies we found important investment determinants of Estonian companies and ranked them in line of importance. The most important group of determinants of investment decisions are uncertainty and risk determinants. Estonian companies consider risk issues as main issues considering their investments. Within the study we did not specify the source of the risk but based on different multiple choices which were used in questionnaires those risks are rather related with investment project then failure risk of company or overall business confidence. Second group of determinants important on investment management are liquidity determinants were companies consider their ability to invest and face a liquidity (or collateral) constraints. Third subgroup of determinants important on investment management was business confident determinants. Those determinants would rather reflect internal readiness of companies to invest. The importance of cost of capital determinants according to our study is rather low. Should be noted that questionnaire was carried through between biggest non-financial companies of Estonia which limits the usage of determinants to an average Estonian companies.

Investment decision determinants are broadly in line with other similar empirical studies. Different to other studies we have specified determinants related to business confidence and showed their relative importance on investment management. Should be stressed that business confidence determinants are by definition strongly procyclical with overall economic activity and therefore might have different level of influence in different moment of time. The low level of importance of determinants related with cost of capital is in line with findings of other empirical studies about companies' investment determinants.

In the second part of the study we analyzed more deeply the interest rate influence through the cost of capital framework to management of a company. As our study shows the interest rate management has been considered unimportant for management of companies. Mainly companies consider interest rate influence

through the direct interest costs and influence to the profit rather than the influence to the cost of capital and shareholders value. Therefore companies would rather see the focus of interest rate management to reduction of overall costs and through that the improvement of profit then the influence to the cost of capital and through that the shareholders value. Based on these findings could be stated that investment decisions are not determined through the framework of cost of capital whereas the influence of financial indicators as interest rates etc are rather weak to overall management of companies.

In third part of the study we analyzed the liquidity constraints influence separately from other determinants and ask their independent influence to the investment management decisions. For that we focused on preferences of investment financing. As we showed in literature review the preference to use internal equity to finance investment decisions is strongly related with liquidity constraint existence in corporate finance. Our survey shows that 65% of respondents ranked internal equity as their first choice of investment finance. Therefore we consider strong liquidity constraint existence within investment management of Estonian companies. Whereas the strong liquidity constraints' influence is considered, the possible interest rate influence to the investments could be explained rather through the liquidity channel on monetary transmission then through the cost of capital channel.

As we specified already in the study there are certain limitations of our conclusions. First, our sample group is quite different of average Estonian companies – there is size effect of companies, there could be industry structure influence as well as the ownership structure influence. All those influences are discussed more deep in the study but they still may influence the overall conclusions. Second, determinants of investment decisions are dependent of cycles of economy and changing during the time (Pereira 1991). Therefore the interpretation of results should be in the context of socio-economic situation of country or otherwise these results should be taken as a snapshot in time.

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# KNOWLEDGE TRANSFER THROUGH UNIVERSITY-INDUSTRY RELATIONS: SOME ASPECTS OF ORGANIZATIONAL CULTURE<sup>1</sup>

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## Abstract

The role of national universities and other higher education institutions in knowledge transfer in countries with post-Soviet economies has been studied in very modest extent, especially in the context of small countries. This paper concentrates on the organizational culture aspects playing important role in the commercialization of university research within the university knowledge transfer and knowledge based society framework in Estonia. Knowledge sharing and commercialization depend on nature of organizational culture, as a part of internal environment. Two largest Estonian universities (University of Tartu and Tallinn University of Technology) are compared in various factors influencing knowledge transfer using document analysis and interviews. The present study has shown that knowledge transfer faces numerous issues, and in particular soft issues (individual mindsets and organizational values) may differ from university to university.

**Keywords:** university knowledge transfer, commercialization of university research, organizational culture, organizational values

**JEL Classification:** M14, I123, O31

## 1. Introduction

The role of universities and other higher education institutions in knowledge commercialization in countries with post-Soviet economies has been studied in very modest extent. This is a wider problem and analysis, carried out by Geuna and Muscio (2009) revealed that there are some features (beyond technological ones) related to the corporate partner's strategic and functional characteristics, which come to be decisive for success. Knowledge creation and transfer into industry, and contract and collaborative research are still weak in various respects.

Traditionally, teaching has been considered to be the role of the university since medieval times. Research became a legitimate function of the university in the late 19th and early 20th centuries. This turn was called as the first academic revolution (Etzkowitz 2004). Now, about 100 years later, the previous missions of universities – teaching and research – have been complemented by a third – contributions to economic and social development of the society. The adoption of this third mission

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of universities is referred to as the second academic revolution. For universities this means descending from the ivory tower and becoming a generator of economic wealth in society. This is mainly achieved by valuing the intellectual products of research as assets, and commercializing the results of research as a way of 'capitalizing' knowledge assets (Etzkowitz 2004). The intensive economic and social development after World War II led to the creation alliances between universities, government, and business for the production of 'useful knowledge' instead of the traditional view according to what researchers were autonomous in producing knowledge that was perceived as an 'endless' frontier assuring ever-increasing wealth (Stevans, Bagby 2001: 259). There is an outstanding experience of creation of such alliance in the recent history. Namely, the organization of networks, money, and talent around Stanford's research engine generated "Silicon Valley Fever". (Rogers, Larsen 1984). It is assumed that universities should take proactive role in the knowledge transfer in the modern society.

The entrepreneurial role of the universities is examined most often in traditional market-economy countries (Etzkowitz 2004; Etzkowitz, Webster *et al.* 2000). The role of national universities and other higher education institutions in developing technology and knowledge commercialization in countries with post-Soviet economies has been studied less, especially in the context of small countries.

The Lisbon Strategy was worked out for gaining economic growth in the EU, through the formulation of various policy initiatives to be taken by all EU member states. Ertl (2006) has expressed it as follows: "The discourse on the concept of economic competitiveness has changed the formulation of new EU policies in education and training, exemplified by a strong emphasis on educational indicators, benchmarks and quality controls." Here understanding factors influencing knowledge transfer are proper for this shift. Due to the systemic change from the command to the market economy, universities have gained a new role, especially in the situation where the Estonian firms need professional assistance for working out innovative products and develop innovative organizations. As universities had in the Soviet system mainly the role of educator, the corresponding culture may dominate in these organizations. Thus, there is need to find out characteristics of organizational culture that may influence on knowledge transfer processes addressed to industry.

The current paper aims to provide an explorative analysis of impact of organizational culture factors on the knowledge transfer within university research framework in a small country on an example of two largest Estonian universities - the University of Tartu (UT) and Tallinn University of Technology (TUT).

The paper is organized as follows. The next section is a brief overview of the previous investigations in the field of university-industry relations and its influencing factors. The third section outlines the societal and economic background of commercialization of the universities and the fourth is concentrating on organizational culture and value aspects in two largest Estonian universities. The fifth section is focusing on the analysis of main factors of commercialization at the

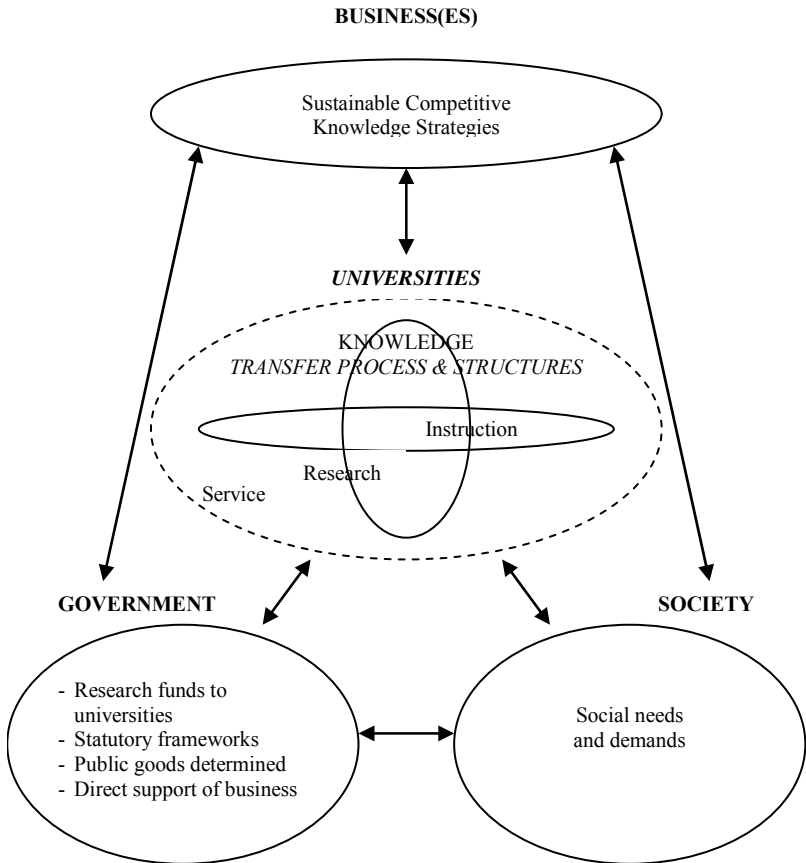
Estonian universities. Finally, section 6 presents some concluding remarks on the commercialization of university research.

## **2. Knowledge commercialization in university-industry relations on the angle of organizational culture**

Andrijevskaia *et al.* (2006) have insisted that it becomes an urgent necessity to think about how to keep the economy competitive and innovative in the long run, accumulating new knowledge and technology and finding a high-value-added niche in global division of labour. Universities are forced to find new ways generating income, on one hand. From the other side, enterprises depend significantly on ideas and technologies developed by universities. Thus, universities must increasingly to commercialize their skills and research, or in other words – to commercialize their knowledge transfer. In general the term 'commercialization denotes the process or cycle of introducing a new product into the market. In respect with university research, according to Mirowski and Horn (2005) two broad and opposite understandings about commercialization of modern scientific enterprise have been pointed out. First, commercialization is applying resources for so-called practical subjects, both in teaching and research. Second, commercialization is seen as technology transfer from basic research conducted in university setting to their presumed apotheosis as novel commodities in the commercial sphere (Mirowski, Horn 2005: 503-504). These approaches follow the different traditions that vary along orientation towards customers and activities. In our paper we follow the latter view by underlying that university research must be turned into novel products.

If we take into account the view that an organization is in a constant relationship with its environment, it follows that changes of it will affect the behavior of the organization and its members. There are several factors which play a certain role in the process of knowledge transfer. Stevens and Bagby (2001) have proposed the model where business agents, government, society, and universities are seen as the interdependent partners in knowledge transfer process (see figure 1).

Figure 1 illustrates that several stakeholders are involved in the knowledge transfer process. Universities are directly related to all of these partners – to business, government and society - and thus the internal processes within the universities may play significant role for the whole process of knowledge transfer. We can conclude that the central role is given to the universities to meet certain expectations. The factors influencing the cooperation between university and industry are often influenced by external factors, including social demand and request, statutory framework, proper research funding etc. But also a number of internal institutional factors, including organizational and/or management culture are influencing knowledge transfer.



**Figure 1.** Interdependence between business, government, society, and universities in knowledge transfer processes. (Stevens, Bagby 2001: 261)

Ellström (1983) has claimed that educational organizations tend to be strictly ordered and rational bureaucracies, characterized by a hierarchical and coordinated structure whereas being same time ambiguous and loosely coupled. Tirený (1988) argues that the perspective of organizational culture gives possibility to open various aspects how the university functions interact with its environment. Dill concludes according to the several studies: “Universities are characterized by lifetime employment, collective decision making, individual responsibility, infrequent promotion, and implicit, informal evaluation.” (Dill 1982: 307). These features allude on some problems that typical old fashion organizational culture may create. Thus, in the following discussion the potential barriers of cooperation will be explored.

First issue comes from historical perspective. Namely, the university's rules, culture and reward system has ensured that scientific employees focus on basic research and teaching. Thus, the majority of the university processes have not yet adjusted to the requirements of commercialization, such as receiving specific training and consultation, or obtaining temporary leave from the university to develop a business idea. The process of becoming entrepreneurial is well described by Clark (1998). In terms of policy-making, it would be useful to think about how to develop an entrepreneurial culture that embraces change, while sustaining the fundamental values of the institution.

The second issue is that the reluctance of academics to engage in commercialization activity younger generation is often really weak due to the attitudes and behaviours of superiors, such as professors or departmental heads (O'Shea *et al.* 2004). The experienced faculty members underestimate younger colleagues' capacity due to various factors. Third, there is a need for strong top-down leadership and policies that support and encourage the process of academic entrepreneurship and which merge entrepreneurial orientation objectives with the traditional academic values of the university. Fourth, it would be beneficial to invite more faculty members who have a background in industry. Blumenthal *et al.* (1996) surveyed 2,052 faculties at 50 universities in the life sciences field and found that industry-funded faculty members are more commercially productive (i.e. in terms of patent applications, new products brought to market). Fifth, the organizational structures might be not suitable for commercialization. For example Stevens and Bagby (2001) claim that university structures can be highly formalized or these have informal dependence upon between various areas of activities (study, research, marketing etc).

All the abovementioned aspects put impact on cooperation. But still, one important problem comes from the nature of academic work in general. Academic people often work as individuals. Cronin (2001: 132) illustrates it as follows: "The 'lone scholar' stereotype may well be fading in the age of 'Big Science'." But according to modern approaches, the success of an organization as a whole depends not on the performance of some remarkable individuals, but on the collective contribution of all members (Jacobs 1981). To achieve success, many people have to support the well-being of the organization, the organization should be aware of the desire of its members' to support their organization and there should be an understanding of the essence of collective work. For example, Østergaard (2009) pointed out in his study that knowledge was more likely transferred when interpersonal contacts (i.e. informal) and social networks were involved into university–industry contacts. (Østergaard 2009). Therefore we can conclude, that organizational issues and nature of academic work may form important aspects for knowledge transfer.

The concept of organizational culture could serve as a framework for relevant analysis because researchers as well as practitioners use the term organizational culture if they want to emphasize the idea that organizational matters, basic values, field of activities, and environment constitute as a whole. The definitions of organizational culture vary from a very short description given by Deal and Kennedy – "It's the way we do things around here" (1982: 13) – to more

sophisticated definitions, for example, as proposed by Schein (1985: 9). He asserts that organizational culture is a pattern of basic assumptions - invented, discovered, or developed by a given group as it learns to cope with its problems of external adaptation and internal integration - that has worked well enough to be considered valid and, therefore to be taught to new members as the correct way to perceive, think, and feel in relation to those problems. The latter definition involves several aspects and gives also ideas about functions of organizational culture- external adaptation and internal integration. Several taxonomies exist in order to capture the variation of mechanisms that form commonly shared, but unique combinations of values and behaviour patterns in organizations. The complex nature of culture leads to multidimensional approaches (see Detert 2000; van der Post *et al.* 1997; Lau, Ngo 1996) in analysis of impacts on knowledge transfer processes.

In light of this, organizational culture aspects must also be considered when the knowledge transfer via university research is the focus. For example, Smilor *et al.* (2007) underline the role of organizational culture when they analyze how to develop high-technology centers within university system because they consider that the specific culture (innovative) mediates relationships between external and internal environment. The other role of organizational culture is related to the knowledge creation process. Cronin (2001) has developed the model of knowledge management within academic organization. He puts emphasis on both academic and management sphere, indicating that culture is like a glue that integrates various roles and domains together. If the equilibrium between representatives of different roles is created, it supports the knowledge creation and transfer too. On the example of Massachusetts Institute of Technology and Yale University it was shown that technology transfer policy to succeed, it is not enough for a university to initiate top-down changes – a real cultural change within the university has to occur (Breznitz, O'Shea, Allen 2008).

Every organization has its own special organizational culture created collectively by its members, and this organizational culture provides guidelines for how organizational members should behave, and thus it is related to performance at the organizational and individual level. This is a mutual relationship because a certain type of organizational culture impacts the individual's performance on the one hand, and on the other, how organizational members actually perform influences the organizational culture. Studies have demonstrated the relationship that exists between performance and organizational culture (see for example, Chan *et al.* 2004, Denison *et al.* 2003; Ogbonna, Harris 2000; Kotter, Heskett 1992).

Organizational culture is influenced by the environment because members of an organization transfer values into the organization from outside environment. Organizational culture may open important issues because this phenomenon evolves values, assumptions etc what play also a significant role in the knowledge transfer. The concept of organisational culture could serve as the framework for the knowledge transfer analysis because researchers as well as practitioners use the term of organisational culture if they want to underline people may either support or

obstruct organisational efforts to bring these people together in order to pursue certain goals.

Why is it important to study organizational culture to improve effectiveness of knowledge management and sharing? We can suggest following reasons.

Firstly, if organizational culture/values are well understood, we can more successfully facilitate building awareness in organization about the knowledge that exists in organization, thus, making it explicit. Here we refer on conclusions by Bennet & Bennet (2008) and they admit that tacit knowledge resides beyond ordinary consciousness leads to the search to develop greater sensitivity to information stored in the unconscious to facilitate the management and use of tacit knowledge. Surfacing, embedding and sharing tacit knowledge are approaches for mobilizing tacit knowledge in support of individual and organizational objectives. According to Ipe (2003) knowledge sharing depend on nature of knowledge (i.e. explicit vs. tacit), motivation and opportunities to share, culture and work environment. He has proposed that the latter is the most critical factor in the process (Ipe 2003: 354). Understanding the differences in perception of organizational culture can quite likely give a better picture of the reasons for knowledge sharing not working as well as expected.

Tell (2000) emphasize committed interest, trust, shared language and cognitive maps for interpreting information as important elements for building favorable environment for knowledge sharing in networks. Combination in the network of action and reflection, supported by trustful relations, also was shown as important condition in supporting questioning of the norms, values and 'world-views' of the managers and has enabled the learning in the networks to move, over time, towards a higher level learning. It was shown that network participants have been able to consciously change some of their value-level concepts and beliefs as the result. Other evidence comes from Simonin (2004) who considers organizational culture as the phenomenon having moderating effect in the process of knowledge transfer. All in all, there is a ground for thinking that knowledge transfer is related to the organizational culture.

Secondly, knowledge sharing is more effective when peoples' differences are understood and taken care of; and, thirdly, organizational culture is shared within organization both consciously and unconsciously for example through every interaction between organizational members. Therefore we can conclude that aspects of organizational culture may play a substantial role in the processes of knowledge transfer to business and society.

### **3. Comparison of two Estonian universities: preconditions for commercialization**

Commercialization is the phenomenon that has very specific nature and therefore it is mainly analysed by using case- studies. For example, Breznitz, O'Shea, Allen (2008: 141) have shown that Massachusetts Institute of Technology (MIT) and Yale



University selected different strategies. Namely, two differences were detected for this objective. First, Yale chose high support–high selectivity initiatives and micromanagement of technology transfer, MIT chose to stay with in its entrepreneurial culture and implement up until recently a low support–low selectivity models in terms of the creation and development of start-ups.has developed successful knowledge transfer. Second, the selection of a region is a significant strategic issue because the universities can rebuild the existing relationships or to establish these with new regions.

The University of Tartu is an university with long traditions. In 1632 King Gustav II Adolph of Sweden signed the Foundation Decree for Academia Dorpatensis, so on the one hand, we can mark this date as the beginning of the history of the University of Tartu; and on the other., after the first World war it reopened its doors as an Estonian-language university in 1919 in the Republic of Estonia with Estonian as a fully recognised language of instruction. (*Facts about the History of the University of Tartu*). This last point is important because Tallinn University of Technology was also founded after the First World War. More precisely, in 1918, the Estonian Engineering Society opened an Estonian-based engineering school. That date has been recognized as the foundation of the Tallinn University of Technology (TUT History.). To date both universities have operated as national universities for almost ninety years, while the main difference is that the University of Tartu has had connections with scientists all over the world for more than three centuries. This university has been influenced by Swedish, Russian and Estonian cultures, and German settlers, such as the great Baltic landowners, and outstanding scholars have worked there.

Research funding changed from an administrative and planned system to a new system with a “science fund” based on scholarship and academic merits under the peer review process (Allik 2003). As a result of that process, universities became the main research institutions in many transition countries (Inzelt 2004; Glänzel, Schlemmer 2007), and faced the new challenge of serving society, which had already become rather topical in many western countries. One of the criteria of academic performance is the bibliometric indicator. This has had an impact on the structure and aim of research in universities. The University of Tartu was ranked higher in terms of ISI Web of Science publications (total number in 2004: 490 papers, 65% of the total Estonian contribution) and citations, and also had priority in Estonian public funding, obtaining approximately 48% of research grants and contracts (University of Tartu 2006). The share of industry contract research remains marginal. This is like ‘curiosity-driven research’. In that context, the research funding structure of the University of Tartu is quite similar to other (curiosity-driven) research universities in Europe (see Lambert 2003). This indicates that the Estonian universities follow the same path that western universities where problem of knowledge transfer is admitted.

Research is considered to be an area of activity for universities, and commercialization is the process of converting science and technology, new research or an invention into a marketable product or industrial process. The University of

Tartu and Tallinn University of Technology are both active in research and their performance is internationally approved. What has been presented by both universities can be exemplified in the area of economics and business (1). According to the data from the *Web of Science*, Estonian economics and business scholars have published 127 articles in indexed journals within the last ten years (as of 1 November 2008) and these articles have been cited 192 times. Scholars from the University of Tartu and Tallinn University of Technology have contributed respectively 44.9 and 33.1 per cent to this outcome (ISI Web of Knowledge). This means that more than three quarters of the respected academic publications on economics and business have been produced by scholars working at UT and TUT, and also that these universities have a comparable level of research. It shows that both universities are active in research and it meets to the international standards. Universities would have knowledge to share with industry, or in other words, there are building blocks for the co-operation.

Masso and Ukrainski (2008: 23) have pointed out that in general, institutions have received funding as follows: University of Tartu (80.6% of funds), Tallinn University of Technology (6.4% of funds), Research Institutes (10.6% of funds) and one museum (2.4% of funds). There are different ways that research can be funded, and Table 1 illustrates how different resources are allocated to different research institutions in Estonia. As we can see the large universities have received the major part of different resources.

**Table 1.** Structure of allocation of funding instruments across Estonian higher education institutions in 2005

Institution	Base financing	Infrastructure funds	Targeted finance	ESF grants	Centres of Excellence
University of Tartu	49.3%	44.1%	41.9%	49.6%	73.1%
Tallinn University of Technology	20.5%	23.5%	23.9%	18.9%	11.0%
University of Tallinn	4.3%	2.3%	2.3%	2.4%	
Estonian Agricultural University	7.3%	9.5%	7.2%	10.7%	
Estonian Academy of Music and Theatre	0.2%	0.2%	0.2%	0.2%	
Estonian Academy of Arts	0.1%	0.2%	0.2%		
Research Institutes	14.9%	15.8%	18.7%	12.7%	16.0%
Other	3.3%	4.4%	5.6%	5.5%	
Total, '000 EEK	74 463	77 400	230 450	85 945	

Source: Masso, Ukrainski 2008.

All in all, we can conclude that both universities have an internationally competitive level of research and a significant position in respect to research in Estonia. The results also show that important preconditions for the successful commercialization of university research are met in both cases, making an investigation of influencing

factors possible. We admit, however, that resources for research can be more plentiful at UT than at TUT.

#### 4. The organizational culture and values at UT and TUT

Two studies have made it possible to compare UT and TUT in terms of their values and practices. First, Jaakson (2008) collected student opinions about organizational values. As students are important stakeholders of universities, this study provides a good picture of organizational values. Second, within the framework of the *REDEL* project, Estonian universities were compared in terms of organizational values and culture. These studies evolved different roles and thus represent various opinions about values.

Jaakson's study compares core values and her data was collected using a combination of different methods. The students started by naming the three values that in their opinion best characterize the university. This was followed by small group discussions that tried to achieve a consensus on the three most distinctive values, and finally, they were asked to generate values that some students might potentially disagree with and recall situations that violated the value in question. Every student was asked to describe one critical incident in university-life related to one of the values. The incident could either be in line with the value or violating it. The results are presented in Figure 1.

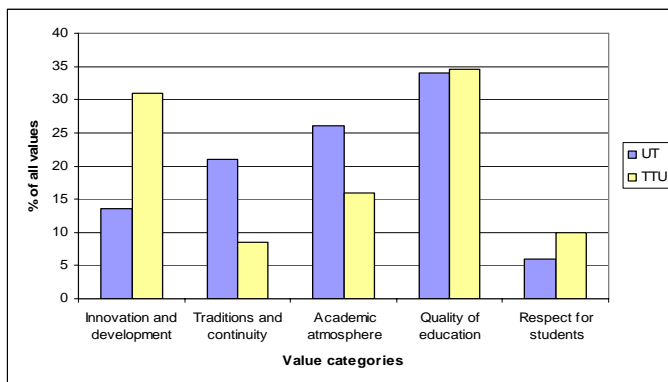


Figure 1. The frequency of mentioning different value categories in UT and TTU

The perceived value patterns differ from each other. Students from TUT pointed out that innovativeness and therefore modern applications, novel solutions and initiative are the most important values at their university (Jaakson 2008). Many also admitted that these values were the main motivators for deciding to study at TUT. For UT, two sets of values – traditions and continuity, academic atmosphere – constitute the values that distinguish it from other universities in general and TUT in particular. Two out of three students, which is a notably high proportion given the small variety of the wording in the category, mentioned tradition as the core value at UT. Secondly, aspects of academic atmosphere were attached to UT, including unity, devotion, teamwork, academic orientation and the particular spirit at UT.

## **5. Factors of commercialization at the universities: empirical analysis**

Empirical analysis was conducted in order to compare understandings about the commercialization of university research and its influencing factors. The interview method was chosen and the sample consists of representatives from both universities and from two companies that have a collaborative relationship with both universities. Therefore, the potential exists for discovering what factors determine cooperation between universities and companies.

The relevant administrators from the universities were the Senior Specialist in business relations from UT (respondent A), the Head of the Centre of Technology and Innovation (respondent B) and the Head of the Department of Research and Development from TUT, (respondent C) The representatives of the companies, having contracts with both universities were the CEO of ESTIKO PLASTAR AS (respondent D) (Estiko Plastar's vision is to be the first choice producer of packages and packaging materials in the target market), and the environmental manager from Estonian Energy (respondent E) (Estonian Energy is an international energy company with an integrated value chain).

Several of the interview questions focus on commercialization and co-operation between universities and companies. The role of geographical location is also asked because it gives possibility to clarify whether the external environment or internal environment/organizational culture play more important role in the university-industry relationships. Some illustrative answers are presented in Table 2.

The common opinion of the respondents was that geographical location does not play a significant role in university-industry relationships and commercialization. These findings do not support Brenitz *et al.* (2008) findings, described above. It seems that expertise and the profile of the activities are more important than region. There was one exception when respondent A mentioned the importance of infrastructure – UT is located 200 kilometres from international airports, and this can indeed be a limitation (barrier?) for international collaboration. Although Tartu has also flights to Stockholm and Riga since August 2009. Another interesting aspect was mentioned by respondent E, who mentioned that projects in the capital city are a bit more costly than outside of it. This sounds logical because most costs can be higher in capital cities, and under certain conditions this may lead to differences in

regional conditions. In general, we can conclude that neither companies nor universities mention that geographical location (i.e. region) plays a significant role in the opportunities and forces for the commercialization of university research in a small country.

**Table 2.** The respondents' opinions about the role of behavior patterns location in the commercialization of academic research

<b>Representatives of universities: variation of opinions:</b>	<b>Representatives of companies:</b>
TU, (respondent A) location is an important issue because of infrastructure (i.e. lack of international airport, port); traditional cooperation areas are more important than geographical regions.	(respondent E): The geographical location is not an issue. We collaborate with all the universities and the most important thing is what kind of expertise the university has. (respondent E): The relative cost of research projects is a bit higher in Tallinn.
TUT, (respondent B): location is not an issue and location ≠ region, the profile of companies, historical traditions. (respondent C): historical traditions are more important than location.	(respondent D): all the other factors are more important than geographical location.

Source: Based on interviews.

The other set of questions was targeted towards organizational culture. Here the respondents from the companies were asked to compare the working culture in both universities. Here opinions show that the work culture is seen as being similar, with only minor differences. Respondent E expressed it as follows: "In general the work culture is unified, but sometimes it seems that people from Tartu do not rush so much as people in Tallinn. When comparing Estonian working speed and culture against these aspects in the USA, then the differences between Tartu and Tallinn are minimal." Respondent D stated: "There are no differences in the working culture; differences exist between the mindsets of different people." Thus, it turns out that working culture does not distinguish the possible collaboration needed for the commercialization of university research. We can propose that a uniform sector-based working culture exists, although Trice and Beyer (1993) refer to local trends among others as a source of new ideologies in the organizational environment. Estonia is a homogeneous region in this respect. Here we can conclude that the internal environment (organizational culture) is more important than external environment in respect with university-industry co-operation.

There was a clear difference between the opinions regard with the substance of organizational culture. Both company representatives mentioned that UT and TUT present different values. For example, Respondent E said that the main difference is that Tartu's scholars are oriented towards theoretical knowledge and Tallinn's faculty members are oriented towards the development of technical solutions. Respondent D asserts that with UT we mostly have contacts related to fundamental research

(generation of ideas), while TUT mostly collaborate on research for the application of ideas. This seems like a minor matter, but if we put this into the context of organizational values, it can be interpreted as a difference in organizational culture and values. The previous section showed that UT is more oriented towards traditions, while TUT towards practical issues.

The empirical research tabled another important issue beside the main theme of this study. Both company representatives said that there is a very urgent need for a database of general information about applied research possibilities. Here applied research is seen as the counterpart of basic research. At the same time, the university representatives did not see this as such a necessary step, and instead they emphasised the protection of intellectual property. This difference of opinion here seems to be due to different interests. The representatives of companies wish get more information, while university representatives want to get a better position in the commercialization process. Here the organizational value “*opened-closed to the society*” can be discussed. If the closeness is dominating the universities may go far away from companies and commercialization cannot happen. It is also dangerous for the universities because respondent E has expressed the experience that due to the lack of comparable information sometimes universities do not produce to industry customers new, special, and innovative solution merely run over the typical and old materials. If the industry customer would know about the possibilities at hand, they can be better prepared for negotiations. The educated customer pushes universities to work creatively in order to meet expectations.

One handy possibility for organizing information system of applied research can be found from The Estonian Research Information System (Estonian Research Information System). This concentrates information from research and development institutions, researchers, research projects and various research results. The Estonian Research Information System (ETIS) is also an information channel for submitting and processing grant applications and for submitting and confirming project reports. Although ETIS reflects all the grants Estonian R&D institutions have gained, there is still one blind area in this system. Namely, information about applied research (i.e. direct contracts between R&D institutions and other organizations) is not generally presented to the public. For example, faculty members at the University of Tartu declare this information in their personal annual report, but this information is not transmitted to the public information domain. This is a comprehensive system and it would be supplemented with the section of applied research.

## **6. Conclusions**

The two largest Estonian universities, which are located in different regions, have many similarities in terms of the existence of the preconditions for the knowledge transfer or in other words commercialization of their academic research. Therefore, studying the commercialization of research in these universities raises questions about the general framework characterizing the development of the universities' third mission in this small post-Soviet country. These questions are common to universities in neighbouring countries, due to their similar historical backgrounds.

The factors influencing the cooperation between university and industry are often influenced by external factors, including social demand and request, statutory framework, proper research funding etc. But also a number of internal institutional factors, including organizational and management culture, nature of academic work are influencing knowledge transfer. Based on our study we can conclude that:

1. Universities in a small country do not differ in terms of the commercialization of research due to geographical location;
2. Differences that do exist are related to organizational values and traditions;
3. Working culture and personal relationships/communication may play significant role in the process of knowledge transfer.
4. There is a need for development information system that provides overview of applied research (university – industry joint research actions and projects).

In light of this, the values held by universities are discussed. Our research has shown that on the one hand, values and beliefs that were introduced as part of a long-term development strategy influence the understanding inside universities, while on the other hand, they shape the reputation and public image of universities for organizations and people in the community outside the university. Thus, one barrier to commercialization could be stereotypical attitudes to academic life.

The analysis of university practices and the relevant elements of the preconditions for the knowledge transfer from universities to industry help us develop suggestions for how universities can improve the quantity and the quality of the process.

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**KOKKUVÕTTED**

**ZUSAMMENFASSUNGEN**

**SUMMARIES**

# MAJANDUSPOLIITILISED VÕIMALUSED ERANDVALDKONDADE REGULEERIMISEKS VÄIKERIIGIS BALTI RIIKIDE NÄITEL

Diana Eerma  
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## Sissejuhatus

Käesoleva artikli eesmärgiks on selgitada majanduspoliitilisi võimalusi erandvaldkondade riikliku reguleerimise ja konkurentsi järelevalve korraldamiseks Balti riikides teoreetilise analüüsi ja mõnede Euroopa Liidu riikide kogemuste alusel.

Küsimus on siin eelkõige riigi rollis võrgustikega seotud loomulike monopolide puhul. Tegemist on konkurentsipoliitika seisukohalt erandvaldkondadega mitmesuguste varustus- ja jaotusvõrgustike tõttu. Küsimusele, kuidas peaks olema korraldatud konkurentsiameti ja riiklike regulaatorite (vastavalt energia-, gaasi-, side- ja raudteetranspordi turu puhul) vaheline tööjaotus on võimalik leida mitmeid lahendusi. Ühesugust lahendust ei leia selles osas ka Euroopa Liidu riikides.

## Sektoraalse reguleerimise ja konkurentsipoliitika seosed erandvaldkondade riiklikul reguleerimisel

Reeglina peetakse konkurentsi asendamist riikliku regulatsiooniga majanduslikult otstarbekaks vaid erandvaldkondades ja sedagi loomulike monopolide tuumade, nt. mitmesuguste varustus- ja jaotusvõrgustike puhul. Siiski tuleb kohe rõhutada, et see puudutab vaid monopolide võrgustike haldamist, mitte aga nende kasutamist opereerimise mõttes. Lisaks on tehnoloogia areng võimeline õnestama isegi loomulike monopolide tuuma, nagu näitab mobiilside turg.

Reguleerimise ja konkurentsipoliitika institutsionaalsete vormide osas on teadlastel erinevaid arvamusi, mis tuleneb ka asjaolust, et seosed nende kahe valdkonna osas pole alati selgepiirilised. Põhjus on selles, et nimetatud institutsioonide tegevuse eesmärgid osaliselt kattuvad, kuid need pole identsed.

Mõnede autorite arvates (Michael 2006) on konkurentsipoliitika objektid järgmised: tarbijakaitse küsimused (tarbijatele edastatav informatsioon, kvaliteedi kontroll miinimumstandardite kehtestamise kaudu, salajased hinnakokkulepped ja fikseeritud jaehindade kehtestamine tarnijate või hulgimüüjate poolt), ressursside allokatsioon (aus juurdepääs turule, turule sisenemise barjäärid, erandlikud tehingud, tööjõu piirangud), turujõud (monopolid ja kartellikokkulepped, ennetav tegevus olulise turujõu koondumise osas), mikroökonomilise reformi aspekt (valitsuse majanduspoliitika mõjutamiseks teatud majandusharudes hindasid alandama) ja valitsuse tegevuse mõjud (konkurentsineutraalsus ja seadusandlik tõhusus). Kirjeldatud konkurentsipoliitika laiast tegevusspektrist saab järeldada, et eesmärkide kataloog on samuti laiaulatuslik. Richard A. Posner (1976) keskendub enam efektiivsuseesmärgile ning osad autorid kombineerivad efektiivsuseesmärgi tarbija kaitse eesmärgiga (Kirchner 2004).

Reguleerimise puhul seatakse esikohale peamiselt efektiivsus, kuid ei välistata siiski ka tarbija kaitse või laiemaid sotsiaalseid eesmärke. Seega on konkurentsipoliitika ja riiklik reguleerimine osaliselt alternatiivid, aga samas ka teineteist täiendavad tegevuse suunamise vahendid. Rivaliteet konkurentsipoliitika ja reguleerimise vahel võib ilmneda tegevusharu dereguleerimise protsessis või endise riikliku monopoli ümberkujundamisel. Praktikast peetakse sellise situatsiooni tekkimist võimalikuks just konkurentsiameti ja sektorispetsiifiliste regulaatorite vahel (*Ibid.*).

Tuleb silmas pidada, et konkurentsiametitel ja sektorite regulaatoritel on erinevad pädevused. Esimestel neist on enam kompetentsust relevantsete turgude osas, hindamaks võimalikku konkurentsile ohtlikku turusituatsiooni ning turujõu kontsentratsiooni. Teiste puhul on olulised eelkõige teadmised reguleeritavate tegevusvaldkondade toodete ja teenuste tehnilistes aspektides (The relationship between... 2005).

Vaatamata olulisele erinevusele kompetentsi osas peaks reguleeritavates tegevusharudes siiski esmatähtsateks pidama järgmisi riiklikke ülesandeid (*Ibid.*).

- Tehniline reguleerimine, mis seisneb standardite kehtestamises ja seires, litsentside korraldamises ning sanktsioonide rakendamises nii, et see tagaks ühilduvuse privaatsuse, turvalisuse, usaldatavuse, finantsstabiilsuse ja keskkonnakaitse alaste printsiipidega.
- Hulgemüügi reguleerimine: tagamaks mitte-diskrimineerivat juurdepääsu peamistele jaotusvõrkudele.
- Jaemüügi reguleerimine: meetmed leevendamaks monopolistlikku hinnakujundust või käitumist jaetasandil.
- Avaliku teenuse reguleerimine: meetmed kindlustamaks, et tarbijad vaatamata oma sotsiaalsele staatusele, sissetulekutele ja/või geograafilisele asukohale omaksid juurdepääsu hüvivatele, mida võib käsitleda spetsiifilist ühiskondlikku väärtust omavaks.
- Vaidluste lahendamine: kvaasi-juriidiline võim võib anda vaidluste lahendamisel kiiremaid tulemusi võrreldes mitte-spetsialiseeritud kohtuga.
- Konkurentsi üldjärelevalve: kontrollimaks konkurentsi kahjustavat tegevust ning ettevõtete ühinemisi.

Konkurentsipoliitika kitsamas tähenduses on *ex post* järelevalve turu struktuuri ja ettevõtete turukäitumise osas. Konkurentsipoliitika laiemas mõttes sisaldab ka *ex ante* tegevust turu tulemuste reguleerimisel. Need seosed ja kirjeldatud ühised riiklikud ülesanded annavad aluse konkurentsi järelevalve *ex ante* ja *ex post* funktsioonide koondamiseks ühte institutsiooni.

Ajalooliselt on riiklikud regulaatorid sageli olnud seotud ministeeriumitega, millised korraldasid või ka korraldavad vastavat tegevusharu. Sellest tulenevalt on teadvustatud ka probleemi, et reguleerivad ametkonnad võivad oma tegevust korraldada reguleeritavate ettevõtete huvides. Teooria (*capture theory*) kohaselt (Bernstein 1955) kalduvad monopole kontrollivad riigigorganid sageli esindama pigem ettevõtete kui tarbijate huve ning see oht on tänapäevase arusaama kohaselt

suurem just riiklike monopolide korral. Siin on ettevõtete juhtide seosed valitsusametnike ja poliitikutega tugevamad kui erafirmade puhul. Riigifirmades võivad jääda kasutamata ka eramajanduses ilmnevad täiendavad säästumotiivid ja sellega efektiivsuseelised. Suurem iseseisvus nii poliitilisest võimust kui ka reguleeritavast sektorist on oluline eeldus reguleerimisprotsessi sihipäraste tulemuste saavutamisel. Paljude OECD riikide positiivsed näited annavad tunnistust sellest, et reguleerivate institutsioonide iseseisvus on suurendanud nende tegevuse efektiivsust (The relationship between... 2005).

Riikliku reguleerimise protsessile avaldavad otsustavat mõju sellised nõuded nagu reguleerivate institutsioonide iseseisvus ja piisav pädevus, nende tegevuse läbipaistvus, sidusus, prognoositavus ning arvestuslik kohustus. Nimetatud nõuete järgimisel on leitud olevat oluline roll riiklike regulaatorite tegevuse efektiivsuse tagamiseks (Berg 2009). Neid nõudeid on ilmselt võimalik paremini täita ühes terviklikus järelevalve institutsioonis. Funktsioonide ja ülesannete killustamine mitme institutsiooni vahel võib vähendada tegevuse läbipaistvust ja prognoositavust ning samuti seada ohtu üksikute valdkondade riiklike regulaatorite sõltumata.

Erandvaldkondade riikliku reguleerimise võimalike arengustenaariumite selgitamiseks Balti riikides võetakse vaatluse alla regulaatorite erinevad mudelid mõnedes arenenud Euroopa Liidu riikides, kus on olemas mitme aastakümne kogemused.

### **Võimalikud mudelid erandvaldkondade riiklikuks reguleerimiseks**

Riiklikel regulaatoritel, olenemata nende struktuurist ja asukohast riiklikus hierarhias, on järgmised põhiülesanded (*The role of the regulatory authorities* 2004):

- ühendusvõimsuste läbilaskevõime juhtimine ja jaotamine ning vastavasisuliste kaebuste menetlemine,
- liitumistasude meetodika kooskõlastamine ja liitumistasude kontrollimine,
- turgu valitsevat seisundit omavate energia-, võrgu- ja/või kütuseettevõtjate tegevuse kontrollimine ja nende poolt müüdava produkti hindade kooskõlastamine,
- võrguettevõtja edastamis- ja jaotamisteenuse tariifide kooskõlastamine ning kontrollimine,
- tegevuslubade väljastamine või sellest keeldumine, järelevalve teostamine ja tegevuslubade kehtetuks tunnistamine,
- asjakohase informatsiooni publitseerimine.

Sektorispetsiifiliste valdkondade riiklik reguleerimine võib riigiti olla korraldatud erinevalt.

Võrdlevas uurimuses Suurbritannia, Prantsusmaa ja Saksamaa riiklike reguleerivate institutsioonide kohta leitakse, et nimetatud riikides oli erandvaldkondade riiklikuks reguleerimiseks kasutusel põhimõtteliselt ühesugune mudel, mis toetus oluliselt konkreetse majandusharu eestvedamisele, kuni 1960ndate teise pooleni. Olulisemad

muutusid toimusid erinevate reformide tulemusena 1980. aastate keskpaigaks (Thatcher 2007). Täpsema vaatluse alla on otstarbekas võtta Saksamaa ja Hollandi riiklike regulaatorite mudelid, sest nendes riikides on positiivsed kogemused ümberkorraldustest viimase kümnendi jooksul.

**Saksamaal** on riiklikud regulaatorid elektrienergia, gaasi, telekommunikatsiooni, posti ja raudtee osas integreeritud eraldiseisvaks föderaalseks institutsiooniks – Föderaalne Võrgustike Agentuur (*Federal Network Agency*, FNA) – mis paikneb Föderaalne Majandus- ja Töoministeeriumi tegevusalas ning mille peakorter asub Bonnisis. Saksamaa näitest saab järeldada, et ühendatud haruregulaatori mudeli kasutamine erandvaldkondade riiklikuks reguleerimiseks kindlustab regulatsiooni-protsesside efektiivsema toimimise. Rõhutada tuleks selle mudeli eeliseid võrreldes isoleeritud haruregulaatoritega.

**Hollandis** on valitsus loonud Konkurentsiameti (NMa) sees vastavad kohad sektorite reguleerimiseks. Energiasektori jaoks on Energia Regulatsiooni Büroo (DTe), mis asub Hollandi Konkurentsiameti üldjärelevalve all. Nimetatud büroo vastutab Elektrienergiaseaduse (1998) ja Gaasiseaduse (2000) täitmise ning järelevalve eest. 2004. aastal moodustati analoogiliselt teine koda Transpordi Regulatsiooni Büroo samuti Konkurentsiameti juures (*The relationship between...* 2005).

Selline lahendus annab võimaluse ühendada sektoraalsed eriti spetsialiseeritud teadmised konkurentsiametis, kus tähelepanu on enam kontsentreerunud konkurentsi edendamise teemale laiemalt. Kirjeldatud institutsionaalne struktuur aitab kindlustada ühilduvust konkurentsiseaduse rakendamisel. Juhul kui konkurentsiamet on vastutav konkurentsiseaduse rakendamise eest osades valdkondades ja haruregulaatorid vastavates sektorites, siis on kooskõla saavutamine keerulisem ülesanne.

Seega on siin põhimõtteliselt võimalik eristada kolme institutsionaalset mudelit:

- 1) isoleeritud haruregulaatorid ja konkurentsiamet,
- 2) integreeritud haruregulaatorid ja eraldiseisev konkurentsiamet,
- 3) ühtne konkurentsi järelevalve ja reguleerimise institutsioon.

Olenemata sellest, millise mudeliga on tegemist, tuleb rõhutada ressursside parima kasutamise olulisust. Samuti on tähtis järgida põhimõtet, et riikliku reguleerimise ja järelevalve institutsioon ei muutuks sõltuvaks tegevusharust.

### **Siirderiikide kogemused erandvaldkondade riiklikul reguleerimisel**

1990. aastatel, kui siirderiigid alustasid oma majanduste restruktureerimist ja erastamisprotsessi, võeti eeskujul riikidest, millised omasid pikaajalisi kogemusi infrastruktuuriga seotud tegevusharude ja monopoolsete sektorite reguleerimisel ning kus olid olemas ka traditsioonilised turumajandust toetavad tugevad õiguslikud institutsioonid. Nendeks riikideks olid Suurbritannia, Kanada, USA ja Austraalia. Probleemiks siirderiikide puhul oli asjaolu, et riigiettevõtete ümberkujundamine

teenis sageli kahjuks poliitilisi eesmärke jättes tähelepanuta turutõrgete ületamise ja lahendamise eesmärgi (Guasch *et al.* 1999).

Siirderiikides on sektorispetsiifiliste valdkondade erastamise ja reguleerimise protsess kulgenud erinevalt.

Uurimuses väike- ja arenguriikide elektrienergia ning telekommunikatsiooni sektori regulatiivsete institutsioonide kohta leitakse, et viimase paarikümne aasta jooksul on kujunenud välja nii-öelda uus standardmudel nende sektorite riiklikuks reguleerimiseks. Sellesse mudelisse on oluliselt aktiivsemalt kaasatud konkurentsi elemendid, erakapital ning monopoolsed elemendid (nt võrgustik/infrastruktuur) on võetud eraldi vaatluse alla (Stern 2000).

Siirderiikidel on erandvaldkondade reguleerimise institutsioonide struktuuri ja täitevprotsesside osas veel suhteliselt palju arenguruumi.

### **Erandvaldkondade reguleerimise ja konkurentsipoliitika järelevalve institutsioonide areng Balti riikides**

**Lätis** oli erandvaldkondade riiklik reguleerimine korraldatud mitmete haruregulaatorite kaudu kuni 2001. aasta oktoobrini. Energia Reguleerimise Nõukogu oli institutsioon Majandusministeeriumi juhtimise all vastutamas energiasektori reguleerimise eest. Transpordiministeerium ja selle poolt juhitud Telekommunikatsiooni Tariifide Nõukogu teostas reguleerimist telekommunikatsiooni sektoris. Postiteenuse reguleerimist teostas Transpordiministeeriumi sideosakond. Raudtee Administratsioon juhitud Transpordiministeeriumist reguleeris raudtee sektorit.

Pärast nelja-aastast perioodi õigusliku valdkonna arendamisel loodi uus ühendatud regulatiivne institutsioon, mis võttis üle eespool nimetatud nelja eraldiseisva regulatiivse institutsiooni ülesanded. Integreeritud haruregulaator (*Public Utilities Regulation Commission*) on Majandusministeeriumi haldusalas iseseisev struktuuriüksus, mis viib ellu seaduses sätestatud ülesandeid ning millise nõukogu nimetatakse Seimi poolt.

**Leedus** on toimunud areng analoogiliselt Lätiga. 1997.aastal asutati Rahvuslik Hindade Kontrolli ja Energeetika Komisjon (*National Control Commission for Prices and Energy – NCC*), milline reguleerib elektri- ja termalenergia, keskkütte ja gaasi, vee ning transpordi sektoreid. Toimus järkjärguline üleminek üksikutele haruregulaatoritelt ühendatud multi-sektorilisele mudelile. Nimetatud riiklik regulaator tegeleb tariifide kehtestamisega, turulepääsu reguleerimisega (litsentsid tegevuseks) ja teenuse kvaliteedi järelevalvega.

**Eestis** olid riiklike haruregulaatorite funktsioonid kuni 2008. aastani jagatud järgmiselt:



- Sideamet tegutses tehniliselt piiratud ressursside (raadiosagedused ja telefoninumbri) kasutuse korraldaja ja sideturu (telekommunikatsiooni ja postiside) regulaatorina.
- Energiaturu Inspeksioon oli elektri- ja energiaturu regulaator.
- Tehnilise Järelevalve Inspeksiooni ülesandeks oli erinevates tehnikavaldkondades arendus-, teavitus- ning järelevalvetegevus.
- Raudteespektsiooni vastutuselaks oli raudteealane riiklik järelevalve (tehniline kontroll, lubade ja tunnistuste väljastamine, läbilaskevõime jaotamine).

Konkurentsiameti ülesandeks oli konkurentsialane järelevalvetegevus ja koostöökontroll. Kirjeldatud tööjaotus Eesti Konkurentsiameti ja vastavate ametitena haruregulaatorite vahel kehtis 2008. aasta alguseni. Senine Konkurentsiameti struktuur oli juba nii mõneski mõttes positiivsete eeldustega uue organisatsioonilise korralduse loomiseks, mis ühendaks konkurentsialast järelevalvet ja vastavate erandvaldkondade riiklikke regulaatoreid ühendatud institutsiooni.

Rahvusvahelises kirjanduses on diskuteeritud konkurentsiameti ja riiklike haruregulaatorite ühendamise otstarbekuse üle ja nagu eelnevalt esitatud näidetest selgus, ei pea vastavaid positiivseid näiteid kaugelt otsima. Väikeriigis võiks ühendamine aidata tugevdada konkurentsipoliitika üldist staatust ja haldus-suutlikkust. Kõigil regulaatoritel on vähemalt üks ühine ülesanne – kontroll turguvalitsevate ettevõtete üle, olgu see siis kas *ex post* või *ex ante*. Teemakohase analoogia võib siin leida finantssektori osas ühendatud finantsinspektsioon kujul.

## Järeldused

Sobiva institutsionaalse mudeli leidmiseks erandvaldkondade riiklikuks reguleerimiseks peaks arvesse võtma järgmisi asjaolusid. Esiteks, et isoleeritud haruregulaatorite puhul on tegemist märkimisväärse keskendumisega konkreetse sektorispetsiifilise ekspertiisi osale vastava infrastruktuuri ja tehnoloogia arendamisel. Teiseks, ühe integreeritud haruregulaatori rakendamine mitme riikliku regulaatori asemel võimaldab kulusid jagada ning kasutada efektiivsemalt napp ressursse. Kolmandaks, koostöö ühendatud reguleerimis-institutsiooni võimaldab ühendada kattuvaid teadmisi ja kogemusi reguleerimise protsessis. Oluline on siinjuures rõhutada, et antud mudeli puhul on ilmselt lihtsam vältida olukorda, kus riiklikud regulaatorid võivad sattuda reguleeritava tegevusharu juhtide mõju alla. Seega suureneb reguleeriva institutsiooni iseseisvus.

Kokkuvõttes saab järeldada, et ühendatud institutsioonil on enam võimalust vähestel ressursside ja intellektuaalse potentsiaali paremaks kasutamiseks, administratiivse suutlikkuse tõstmiseks ning sisemise kooskõla saavutamiseks regulatiivsete ja konkurentsialaste otsuste rakendamisel.

Lähtudes eeltoodud põhjustest võib järeldada, et ka Läti ja Leedu puhul oleks otstarbekas riiklike regulaatorite ühendamine konkurentsiametiga. Viimane peaks võimaldama tõsta nii konkurentsiameti üldist positsiooni majanduspoliitikas kui ka riigi kompetentsust selles keerukas ja interdistsiplinaarses valdkonnas.

# EESTI AVALIKU SEKTORI KESKKONNAKULUTUSED MAJANDUSKRIISI PERIOODIL

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## Sissejuhatus

Hiljutine majanduskriis on Eestis kaasa toonud ulatuslikud kärped avaliku sektori kulutustes. Riigieelarve tasakaalu hoidmiseks vähendas Eesti Valitsus 2008. aastal riigieelarvelisi kulusid 3,4%. Keskkonnaministeeriumit mõjutasid eelarvekärped koguni 7,5% ulatuses. 2009.a. korrigeeriti eelarveid seoses maksutulu vähenemisega veelgi.

Avaliku sektori keskkonnakulutused on riigi keskkonnapoliitika oluliseks instrumendiks. Kärped kriisiperioodil võivad tõsiselt ohustada pikaajaliste keskkonnapoliitiliste eesmärkide saavutamist. Aasia finantskriisi ajal toimunud protsesside analüüs on näidanud, et keskkonnakulutused kannatavad kärpete all võrreldes teiste avaliku sektori valdkondadega enam (Vincent *et al.* 2002). Vincent tõestab, et näiteks Indoneesias vähenesid keskkonnakulutused avaliku sektori keskmisega võrreldes palju rohkem. Võrdlus teiste Aasia riikidega näitab, et keskkonnakulutuste langus Indoneesias ületas samal perioodil toimunut Malaisias, Tais ja Lõuna-Koreas. Artiklis nenditakse küll keskkonnakulutuste erinevat käitumist riigiti kriisiperioodil, kuid ei analüüsita riikidevaheliste erinevuste põhjusi ega vastavaid keskkonnapoliitikaid.

Eesti on pidanud riigieelarve tasakaalu üheks oma poliitika nurgakiviks alates iseseisvuse saavutamisest ja on olnud avaliku sektori kulude kontrolli all hoidmisel ning rahanduse stabiilsuse saavutamisel paljudest Kes- ja Ida-Euroopa riikidest edukam (Aristovnik, Bercic 2007). Seetõttu on Eesti avaliku sektori keskkonnakulutused kriisiperioodil huvitavaks uurimisobjektiks. Käesoleva artikli eesmärk ongi analüüsida Eesti avaliku sektori keskkonnakulutusi majanduskriisi ajal ja varasemate keskkonnapoliitiliste otsuste mõju kulutuste mahule.

## Keskkonnakaitse rahastamine Eestis

Eesti on kasutanud majandushoobasid keskkonnakaitsete eesmärkide saavutamiseks alates iseseisvumisest. Näiteks suunatakse laekumised keskkonnatasudest sihtotstarbeliselt keskkonnakaitseks. Lisaks on kasutatud ja kasutatakse Eestis keskkonnakulutuste rahastamiseks ka teisi allikaid, nagu näiteks EL-i struktuurifondid perioodil 2004-2006 vastavalt Ühtsele programmidokumendile ja Elukeskkonna arendamise rakendusavale perioodiks 2007-2013.

Nii kogu Eesti keskkonnapoliitika rahastamisel kui peamise põhimõtte „saastaja maksab” elluviimisel on tähtis koht keskkonnatasudel. Keskkonnatasude eesmärgiks on ära hoida loodusressursikasutusega kaasnevat keskkonnakahjustusi ja vähendada heitmete emissioone ja jäätmete teket. Keskkonnatasud makstakse riigi-

eelarvesse, kust nende abil rahastatakse tegevusi keskkonnaseisundi parandamiseks, loodusressursside taastamiseks ja keskkonnakahjude likvideerimiseks.

Alates 1994-st aastast on keskkonna saastamise, maavarade kaevandamise ja vee erikasutuse eest makstud üle 6 miljardi krooni (Keskkonnaülevaade 2009). Ligikaudu 76% sellest on laekunud riigieelarvesse ja ülejäänud kohalikele omavalitsustele. Algselt olid keskkonnatasude määrad majandusarengu kiirendamise eesmärgil ja reaalselt maksevõimet arvestades madalad.

Majanduse kasvades osutus võimalikuks pöörata keskkonnakaitsele suuremat tähelepanu. Alates 1996. aastast on saastetasu määr tõusnud 20% ja ressursikasutus- tasude määrad 5-10% aastas. 2005. a. otsustas Valitsus algatada ökoloogilise maksureformi, mis seisneb keskkonnatasude suurendamises ja tööjõuga seotud maksude (tulumaks, sotsiaalmaks) vähendamises. Ökoloogilise maksureformi oluliseks põhimõtteks on, et summaarne maksukoormus (maksude suhe SKP-sse) ei tohi kasvada. Reformi esimesel etapil vähendati 2005. a. üksikisiku tulumaksu 26-lt protsendilt 24-le. Järgmisel aastal (2006) tõusid kõik tähtsamad keskkonnatasud. Vastavalt ökoloogilise maksureformi põhimõttele oli tõusu põhjuseks keskkonna- kaitse majandushoobade efektiivsemaks muutmine. Keskkonnatasude tõus andis selge sõnumi nii tootjatele kui tarbijatele keskkonnakasutuse muutustest suurema jätkusuutlikkuse suunas. Tõus jätkus ka perioodil 2007-2009.

### **Andmed avaliku sektori keskkonnakulutuste kohta**

Statistikaamet esitab üldistatud andmeid valitsemissektori kulude ja tulude kohta. Andmed on saadaval perioodi 1995-2008 kohta ([www.stat.ee](http://www.stat.ee)) ja klassifitseeritud vastavalt ÜRO poolt sätestatud valitsuse funktsioonidele<sup>1</sup> (*The United Nations Classification of the Functions of Government*). Üheks valitsuse funktsiooniks on keskkonnakaitse ja negatiivsete välismõjude vähendamisele suunatud tegevused.

Keskkonnakaitse on jagatud kuueks alamkategoriaals:

- jäätmekäitlus;
- heitvee käitlus;
- saaste vähendamine;
- bioloogilise mitmekesisuse ja maastiku kaitse;
- teadus- ja arengutegevus keskkonnakaitstes;
- muu keskkonnakaitse.

Vastavalt ülaltoodud jaotusele esitatud andmed võimaldavad jälgida riigi ja kohalike omavalitsuste keskkonnakaitsekulutusi 14 aasta lõikes.

### **Eelarvekärped kriisiperioodil**

Riigi kulutused keskkonnakaitsele 2007.a olid jooksevhindades 1450 miljardit krooni. Kriisi esimesel aastal (2008) suurenesid kulutused 2083 miljardi kroonini.

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<sup>1</sup> <http://unstats.un.org/unsd/cr/registry/regcst.asp?Cl=4>

2007. ja 2008. aasta keskkonnakulutused moodustasid riigieelarve kogumahust vastavalt 2,3 ja 2,8 protsenti.

Kohalike omavalitsuste kulutused keskkonnakaitsele olid 2007. a. 907 miljonit krooni, olles riigi keskkonnakulutustest ligikaudu 40% väiksemad. Analooiliselt riigi kulutustele suurenesid 2008. a ka kohalike omavalitsuste keskkonnakulutused, kasvades 945 miljoni kroonini. Siiski tuleb märkida, et jooksevhindades kohalike omavalitsuste keskkonnakulutused 2008. a võrreldes 2007. aastaga vähenesid, moodustades 2007.a 3,4 ja 2008.a 3,8 protsenti kohalike omavalitsuste kogukulutustest. Kui riigi keskkonnakaitsekulutuste osakaal riigieelarvest on kasvanud 1-1t protsendilt 1995.a 2,8-le protsendile 2008.a, siis kohalike omavalitsuste kulutused on püsinud kogu vaatlusaluse perioodi jooksul 4% ümber eelarvest. Aastate lõikes toimunud keskkonnakulutuste muutused erinevad vaatlusalusel perioodil tuntuvalt (vt. tabel 1).

**Tabel 1.** SKP, riigi ja kohalike omavalitsuste keskkonnakulutuste muutus perioodil 1996-2009, püsivhindades

	SKP	Keskkonnakaitsekulutused	
		Riik	Kohalikud omavalitsused
1996	5,7%	27,9%	-14,3%
1997	11,7%	42,6%	13,9%
1998	6,7%	1,5%	4,5%
1999	-0,3%	-1,6%	-4,4%
2000	10,0%	-13,3%	-6,0%
2001	7,5%	64,4%	60,7%
2002	7,9%	13,1%	7,0%
2003	7,6%	11,9%	-6,6%
2004	7,2%	10,9%	2,1%
2005	9,4%	26,7%	40,3%
2006	10,0%	-16,4%	7,1%
2007	7,2%	53,1%	-5,8%
2008	-3,6%	34,7%	-2,4%
2009	-14,2%	1,8%	-15,9%

Allikas: Autorite kalkulatsioonid, Statistikaamet, Eesti Pank, Rahandusministeerium.

Võrreldes keskkonnakulutusi kriisiperioodidel 1998-1999 ja 2007-2008, võib välja tuua olulisi erinevusi. 1998-1999 toimunud kriisi mõju riigi kulutustele oli võrreldes praeguse kriisiga märkimisväärselt suurem. Riigi kulutused eelmise kriisi perioodil olid tunduvalt enam mõjutatud SKP langusest. Lisaks jätkasid riigi keskkonnakulutused langust ka 2000. aastal, kui majandus oli taastunud. Praeguse majanduskriisi lõppu on raske ennustada, kuid nii esialgsed andmed 2009. a kohta ja 2010. a riigieelarve näitab Keskkonnaministeeriumi kulutuste kasvu. Rahandusministeeriumi andmete kohaselt toetub keskkonnakulutuste kasv EL toetustega seotud valdkondade rahastamise kasvule. Erinevalt riigi kulutustest on kohalike

omavalitsuste keskkonnakulutused olnud eelarvekärbete suhtes tundlikud mõlema kriisi perioodil.

## **Välisabi**

Kõikehõlmavad andmed Eestis välisabi eest tehtud keskkonnakaitsealistest kulutustest puuduvad. Perioodil 2005-2008 oli välisabi osakaal riiklikes keskkonnakaitsekulutustes 40-50 protsenti (Keskkonnaülevaade 2009). Vastavalt nimetatud allikale kasvas välisabi 600 miljonilt kroonilt 2007. a 700 miljoni kroonini 2008. a. Sellest võib järeldada, et välisabil (eelkõige finantseerimine EL-i struktuurifondidest) on 2007. ja 2008. a toimunud keskkonnakulutuste kasvus oluline osa.

Vähe on andmeid välisabi summade kasutamisest kohalike omavalitsuste poolt. Erinevatele allikatele toetudes võib väita, et välisabi osakaal kohalike omavalitsuste keskkonnakulutustes aastatel 2001-2007 jäi 4-16 protsendi vahemikku, mis annab tunnistust, et välisfinantseerimise osakaal kohalike omavalitsuste keskkonnakulutustes on võrreldes riigi keskkonnakulutustega tagasihoidlik.

## **Järeldused**

Avaliku sektori keskkonnakulutuste analüüs näitab, et hiljutine majanduskriis on vähendanud kohalike omavalitsuste keskkonnakulutusi kuid ei ole avaldanud selget negatiivset mõju riigi keskkonnakaitsekulutustele. Perioodil 2007-2008 kasvasid riigi keskkonnakulutused 30%, samal ajal kui kohalike omavalitsuste kulutused kahanesid 2,4%. Esialgsete andmete kohaselt jätkus sama tendents 2009. aastal. Võrreldes keskkonnakaitsekulutusi kriisiperioodidel 1998-1999 ja 2007-2008, võib väita, et majanduskriiside mõju kulutustele on olnud erinev. Eelmise majanduskriisiga kaasnenud SKP languse mõju avaliku sektori keskkonnakulutustele oli praeguse kriisiga võrreldes palju tuntavam.

Käesoleval sajandil on toimunud kaks olulist keskkonnakulutusi mõjutanud muudatust. Astumine Euroopa Liitu 2004. aastal tegi võimalikuks juurdepääsu ulatuslikumatele EL-i keskkonnakaitset rahastavatele fondidele. Eriti tähelepanuväärne on olnud keskkonnakulutuste suurenemine alates 2007. aastast, mis on seletatav EL-i struktuurifondide vahendite avanemisega eelarveperioodiks 2007-2013. Lisaks on ökoloogiline maksureform suurendanud sihtotstarbeliselt keskkonnakaitseks kasutatavate rahaliste vahendite laekumist. Ökoloogiline maksureform, mis soodustab keskkonnakvaliteedi parandamist, nihutab maksukoormust tööjõu maksustamisest keskkonda kahjustavate tegevuste maksustamisele. Samal ajal kindlustavad pikale ajaperioodile planeeritud muutused maksustamises keskkonnamaksudele stabiilse baasi.

Eesti on üldiselt täitnud keskkonnaga seotud maksubaasi stabiilsuse nõude tänu keskkonnamaksude süsteemi perioodilisele muutmisele. Asjaolu, et keskkonnatasud ja -maksud on ette nähtud sihtotstarbeliseks keskkonnaga seotud kulutusteks, muudavad keskkonnakulutused suhteliselt sõltumatuks makroökonomilisest

konjunktuurist. Näiteks kasvasid keskkonnatasude määrad 2009. a. vastavalt Rohelise Partei nõudele 20%, ja seda vaatamata majanduslikule surutisele.

Kokkuvõtteks võib öelda, et Eestis tehtavate keskkonnakulutuste kasv ja stabiilsus põhineb hästi läbimõeldud ja perioodiliselt muudetaval keskkonnatasude ja -maksude süsteemil, kusjuures küllalt hästi on reguleeritud maksudest laekuvate vahendite sihtotstarbeline kasutamine keskkonna heaks. Nii riigi kui kohalike omavalitsuste keskkonnakulutustes on oluline osa välisabil EL-i struktuurifondidest, mida kasutatakse peamiselt investeringutena veevarustusse ja jäätmemajandusse, aga samuti ka looduskaitstes. Erinevate meetmete koosmõju tulemusena on Eesti saavutanud keskkonnakulutuste stabiilsuse ja suutnud seda säilitada sõltumata makroökonoomilise konjunktuuri kõikumistest.

## KOHALIKE OMAVALITSUSTE RAHASTAMISE TASAKAALUSTAMISE REFORMI VAJALIKKUS EESTIS

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Pärast funktsioneeriva erasektori majanduse ja sellest eraldatud avaliku sektori tekkimist transformatsiooniprotsessides vajab avalik sektor uutes turumajandusega riikides teatud tervikuks konsolideerumise perioodi. Eesti valitsussektor koosneb keskvalitsusest ja kohalikest omavalitsustest. Osaliselt arengu regionaalse tasakaalustamatuse tagajärjel on viimase aastakümne jooksul erinevused kohalike omavalitsuste fiskaalvõimekuses järk-järgult suurenenud.

Kohalike omavalitsuste täidetavate ülesannete ring on lai isegi nende omatulude allikate tõsise piiratud korral. Kohaliku majandusarengu tagamise eeltingimuseks on otstarbekas luua kohalikele omavalitsustele ägedas omavahelises konkurentsis võrdsete võimaluste loomiseks õiglane rahaliste toetuste süsteem. Lisaks sellele tuleb Euroopa liidus toime tulla uute nõuetega, mis puudutavad kohalike omavalitsuste vastutusel toimuvat infrastruktuuriteenuste pakkumist. Siin peitub potentsiaalne konfliktiallikas, sest rahaeraldised kohalikele omavalitsustele on pea täielikult keskvalitsuse kontrolli all. Kohalike omavalitsuste kaasaraäkimisvõimalused valitsustasandite vaheliste rahavoogude kujundamisel on väga tagasihoidlikud. Aktiivsemat tegutsemist soodustava kohalike omavalitsuste fiskaalautonoomia arendamiseks tuleb paljude muude tingimuste kõrval luua ka hästi funktsioneeriv kohalike eelarvete tasakaalustamise süsteem.

Hädavajalikuna näib stabiilse ja prognoositava vertikaalse rahandusliku tasakaalustamise süsteemi väljaarendamine. Selle eesmärgi saavutamiseks käsitletakse käesolevas uurimuses järgmisi küsimusi:

- (6) Kuidas kujunes Eestis välja rahandussuhete vertikaalse tasakaalustamise süsteem? Millised on selle tugevused ja nõrkused regionaalarengu seisukohalt?
- (7) Kas konnektus- ja parallelismiprintsiibid võiksid olla aluseks fiskaalsuhete vertikaalse tasakaalustamise süsteemi reformile?
- (8) Kuidas tuletada fiskaalvajaduse ja -võimekuse näitajatest tasandusfondi suurus? Kuidas rakendada selles kontekstis parallelismiprintsiipi?
- (9) Millised eelarvetulude muutused tooks kohalikele omavalitsustele kaasa parallelismiprintsiibi rakendamise?
- (10) Kas kohalike omavalitsuste fiskaalareng muutuks reformiettepaneku rakendamisel tasakaalustatumaks?

Euroopas on parlamentide ülesanne tagada kohalikele omavalitsustele piisavad finantsvahendid, mida need kasutavad seadustega määratud volituste piires vaba otsustusõiguse alusel. Kohalike omavalitsuste fiskaalvõimekuse võrdsustamiseks rakendatakse rahandusliku tasakaalustamise mehhanismid ei tohi seejuures vähendada nende otsustamisvabadust. Fiskaalvõimekuse suurte erinevustega Eestis on selle nõude täitmine keeruline. Majandusliku arengu tasemest sõltuvate maksutulude osatähtsus Eesti kohalike omavalitsuste kogutuludes varieerub

maakondade keskmisena 34%-st 55%-ni. Omatulude (määratledes nendena kõik maksu-, müügi-, rendi- ja intressitulud) osatähtsus omavalitsuste maksutuludes varieerub see-eest 41%-st kuni 80%-ni. Eesti kohalike omavalitsuste maksutuludest moodustab põhiosa laekumine üksikisiku tulumaksust, mille tase elaniku kohta on väga erinev: Harjumaal ulatub see 30-35% üle Eesti keskmise, Lõuna-Eesti maakondades jääb 35-40% alla Eesti keskmise. Viimastel aastatel (2003-2008) on võrreldes aastatega 1997-2002 ebavõrdsus omavalitsuste eelarvetulude laekumise tasemes maakondade vahel üldiselt veidi vähenenud.

Keskvalitsuse ülekannete osatähtsus omavalitsuste kogutuludes on märgatavalt suurenenud – 1997-2002. aasta 25%-lt 2003-2008. aasta 35%-ni. Kuna omavalitsuste tulude taseme võrdustamisele suunatud tasandusfondi osatähtsus on jäänud samal ajal muutumatult ca 7% ligidale, siis tähendab eeltoodu riigieelarvelise sihtfinantseerimise osatähtsuse kasvu omavalitsuste eelarvetuludes 18%-lt 28%-ni. Lõuna-Eesti maakondades ulatub keskvalitsuse ülekannete keskmine osatähtsus kohalikes eelarvetes 56-58%, samal ajal kui Harjumaal moodustasid need keskmiselt aastail 1997-2002 ainult 10% ja tõusid 2003-2008. aastal 20%-ni omavalitsuste eelarvetuludest. Eestis ei ole põhiseaduse ja teiste seadustega tagatud kohalike omavalitsuste fiskaalautonoomia, mis eeldab nende käsutusõigust keskvalitsuse otsustest sõltumatu maksutulude baasi üle. Omavalitsusliidud ei suuda tõhusalt kaitsta oma huve eelarvevaidlustes keskvalitsusega. Kiire majanduskasvu aastatel 2001-2007 kohalike omavalitsuste rahanduslik olukord järkjärgult paranes, kuid kriisiaastal 2009 vähendas keskvalitsus ühepoolsete otsustega nii omavalitsuste eelarvesse suunatavat üksikisiku tulumaksu määra kui ka tasandusfondi summat.

Hinnang Eesti kohalike omavalitsuste positsioonile avalikus sektoris võrreldes teiste EL riikidega toimub nende kasutuses olevate eelarvevahendite suhte põhjal SKP-ga ja valitsussektori kogukuludega. 2007. aastal oli Eesti kohalike omavalitsuste käsutuses veerandi võrra väiksem osa SKP-st (8,4%) kui EL-27 liikmesriikides keskmiselt (11,2%). Eesti valitsussektori suhteliselt madala osatähtsuse tõttu SKP-s on samal ajal kohalike omavalitsuste osatähtsus avaliku sektori kogukuludes Eestis (26,1%) EL-27 keskmisest (24,5%) suurem. Seega ei peitu Eesti kohalike omavalitsuste fiskaalprobleemid niivõrd eelarvekulude suuruses (kuigi infrastruktuuri mahajäämus seda tekitab), vaid nende autonoomia puudumises ja regionaalsete erisuste tasandamises. Seetõttu on vajalik tegeleda omavalitsuste eelarvete tasakaalustamise probleemidega.

Konneksusprintsiipe nõuab, et uute ülesannete andmisega kohaliku omavalitsuse vastutusse peab kaasnema selle edukaks täitmiseks piisavate rahaliste vahendite suunamine kohalikkude eelarvesse. Esimeseks probleemiks on antud printsiiibi toimimise juriidiline tagamine. Kohaliku omavalitsuse õiguse peaks fikseerima riigi põhiseaduses ja selle õiguse tagamiseks vaidluste tekkimisel keskvalitsusega peaks välja kujundama toimiva kohtumenetluste süsteemi esimesest kohtuastmest kuni Euroopa Kohtuni välja. Subsidiiaarsusprintsiipe realiseerub avaliku sektori ülesannete valitsussektori tasandite vahelises jaotuses ainult siis, kui on tagatud nende ülesannete adekvaatne rahastamismehhanism. Sellega seoses tõstatub omakorda iga ülesandega seotud kuluvajaduse hindamise probleemid: kuivõrd on võimalik välja



tuua standardsed kulud ja kuivõrd on kohalikud omavalitsused standardsed mingi ülesande täitmise aspektist käsitletuna? Selles osas pakutakse välja erinevaid teoreetilisi lahendusi.

Uute ülesannete üleandmisega kõigile omavalitsustele peab kaasnema kõigi omavalitsuste standardseid kuluvajadusi arvestav rahastamismehhanism, st sihtfinantseerimine. Tasandusfondi suurendamine uute ülesannete kuluvajaduse katmiseks ei ole õige, sest esiteks peavad tasandusfondi vahendid olema kasutatavad vaba otsustusõiguse alusel ja teiseks ei saa kõik omavalitsused tasandusfondist eraldisi.

Avaliku sektori ülesannete jaotamisel keskvalitsuse ja omavalitsuste vahel tekib sageli paratamatult probleem, kus ülesannet ei peaks täitma keskvalitsus, kuid paljud omavalitsused iseseisvalt selle täitmisega toime ei tule. Seega ei taga omavalitsuste autonoomiat mitte ainult sõltumatud rahaallikad ja vaba otsustamisõigus, vaid ka omavalitsuste koostöös toimivate organisatsiooniliste vormide väljakujundamine. Keskkonnakaitses, turismikeskuste loomisel, transpordi arendamisel ja muude taoliste ülesannete täitmisel on tähtis välja töötada koostööorganisatsioonide adekvaatsed rahastamismehhanismid.

Kohalike omavalitsuste tulutaseme võrdsustamisele suunatud keskvalitsuse ja omavalitsuste vertikaalsete rahaliste ülekannete mahu probleem vajab Eestis sisulist lahendamist. Iga omavalitsuse puhul sõltub tasandusfondist saadud summa suurus jaotusvalemi kõrval fondi suurusest. Võrreldes kindlate ülesannete täitmiseks ette nähtud keskvalitsuse sihteraldistega kohalikesse eelarvetesse peaks tasandusfond mängima tagasihoidlikku rolli. Samas peaks aga tasandusfondi kujunemise alused ja suuruse reguleerima seadusega. Reguleerimise alusena näevad autorid parallelismiprintsipi. Käesolevas uurimuses rakendatakse parallelismiprintsipi keskvalitsuse tasandusfondi suuruse määramisel SLV Saksi liidumaa stiilis. Selle kohaselt peab kohalike omavalitsuste käsutuses olev eelarvevahendite summa muutuma üldjuhul (st sõdade, epideemiade, looduskatastroofide jms mõju vaatluse alt välja jättes) paralleelselt keskvalitsuse käsutuses oleva eelarvesummaga. Lahendamist vajab küsimus, kuidas piiritleda valitsustasandi „käsutuses olevad eelarvevahendid“ – kõigepealt, kas enne või pärast vertikaalülekannete toimumist. Seejärel tuleb määratleda mõlema valitsustasandi eelarvete omatulude koosseis, mille muutumise paralleelsust tahetakse tagada. Riigieelarvest kohalikele omavalitsustele suunatud sihteraldiste käsutajana käsitletakse keskvalitsust, aga kasutusotstarbe piiranguta tasandusfondi vahendite käsutajana kohalikke omavalitsusi.

Eestis ei järgita tasandusfondi suuruse ja jaotuse kujunemisel parallelismiprintsipi. Üheltpoolt määratakse tasandusfondi suurus igal aastal eelarveprotsessis parlamendiamuse (st valitsuskoalitsiooni) poliitilise otsusega; keskvalitsus võib muuta standardkulude normatiive, mille tagajärjel muutuvad iga üksiku omavalitsuse kuluvajaduse hinnangud ja seeläbi tasandusfondist saadava summa suurus. Käesolevas uurimuses rakendatakse Eesti andmete alusel parallelismiprintsipi nii, nagu seda tehakse SLV Saksi liidumaa valitsuse ja kohalike omavalitsuste vertikaalsete rahandussuhete kujundamisel.

Käsitatud parallelismiprintsiibi variandi rakendamisel on tulemused Eesti kohalike omavalitsuste suhtes vastuolulised. Majanduse kiire kasvu perioodil (mil üldjuhul ebavõrdsus tulutasemes suureneb) eraldas Eesti keskvalitsus tasandusfondi parallelismiprintsiibi alusel arvatust oluliselt vähem vahendeid. Majanduse languse aastal 2008 kujunes aga tasandusfond parallelismiprintsiibiga ettenähtust suuremaks. Tulemuste interpreteerimisel tuleb olla ettevaatlik, sest parallelism eeldab funktsioonide stabiilset jaotust valitsustasandite vahel. Igal juhul tugevdab aga kindlate mängureeglite, sh parallelismiprintsiibi rakendamine kohalike omavalitsuste fiskaalautonoomia aluseid. See aitaks Eesti avalikul sektoril jõuda transformatsioonifaasist stabiilse arengu faasi.

Kohalike omavalitsuste autonoomia suurendamine ei ole kerge riigis, kus keskvalitsuse poliitikutele meeldib otsese sekkumisega juhtida või vähemalt suunata avaliku sektori arengut. Seetõttu on muutused kohalike omavalitsuste toimetulekus sageli esile kutsunud keskvalitsuse sekkumisega nende eelarveprotsessi. Sellist sekkumist aitaks vähendada parallelismiprintsiibi rakendamine. Samas on aga väike riik suhteliselt tundlik poliitilise, majandusliku või sotsiaalse kriisi nähtustele, mis sageli võivad pärineda väljastpoolt. Selliste arenguhäiretega toimetulek on keskvalitsuse ülesanne, mis vajab selleks teatud paindlikkust eelarvevahendite jaotamisel.

Veelgi enam, olukord muutub pidevalt ja toob kaasa üha uusi vastuolusid valitsustasandite vahel. Mingit absoluutset formaalset lahendusmehhanismi nende lahendamiseks ei ole võimalik välja töötada. Pidevalt tuleb kontrollida rakendatud mehhanismide sobivust ja nende muutmise vajadust. Rakendada tuleks Nashi lahenduseni viivat läbirääkimiste protsessi komisjonis, kus hääled jagunevad keskvalitsuse ja kohalike omavalitsuse esindajate vahel võrdselt ning mis töötab kindlaksmääratud ajapiirangu tingimustes. Teatud „vahekohtu lahend“ rakendub juhul, kui kooskõlastuskomisjonis ei jõuta kokkuleppele.

Kohalikes omavalitsustes tuleb lahendada ka probleeme (näiteks suured infrastruktuuriprojektid), millel on tähtsus kogu riigi seisukohalt. Nende lahendamiseks peaks keskvalitsus rakendama spetsiifilisi sihteraldiseid, mis jäävad välja parallelismiprintsiibi rakendusala. Kuna tasandusfondil on omavalitsuste eelarvetulude taseme (elaniku kohta) võrdsustamise ülesanne, peab olema fikseeritud selle miinimumsuurus, mis võimaldaks võrdsustamise ülesandega vähemalt rahuldavalt toime tulla. Tasandusfondi miinimumtase võiks aastate lõikes muutuda majanduse reaalkasvu määra võrra. Selle nõudmisega tuleb arvestada parallelismikriteeriumi ja -konstandi valikul.

## LIKVIIDSUSPROBLEEMID NING NENDE MAJANDUSPOLIITILINE KÄSITLUS VIIMASE FINANTSKRIISI AJAL BALTI JA SKANDINAAVIA REGIOONIS: EX ANTE EMPIIRILINE UURIMUS

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Käesolev artikkel on *ex ante* empiiriliseks uurimuseks, mis vaatleb likviidsusprobleemide algeid ning põhjuseid viimase finantskriisi ajal. Töös käsitletakse fiskaal- kui monetaarpoliitilisi aspekte, mis mõjutavad likviidsusprobleemi. Andmed pärinevad kahest peamisest allikast: ThomsonReuters Datastream andmebaasist ja International Monetary Fund IFS andmekandjalt. Töös kasutatakse viimaseid kättesaadavaid paneelandmeid Balti riikide (Eesti, Läti, Leedu) ning Skandinaavia piirkonna (Soome, Rootsi, Taani) kohta. Kokku hõlmab vaadeldav periood ajavahemikku 1995 kuni 2009, kuid keskendub 2007 alguse saanud finantskriisile. Võrdlusvajadustest lähtuvalt on andmed vajalikel juhtudel korrigeeritud sesoonsuse suhtes ning kasutades perioodi keskmisi valuutakurse, teisendatud eurodeks. Valimiks on valitud Balti ja Skandinaavia maad seetõttu, et see võimaldab üheaegselt uurida, kas ja kuidas kolm väikest avatud majandust (Balti riigid) on mõjutatud lähimatest välispartneritest ning kas kriisisituatsioonis on antud riikidel üldse olemas majanduspoliitilisi hoobi, millega likviidsusprobleeme lahendada või ennetada.

Antud artikli eesmärgiks on uurida kuidas rahapakkumine, situatsioon kapitali- ja rahaturgudel ning finantsinstitutsioonide varade struktuuri muutused on seotud muutustega peamistes makromajanduse näitajates. Uurimises lähtume ISLM-mudelil baseeruvast teoreetilisest lähtepunktist, kus uurime rahapakkumise poolt ehk LM-kõvera osa. Lähtuvalt teooriast võib majandussurutise tingimustes majandus langeda likviidsuslõksu ning sel ajal on LM-kõver praktiliselt horisontaalne. Situatsioonis, kus kogu majanduses olevad vahendid on täies ulatuses reaalmajanduse tehingutes kasutuses ning tegemist on majandusbuumi olukorraga, võib LM-kõver olla praktiliselt vertikaalne. Kahe äärmuse vahel peaks jääma vahepealne traditsiooniline piirkond, kus LM-kõver on positiivse tõusuga ning raha on majandustehingutes kasutusel kui deposiitarvetel pankades. Kiiresti buumiaegsest olukorrast kriisisituatsiooni liikudes võib vahepeelses LM-kõvera piirkonnas viibimine jääda väga lühikeseks, mis tähendab, et majandusel pole aega kohanduda uute oludega ning seetõttu on likviidsusvajadused selgelt suuremad, kui kriisiaegne majandus pakkuda suudaks. Teoreetiline mudel illustreerib rahapakkumise mahu ning intressimäärade olulisust majandusele.

Antud artiklis lähenetakse LM-kõveral baseeruvatele likviidsusprobleemidele mõneti kaudselt ehk kuna rahapakkumise mahte erinevatel intressitasemetel on keeruline kättesaadavate andmete puhul jälgida, vaadeldakse lisaks rahapakkumisele ja intressimäärade muutustele, muutusi ja nende kiiruseid peamiste makromajanduslike näitajate puhul. Lisaks uuritakse rahapakkumise ning intressimäärade seoseid ning seoste tugevusi muude majandusnäitajatega (toodud tabelis 1). Kuigi põhitähelepanu on pööratud raha- ja kapitaliturgudele, siis majanduspoliitilisest

vaatenukast ei saa kuidagi kõrvale jätta muude näitajate olulisust, sest likviidsust puudutavaid otsuseid tuleb teha omades võimalikult terviklikku pilti olukorrast majanduses.

Uuringu tulemused vastavad teoreetilistele ootustele väikese ja avatud majanduse kohta. Seoste suund ja tugevus on oodatud tasemetel. Empiirilised andmed näitavad, et muutused intressimäärades, rahapakkumises ja SKP-s on toimunud suhteliselt kiiresti ning kohandumisaeg on olnud äärmiselt lühike. Näiteks Läti ülebõ intressimäärad on tõusnud mõlema viimase kriisi ajal üle 4% võrra lühema kui kuu ajaga. Kui tavaolukorras on nii Euro, Skandinaavia kui Balti intressimäärad liikunud suhteliselt tugevas korrelatsioonis, siis kriisisituatsioonis on toimunud selge lahknevus. Keskpankade baasintressimäärade langetamisest lähtuvalt on nii Euro kui Skandinaavia intressimäärad näidanud langustrendi, kuid kriisi algusajal liikusid Balti riikide intressimäärad hüppeliselt vastassuunas, millele on küll olukorra stabiliseerudes hakanud järgnema taas ühtlustumine Euro ja Skandinaavia regiooniga. Intressimääradega toimunu on selge illustatsioon sellele, et väikeste avatud riikide keskpangad (eriti kui tegemist on süsteemiga, kus valuutakurs on fikseeritud) ei saa kasutusele võtta ekspansiooniseid monetarpoliitika meetmeid ning seega on riigid selgelt mõjutatud väljavoolavatest välisvahenditest, mis hakkas Balti riikide puhul toimuma alates 2007 aastast.

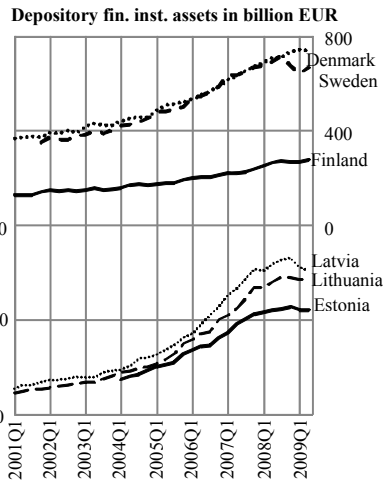
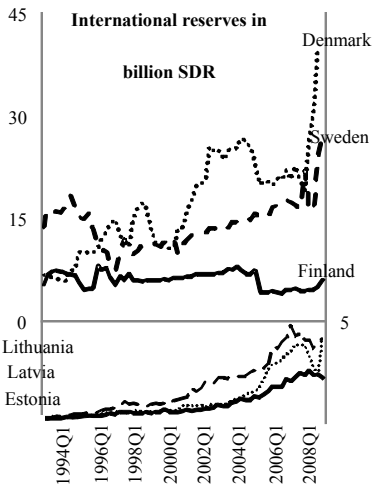
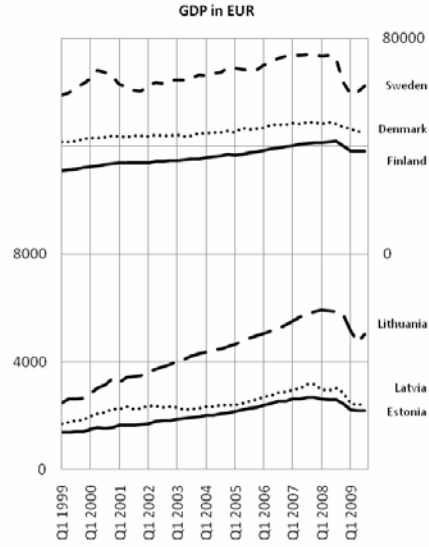
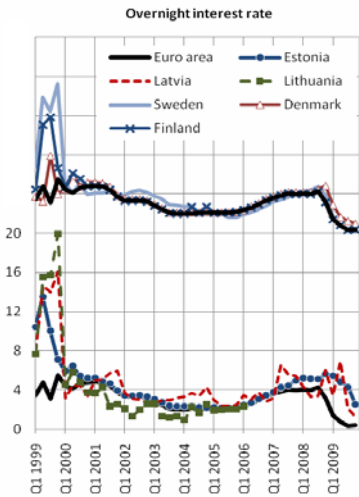
Seosed riikide vahel vaadeldes SKP kasvunumbreid on tugevad, jäädes vahemikku 0,7 kuni 0,9. Alates 2000 aasta algusest on seosed Balti riikidel oma otseste naabritega muutunud tugevamaks (nt Eesti ja Soome vahel). Pikemat perioodi vaadeldes on seosed Balti riikide ja Skandinaavia siseselt tugevamad, kui gruppidevahelised. Üldiselt võib järeldada, et valimi siseselt on seosed tugevamad kui seos Eurosooni keskmisega. Seetõttu saab kvalitatiivselt väita, et nii Rootsi, Eesti kui Läti finantssektori probleemid on tihedalt seotud, kusjuures probleemid ilmnesid esmalt Eestis ja Rootsis. Eesti ja Rootsi olid esimesed riigid, esiteks aktsiaturu liikumises ning sellele järgnevalt ka euros mõõdetult SKP numbrites, kus oli näha majandustõusu aeglustumise ja negatiivseks pöördumise märke. Tugev seos (vt. tabel 1 ja joonis 1) rahapakkumise, majanduskasvu ja intressimäärade vahel tähendas, et regioonis alguse saanud majandusprobleemid vähendasid likviidsust ka teistes regiooni riikides, eriti hüppeliselt tõusnud intressimääradega Balti maades.

Vaadeldes välisinvesteeringuid, eristuvad Balti riigid selgelt Skandinaaviast sissetulnud otseinvesteeringute kõrge osakaaluga võrreldes portfelli-investeeringutega. Välisraha sissevool kolmekordistus Balti riikides alates 2004 kuni 2007 aastani. Peale majandusolukorra halvenemist on investimispositsioonide andmetest ja selgelt pankade koondbilanssidest näha, et välisraha hakkas Balti riikidest põgenema. Antud tendents on tekitanud selgeid likviidsusprobleeme kohalikele pankadele olukorras, kus Skandinaavia päritolu emapangad suunavad tütarpankadele antud laenu raha koduriigi raskema olukorraga hakkamasaamise nimel pigem tagasi. Nimelt on nii Rootsi kui Taani olnud sunnitud tõstma koduvaluuta tagamiseks reservide taset (vt. joonis 1). Samas on raha väljatõmbamine ning pangandussektori raskused põhjustanud nt Lätis välisreservide

ajutist kahanemist olukorras, kus üldiselt on reservid igal pool tõusnud, mis on omakorda majandusest likviidsust vähendanud.

Varasemate kriiside rahvusvaheline kogemus näitab, et omades terviklikku ülevaadet riigi võlatasemest on poliitilisest vaatenurgast äärmiselt oluline võtmaks vastu meetmeid kriisiolukorra parendamiseks. Balti riikide keskpankadel pole paraku otseseid meetmeid rahapakkumise ja intressimäärade muutmiseks. Kuid isegi tugevad avaldused võimaliku (keskvalitsuse või reservidest tuleneva) toe pakkumise kohta, võivad aidata süstida mureneva usaldusega finantssektorisse kindlust ning vähendada nii intressimäärade tõusu kui fikseeritud valuutakursi vastu suunatud spekulatsioone. Sarnased avaldused on kaalukad aga ainult juhul, kui reaalselt eksisteerib puhver, mida kriisisituatsioonis likviidsusraskuste leevendamiseks kasutada. Seega on fikseeritud valuutakursiga riikides majanduspoliitiliste hoobadega likviidsuspositsiooni parandada võimalik praktiliselt ainult juhul, kui riigi laenukoormus ja valitsuse kulutused on olnud piisavalt konservatiivsed headel aegadel. See võimaldab koguda vajaliku puhvri, mille olemasolul oleks vajadusel kriisisituatsioonis suurema tõenäosusega ja parematel tingimustel võimalik näiteks välisraha kaasata. Tugeva korrelatsiooni tõttu suuremate naaberriikidega, on majanduspoliitilised likviidsuspositsiooni parandamise võimalused lisaks veel piiratud majanduse väiksuse tõttu, sest välismõju on tugev.

Kuna vaadeldud regiooni majandused on endiselt raskustes, siis on käesolev uuring peamiselt siiski *ex ante* vaade situatsioonile, mida saab täiendada omades juba terve majandustsükli andmestikku peale kriisisituatsiooni lahenemist.



**Joonis 1.** Üleöö intressimäärad, SKP, reservid ja pankade varade maht. Balti riikide näitajad on kujutatud jooniste alumistel osadel ning Skandinaavia riigid ülemistel. SKP punul on tegemist kvartaalsete andmetega fikseeritud hindades miljonites eurodes.

**Tabel 1.** Korrelatsioonimaatriks eurotsooni, Eesti, Läti, Leedu, Soome, Rootsi ja Taani rahapakkumise (M2 või M3), keskmise üleöö intressimäära (i) ja SKP vahel perioodil 1995 (I kvartal) kuni 2009 (III kvartal)

	EUR M2	EUR SKP	EUR i	SWE M3	SWE SKP	SWE i	LIT M2	LIT SKP	LIT i	DEN M2	DEN SKP	DEN i	FIN M3	FIN SKP	FIN i	LAT M2	LAT SKP	LAT i	EST M2	EST SKP	EST i
EUR i	-0,42	0,94																			
EUR SKP	-0,31	1,00																			
SWE i	0,61	-0,59	1,00																		
SWE M3	-0,36	0,91	-0,44	1,00																	
SWE SKP	-0,32	0,99	-0,55	0,91	1,00																
LIT i	0,55	-0,75	0,96	-0,61	-0,63	1,00															
LIT M2	-0,32	0,92	-0,45	0,98	0,93	-0,52	1,00														
LIT SKP	-0,31	0,96	-0,48	0,93	0,97	-0,58	0,97	1,00													
DEN i	0,75	-0,29	0,53	-0,23	-0,31	0,50	-0,25	-0,29	1,00												
DEN M2	-0,36	0,90	-0,42	0,98	0,91	-0,39	0,99	0,95	-0,25	1,00											
DEN SKP	-0,18	0,98	-0,50	0,87	0,99	-0,63	0,89	0,95	-0,21	0,87	1,00										
FIN i	0,67	-0,55	0,87	-0,45	-0,50	0,85	-0,43	-0,46	0,75	-0,42	-0,44	1,00									
FIN M3	-0,34	0,84	-0,41	0,97	0,85	-0,40	0,98	0,91	-0,23	0,99	0,80	-0,41	1,00								
FIN SKP	-0,25	0,99	-0,52	0,90	0,99	-0,66	0,92	0,97	-0,25	0,90	0,99	-0,47	0,84	1,00							
LAT i	0,42	-0,46	0,89	-0,24	-0,42	0,96	-0,28	-0,36	0,43	-0,23	-0,41	0,77	-0,22	-0,40	1,00						
LAT M2	0,50	0,96	0,34	0,93	0,90	0,64	0,99	0,91	0,71	0,97	0,79	0,44	0,94	0,91	0,47	1,00					
LAT SKP	-0,25	0,96	-0,48	0,90	0,98	-0,60	0,95	0,99	-0,26	0,92	0,96	-0,44	0,88	0,97	-0,37	0,82	1,00				
EST i	0,50	-0,48	0,78	-0,18	-0,44	0,81	-0,24	-0,37	0,57	-0,18	-0,43	0,81	-0,15	-0,41	0,78	0,92	-0,39	1,00			
EST M2	-0,31	0,92	-0,45	0,99	0,93	-0,57	1,00	0,96	-0,22	0,99	0,89	-0,43	0,97	0,92	-0,27	0,99	0,94	-0,22	1,00		
EST SKP	-0,31	0,97	-0,54	0,90	0,99	-0,64	0,94	0,99	-0,32	0,92	0,97	-0,50	0,86	0,98	-0,43	0,82	0,99	-0,46	-0,46	1,00	

# EESTI MAAPIIRKONNA PEREETTEVÕTETE STRATEEGIA

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## Sissejuhatus

Käesolevas artiklis antakse ülevaade Eesti maettevõtlusele suunatud ettevõtluspoliitikast, maal tegutsevatest pereettevõtjatest ja pereettevõtete strateegiast. Koondamiste tagajärjel on töötute arvukus suurenenud, töö kaotanutest osad valivad sotsiaalabi toetused, kuid on ka neid, kes otsustavad hakata pereettevõtjaks. Eestis on paljud ettevõtlikud inimesed loonud pereettevõtte, peamiselt teeninduse, põllumajanduse ja turismi valdkonnas. Eesti ettevõtluspoliitika toetab ettevõtlikke inimesi ja tunnustab ettevõtlust kui riigi majandusarengu edasiviijat. Pereettevõtete iseloomulikuks tunnuseks on see, et pereliikmetele on pereettevõtte peamiseks sissetulekuallikas. Üheks positiivsemaks pereettevõtte omaduseks on lühike otsustusahel, mis tagab seatud strateegia kiire elluviimise. Pereettevõtte tegevust ja edukust mõjutavateks teguriteks on omavahelised suhted ja põhjalikult ning läbimõeldult koostatud strateegia. Strateegia pereettevõttes on tegevusele orienteeritud ja käsitleb seda mida ja millal teha ning kuidas peab konkreetseid tegevusi tegema. Pereettevõtte strateegia ülesehitus peab olema planeeritud detailselt, kõikidele etappidele peab olema konkreetne sisu ja neid peab järjekindlalt ellu viima. Pereettevõtte strateegia kavandamise protsess ei lõppe kunagi, pidevalt peab toimuma strateegia kohandamine vastavalt muutustele (keskkonna muutused, konkurents jms). Pereettevõtjad on veendunud, et tugeva perekonnaga ja õige juhtimise strateegiaga tagatakse eesmärkide täitumine ning suudetakse teenida kasumit. Autor on läbi viinud uurimistöid füüsilisest isikust ettevõtjatega; ettevõtjatega, kes on ettevõtlusvormi vahetanud või lahkunud ettevõtlusest; maapiirkonna ettevõtjatega; lihavesi- ja hobusekasvatajatest pereettevõtjatega. Autor on esile toonud pereettevõtete tähtsust Eesti ettevõtluspoliitikas, eriti maapiirkondades, toonud välja pereettevõtjate kitsaskohad, nende põhiprobleemid ja soovitusel ning ettepanekud nende probleemide lahendamiseks.

## Maapiirkonna ettevõtluspoliitika

Eesti ettevõtluspoliitika arengukava aastani 2013. on seotud paljude valdkondade arengukavadega (maaelu, turism, haridus jms). Vaatamata sellele, et on loodud tegevuskavad maapiirkondade elukeskkonna arendamiseks, ei ole piisavalt pööratud tähelepanu põllumajanduse (eriti loomakasvatuse) arengule. Põllumajanduslik ettevõtlus on olnud läbi aegade Eesti elanikkonna jaoks oluline tegevusvaldkond ja sissetulekuallikas. Põllumajandusel on aastate lõikes olnud kande roll elanike toiduainetega varustamisel, maapiirkondade ettevõtluses ja kultuurimaastiku kujundamisel. Põllumajandus on Eestis traditsiooniline majandusharu, milles tegutsevate ettevõtete tootlikkus ja kasumlikkus töötaja kohta jäävad oluliselt maha teiste riikide vastavatest näitajatest. Eesti majandussektoris saavutatud rahvus-



vaheline konkurentsipositsioon baseerub suuresti suhteliselt odavatel tootmis-sisenditel ja on seetõttu nõrk: hinnaeelisele lootvate tootjate võimalused taanduvad. Rahvusvahelises konkurentsises edukas püsijäämine sõltub üha enam oskusest uusi teadmisi ja lähenemisi ärieduks ära kasutada ja olukorras, kus tootmiskulud lähenevad arenenud riikide tasemele, on tootlikkuse tõus ainsaks võimaluseks säilitada või parandada ettevõtte rahvusvahelist konkurentsipositsiooni. Eesti ettevõtete tootlikkus moodustab vaid 50,6% Euroopa Liidu keskmisest (Estonian...).

Eesti ettevõtluspoliitika arengukava edukaks toimimiseks on vajalik väärtustada piirkondlikku, kohalikku, säästvat ja infoühiskonna arengut. Ettevõtluspoliitika toetab igati vastutustundliku ettevõtluse arengut, vältimaks seda, et ettevõtluse kasv ja kasumlikkus ei tuleneks teiste ühiskonnaliikmete või looduskeskkonna arvelt (Estonian...). Oluline on, et maapiirkondades toimuks majandustegevus, alustama peab põllumajandusest, mille juurdumisel hakkavad arenema samas piirkonnas ka teised tegevusalad (Bourge 1994). Põllumajandusettevõtete majandustulemused sõltuvad ettevõtete tööst majandustegevuse tõhustamisel ja riigi tegevusest neile ettevõtetele majanduspoliitilise keskkonna kujundamisel, samas peavad ettevõtted arendama intensiivset ja laialaatuslikku ühistegevust nii ühiste teenuste süsteemi väljarakendamiseks kui ka majanduspoliitilise keskkonna kujundamisel (Reiljan, Tamm 2005).

2008. a USA-s läbiviidud uurimistööst selgub, et piirkondade majandusliku arengu ja pereettevõtete vahel on tihe seos: mahajäänud piirkondades, kus on väiksem majanduskasv, on pereettevõtete areng ja ellujäämistõenäosus tunduvalt suurem kui kõrge majanduskasvuga piirkondades. Pereettevõtted on tõhusamad, nad omavad sotsiaalset kapitali, nad ei ole alati vaid majanduslikule eesmärgile pühendunud, seega vajavad investeringuteks vähem kapitali (Chang *et al.* 2008). Autori uurimistulemustest lähtuvalt on sama Eestis: pereettevõtlus on hoogsam vähem-arenenud piirkondades (maapiirkondades), kus pereettevõtlusel on kande roll majanduses. Autor on esile toonud pereettevõtete tähtsust Eesti ettevõtluspoliitikas, eriti maapiirkondades, toonud välja pereettevõtjate kitsaskohad, nende põhi-probleemid ja soovitusel ning ettepanekud nende probleemide lahendamiseks.

### **Ettevõtluse areng**

Okupatsiooniajal eraettevõtlust praktiliselt ei olnud. Nüüd, kui Eesti on taasiseseisvunud pea 20 aastat, Eesti majandus on hoogustunud, eraettevõtete arv on kiiresti kasvanud, suurenenud on ettevõtete konkurentsivõime ja majandusnäitajad. Võrreldes 2002. aastaga on ettevõtjate arv suurenenud 92,5% (tabel 1). Enim on füüsilisest isikust ettevõtjaid ja osatühiühinguid, mis moodustavad 01.01.2010 seisuga 94,1% registreeritustest (tabel 1). Kuni aastani 2009. võisid füüsilisest isikust ettevõtjad tegevuse registreerida kas Maksu- ja Tolliametis või Äriregistris. Avalikus statistikas kajastusid vaid Äriregistrisse registreeritute andmed. Segaduste vältimiseks võttis Vabariigi Valitsus vastu otsuse, et kõik füüsilisest isikust ettevõtjad peavad 2009. aasta jooksul ümber registreerima Äriregistrisse. Kahjuks teave ümberregistreerimise kohta ei jõudnud kõikideni. Mõistlikum oleks olnud automaatne ümberregistreerimine. 2009. aasta jooksul paljud füüsilisest isikust

ettevõtjad (ca 6 500) vahetasid ettevõtlusvormi (peamiselt moodustati osäühing). Põhjuseks öeldi, et kui peab end Äriregistris registreerima, siis juba äriühinguna mitte füüsilisest isikust ettevõtjana, teiseks põhjuseks peeti 100% isikliku varaga vastutuse ärajäämist (osäühingu vastutus on vaid omakapitali ulatuses). Enim vahetati äriühingu vormi järgmistes valdkondades (Registrite...):

- haldus- ja abiteenindus (27,5%);
- kinnisvarateenindus (16,5%);
- haridus- ja teadustegevus (15,3%).

Põllu- ja metsamajanduses (sh kalapüük) vahetas äriühingu vormi 4% ettevõtjaid, peamiselt need, kes ei olnud registreerinud end taludena. 2009. a registreeris end ümber Äriregistrisse ca 14 000 füüsilisest isikust ettevõtjat. Peamiselt järgmistes valdkondades (Registrite...):

- muu teenindav tegevus (20,1%);
- kaubandus ja mootorsõidukite remont (15,7%);
- põllu- ja metsamajandus ning kalapüük (13,1%);
- haridus-, teadus- ja tehnikategevus (12,2%);
- meelelahutustegevus (8,8%).

Enamik põllu- ja metsamajanduse, kalapüügi ja turismiga tegelevad ettevõtjad on pereettevõtjad. Eesti loomakasvatuseettevõtjad on peamiselt pereettevõtjad (Kirsipuu 2009a; Kirsipuu 2009c). Maapiirkondade atraktiivseks muutumisele aitab kaasa turismitalude kiire areng. Turismitaludes pakutakse aktiivset puhkust, võimalust osaleda pere tegemistes ja nn „käed mulda pista“. 20% lihaveisekasvatajatest pereettevõtjatel on lisategevusalaks turismitalu. Turistid saavad viibida lihaveiste karjamaal, veiseid sööta või ajada ühest koplust teise (Kirsipuu 2009b). Ettevõtete kasvu takistajateks ei peeta mitte omanike suutmatust või soovimatust turgu laiendada vaid ettevõtteväliseid tegureid. Näiteks Euroopa Liidu poolt etteantud ammlemade kvoot ja kokkulepitud hinnad lihakombinaatides (Kirsipuu 2009b). Tegevust laiendavad pereettevõtjad näevad laienemist lisategevusaladel (turism, majutus, toiflustamine, veterinaarteenused, jaekaubandus, remonditöökojad jms).

## **Pereettevõtlus**

Seadusandluses puuduvad mõisted „pereettevõtja“ ja „pereettevõtlus“. Autor peab pereettevõtteks ettevõtet, mille tegevuses osaleb ettevõtja perekond (perekonna-liikmeteks abikaasa, lapsed, vanemad, õed-vennad, tädid-onud ja nende kaaslased). Pereettevõtete üheks iseloomulikuks tunnuseks on see, et pereliikmetele on pereettevõtte peamiseks sissetulekuallikaks. Pilootuuring perefirmade loomise, tegutsemise ja arengu probleemide kohta viidi läbi 2006. aastal 53. pereettevõtja seas (Kaseorg, Siimon 2007). Uuringuga leiti, et perefirmadel on vaja oma eripära tunnetades teha õigeid valikuid ja nende eduka arengu esmaseks eelduseks on nende organisatsioonilis-õiguslik määratlumine. Läbiviidud uuring kinnitas, et oluline on pereettevõtlusalase infobaasi loomine, kogemuste üldistamine ja levitamine ning on vaja läbi viia süvauuringuid pereettevõtluse kohta. 2007. aastal viidi läbi juhtumiuuring, millest taas selgus süvauuringu vajadus (Kaseorg, Siimon 2008).

Kaseorg, Raudsaar (2008) jõudsid järeldusele, et kõige olulisemad probleemid perefarmides on seotud ärikeskkonna ja juhtimisega. Sama väidab autor, lisaks on pereettevõtjatel vaja erilist tähelepanu pöörata pereettevõtete strateegiale ja strateegilisele juhtimisele, et tagada ellujäämine, eriti praeguses majandus-situatsioonis. Pereettevõtjad peavad olema valmis muutusteks, milleks valmisoleku tagab korrektselt vormistatud kirjalik strateegia olemasolu.

### **Hobusekasvatajatest pereettevõtjad**

Eesti maaelu arengukavas 2007-2013 on kirjas, et Eesti kavatseb esimese prioriteediga parandada põllumajandus- ja metsandusvaldkonna konkurentsivõimet, pakkudes ettevõtjatele koolitus- ja teavitustegevusi, soodustada nii noorte põllumajandustootjate kui ka harrastustalunike tegevuse alustamist; arendada nõuandesüsteemi – ja teenuseid. Kõikidest arengukavadest on praktiliselt välja jäänud hobumajandus, Eesti maaelu arengukava raames on küll karjamaatoetus ja toetusi ohustatud tõugu hobuste kasvatajatele ja ühistutele hobuste tõuraamatute pidamise ning 2010. aastast jõudluskontrolli läbiviimise eest. Pea kõikides nn vanades Euroopa Liidu riikides on hobumajandusele pööratud suuremat tähelepanu kui Eestis. Eestis on hobune ja hobusekasvatus pigem kasvatajate eralõbu. Eestis oli 2009. a septembrikuu seisuga 1 927 hobuse omanikku, kellel erinevaid tõugu hobuseid 7534 (joonis 1). Autor viis läbi küsitluse 500 hobusekasvataja seas, et selgitada, kas hobusekasvatajad peavad end pereettevõtjateks või mitte. Nendel, kes pidasid end pereettevõtjateks, tuli täita ankeet küsimustega, vastanutest 20-ga viis autor läbi intervjuud. Küsimustikud olid laiahaardelised, antud artiklis on autor kasutanud vaid ettevõtte strateegiat puudutavaid küsimusi. Intervjuude ja küsimustike tulemused pereettevõtte strateegia kohta koondas autor ühtseks tervikuks. Pereettevõtjaks pidas end 177 hobusekasvatajat, kahjuks nendest ettevõtjana, kelle tegevusalaks hobusekasvatus, on registreerinud vaid 31%. Ettevõtjaks mitte registreerimise põhjusteks peeti järgmist:

- hobumajandus ei ole Eestis tähtsustatud (20%);
- hobune on lemmikloom (20%);
- hobusekasvatus on hobi ehk kõrvaltegevus (60%).

Pereettevõtjatest hobusekasvatajatel on 3672 hobust, keskmiselt 20 hobust kasvatajal. Seega ei ole tegemist hoolitsemisega lemmiklooma eest vaid tõsise tööga. Enamus registreeritud pereettevõtjad omasid talle, maneeže ja tegelesid tõuaretuse ning spordiga. 60% hobusekasvatajatel oli loodud äriühing, mis tegeles näiteks veterinaarteenuste pakkumise, turismi, puhkemajanduse, veisekasvatuse (sh lihavetsekasvatus), metsanduse või põllumajandusega. Hobused ei kajastu äriühingu tegevuses. Maakondade lõikes on kõige enam hobusekasvatajatest pereettevõtjaid Harjumaal (18,7%), Saaremaal (12,4%) ja Tartumaal (10,2%). Saaremaal on kõige suuremad pereettevõtjate hobusekasvandused (169 ja 121 hobust karjas).

## Ettevõtte strateegia

Ettevõtte strateegia hõlmab ettevõtte kõiki olulisi funktsioone ja tagab, et ettevõttes langetatavad otsused on omavahel kooskõlas ning kujutab endast pikaajaliste eesmärkide saavutamise põhiteede ja tegevuspõhimõtete kogumit, mis on ettevõtte arengu juhtimise aluseks (Leimann *et al.* 2003). Strateegia on idee ja tegevused tuleviku loomiseks ning kindlaksmääramiseks (Macmillan 2001). Juhtimise strateegia elluviimisel on suur tähtsus organisatsioonikultuuril. Organisatsioonikultuuri kujundavad ettevõtte omanikud. Tavaliselt kujuneb organisatsioonikultuur koos omanike ja esimeste töötajatega ning on raskesti muudetav. Mitte alati ei ole uute strateegiate elluviimisel kaasaitajaid. „Organisatsioonikultuur avaldub väärtushinnangutes, normides ja tegevusprintsipiides, mida juhid jutlustavad ja jälgivad, eetilistes standardites, ametlikes tegevuspoliitikates ning protseduurides, traditsioonides, töötajate käitumises ja taotlustes, organisatsioonis juhtunu kohta räägitavates legendides“ (Leimann *et al.* 2003). Ettevõtte strateegia on üldine tegevuskava finantsiliste ja strateegiliste eesmärkide saavutamiseks. Ettevõtte strateegia kujuneb tavaliselt kahest komponendist: kavandatud eesmärgipäraste sammude astumine ja reaktsioon ootamatutele muutustele (tehnoloogilised muutused, valitsuse astunud sammud, tarbijate käitumise muutused jms) ja konkurentide käitumisele. Muutustele reageerimise käigus toimub strateegia peenhäälestus (Leimann *et al.* 2003). Ettevõtted peavad koostama strateegilise plaani, milles on määratletud strateegiline visioon ja missioon, seatud eesmärgid ja strateegia valik, et määrata ettevõtte juhtimiseks lühi- ja pikaajalised eesmärgid ja panna kirja meetodid, kuidas neid eesmäärke saavutada (Leimann *et al.* 2003). Strateegiat vajatakse selleks, et saavutada püstitatud eesmäärke, strateegia on küsimus sellest, kuidas viia ettevõtte sealt kus ta on, sinna kuhu tahetakse jõuda. Strateegia on tegevusele orienteeritud, käsitleb seda, mida teha, millal teha ja kes peab tegema, seega strateegilisest tööst on ainult siis kasu, kui planeeritakse konkreetsed sammud ja need ellu viiakse. Strateegia kavandamise protsess ei lõppe, pidevalt peab toimuma strateegia kohandamine. Tegelik ettevõtte strateegia kujuneb varasematest perioodidest päritud ja planeeritud strateegia ning tegevuskeskkonnas toimunud muutustele reageerimiste seguna (Leimann *et al.* 2003).

## Pereettevõtte strateegia

„Perekonna ja ettevõtluse vahel ei saa tuua täpseid piire, perekond osaleb pidevalt ettevõtlusprotsessides. Perekond tegeleb ettevõtlusega ka väljapool tööaega, edu loodetakse saada vaid kogu perekonna kaasabil“ (Craig, Lindsay 2002). Iga ettevõtte saab kasu läbimõeldud eesmärkidest, missioonist, visioonist ja strateegiast. Füüsilisest isikust ettevõtjale ja ettevõttele, kus ainukeseks töö tegijaks on omanik ning pereettevõttele on esmatähtis strateegiliste juhtimisalaste teadmiste olemasolu. Siiski enamuse pereettevõtjaid juhindub esmalt enda poolt püstitatud reeglite ja oma tunnetest ning alles siis kui pereettevõtlus ei arene soovitud kiirusega hakatakse mõtlema strateegia kujundamisele. Need pereettevõtted, kes suudavad koheselt ümber orienteeruda ja muuta püstitatud strateegiat, saavutavad edu ning väldivad pereettevõtte läbikukkumist. Pereettevõtted peavad kavandatud strateegiaid järjekindlalt ellu viima, jälgima püstitatud tähtaegu ja seatud eesmäärke ning olema

avatud muudatustele, eriti majanduskeskkonnast tulenevatele muudatustele, et koheselt olemasolevat strateegiat uuendada (Kirsipuu 2009b).

Üheseid juhiseid pereettevõtetele anda ei saa. See, mis võib toimida hästi ühe pereettevõtte juures, ei pruugi toimida teise juures. Iga pereettevõtte peab võtma vastu selliseid strateegilisi otsuseid, mis ainult neile sobib ja arvestama enda pereettevõtte võimete ning eripäraga. Pereettevõtjad on veendunud, et tugeva perekonna ja õige strateegiaga tagatakse eesmärkide täitumine ning suudetakse teenida kasumit. Autori poolt uuritud 2006...2009 pereettevõtete omanikest 98% osaleb aktiivselt pereettevõtte juhtimises. 40% pereettevõtjatel on korrektselt vormistatud strateegia tagamaks jätkusuutlikku pereettevõtte arengut. Strateegiad on koostatud kirjalikult, esitatud on konkreetne visioon, missioon ja eesmärgid, pikaajalised eesmärkide perioodiks on 5...10 aastat. Lihaveisekasvatajatest pereettevõtjate strateegia pikaajaliste eesmärkide periood oli kuni viis aastat (60%), hobusekasvatajatest pereettevõtjate pikaajaliste eesmärkide periood oli kuni kümme aastat (40%). Nii lihaveise- kui ka hobusekasvatuse on pikaajaline protsess, eriti hobusekasvatuse, hobuse väärtust hinnatakse tavapäraselt alles siis, kui hobune on saanud kolme-nelja aastaseks. Selleks ajaks on hobusel läbitud jõudluskontrolli katsed, ta on osalenud erinevatel võistlustel. Selleks ajaks on kujunenud välja hobuse iseloom, käitumine ja jõudlustulemused. On selge, kas hobust saab edaspidi kasutada spordis, aretuses, tööhobusena või lemmikloomana.

Kõik need pereettevõtjad, kes on koostanud pereettevõtte strateegia, jälgivad koostatud strateegiat, korrigeerivad igal aastal püstitatud eesmärgid ja täiendavad meetodeid, et lühiajalisi eesmärgid paremini ellu viia. Nendel, kellel on karjas rohkem kui 60 hobust ja hobused ei ole vabapidamisel, on koostatud lisaks pereettevõtte strateegiale strateegilised plaanid juhtimiseks. 58% lihaveise- ja 32% hobusekasvatajatest on olemas korrektned planeerimissüsteemid, mis aitab neid pereettevõtte strateegia elluviimisel. Pereettevõtjad soovivad selleks, et tegutseda jätkusuutlikult ja olla konkurentsivõimelised riigipoolset abi rahalist vahendite osas. Ühine soov lihaveisekasvatajatel on korrektselt toimiv tarneahel, et tagada juurdepääs uutele turgudele nii liha kui ka elusloomade müügi osas. Ühine soov hobusekasvatajatel on see, et tähtsustataks hobumajandust, mis omakorda tooks kaasa tegevusvaldkonna arengu.

Maapiirkonna pereettevõtted on kergemini haavatavad, reservid kriitiliste perioodide üleelamiseks praktiliselt puuduvad. Sageli sõltuvad nad vaid ühest tegevusvaldkonnast. Käesolevas majandusolukorras peavad pereettevõtted pöörama tähelepanu pereettevõtte strateegiale, et suuta jätkata pereettevõtlust. Ei tohi jääda äraootavale seisukohale vaid hakata koheselt planeerima pereettevõtte strateegiat, et langetada õigeid otsuseid ja hakata otsima uusi väljakutseid. Need pereettevõtted, kes ei ole koostanud konkreetset strateegiat, on väiksema pingetaluvuse ja otsustusvõimega. Alati on strateegia tulemuslik rakendamine tunduvalt keerulisem kui strateegiate kujundamine, sest strateegiate elluviimine sõltub edukast juhtimisest. Sageli kaasnevad strateegia elluviimisel muutused pereettevõtete struktuuris, mõningaid äriprotsesse tuleb teisiti korraldada saavutamaks efektiivsemaid tulemusi. Näiteks kui 1000 pealises veisekarjas võtta kasutusele

lüpsirobot, väheneb koheselt tööjõukulu, endise viie töötaja asemel saab rakendust üks.

Enamus maapiirkonna loomakasvatusega tegelevaid pereettevõtteid on Eesti turule suunatud, kuid majandust aitab hoogustada ühistegevus ja eksportimine. Pereettevõtjatele on üheks võimaluseks koostöö mitte ainult ühistutega vaid ka teiste pereettevõtjatega. Seega peavad paljud pereettevõtteid kujundama ümber strateegia, mille muutmine on ellujäämise üheks tingimuseks. Väga raske on seda selgeks teha vanema põlvkonna pereettevõtjatele, kes on harjunud sissetallatud rada käima. Pereettevõtluse mitmekesisemaks muutmiseks on vajalik lisaks olemasolevatele oskustele mitmeid lisaoskusi: turu tundmist, ärijuhtimist, strateegia kujundamist, klienditeenindust, meeskonnatööd, pingetaluvust jms. Pereettevõtjatel vaja erilist tähelepanu pöörata pereettevõtete strateegiale ja strateegilisele juhtimisele, et tagada ellujäämine, eriti praeguses majandussituatsioonis. Pereettevõtjad peavad olema valmis muutusteks, milleks valmisoleku tagab korrektselt vormistatud kirjalik strateegia olemasolu.

### **Kokkuvõte**

Seadusandluses puuduvad mõisted „pereettevõtja“ ja „pereettevõtlus“. Autor peab pereettevõtteks ettevõtet, mille tegevuses osaleb ettevõtja perekond. Pereettevõtete üheks iseloomulikuks tunnuseks on see, et pereliikmetele on pereettevõtte peamiseks sissetulekuallikaks. Sageli on pidanud ettevõtjad otsustama, kas valida pere või ettevõtte, maapiirkonna ettevõtjad on leidnud, et parimaks variandiks on pereettevõtte.

Pereettevõtjatel on vaja erilist tähelepanu pöörata pereettevõtete strateegiale ja strateegilisele juhtimisele, nad peavad olema valmis muudatustele, muutustele valmisolekut tagab korrektselt kirjalikult vormistatud strateegia olemasolu. Eriti praegusel ajal, kui ei saa jääda lootma edule ühes tegevusvaldkonnas, tuleb riskide hajutamiseks pöörata erilist tähelepanu strateegia kavandamise erinevatele tasanditele. Paljud pereettevõtteid on riskide hajutamiseks laiendanud tegevust koos strateegiaga muudel tegevusaladel, näiteks veterinaarteenused, turism, puhkemajandus, looma- ja linnukasvatus, metsandus või põllumajandus. Omaniku poolt juhitud pereettevõttes toimub strateegia väljatöötamine sageli mitteformaalselt, seda ei panda paberile, see eksisteerib omaniku peas ja on suuliselt edastatud pereliikmetele ja lähimatele kaastöötajatele. Siiski enamus pereettevõtjaid juhindub esmalt enda poolt püstitatud reeglite ja oma tunnetest ning alles siis kui pereettevõtlus ei arene soovitud kiirusega hakatakse mõtlema strateegia kujundamisele.

Need pereettevõtteid, kes suudavad koheselt ümber orienteeruda ja muuta püstitatud strateegiat, saavutavad edu ning väldivad pereettevõtte läbikukkumist. Enamus maapiirkonna loomakasvatavate pereettevõtteid on Eesti turule suunatud, kuid majandust aitab hoogustada ühistegevus ja eksportimine. Pereettevõtjatele on üheks võimaluseks koostöö mitte ainult ühistutega vaid ka teiste pereettevõtjatega. Seega peavad paljud pereettevõtteid kujundama ümber strateegia, mille muutmine on ellujäämise üheks tingimuseks. Sageli kaasnevad strateegia elluviimisel muutused

pereettevõtete struktuuris, mõningaid äriprotsesse tuleb teisiti korraldada saavutamaks efektiivsemaid tulemusi. Pereettevõtluse mitmekesisemaks muutmiseks on vajalik lisaks olemasolevatele oskustele mitmeid lisaoskusi: turu tundmist, ärijuhtimist, strateegia kujundamist, klienditeenindust, meeskonnatööd, pinge-taluvust jms. Alustavad pereettevõtjad on õpihimulisemad ja avatumad ning soovivad omandada teadmisi, milleks kasutavad kõiki võimalusi maksimaalselt: kuuluvad ühistutesse, kasutavad nõustamisteenust ja otsivad kontakte sama tegevus-valdkonna pereettevõtjatega.

Üheseid juhiseid pereettevõtetele anda ei saa. See, mis võib toimida hästi ühe pereettevõtte juures, ei pruugi toimida teise juures. Iga pereettevõtte peab võtma vastu selliseid strateegilisi otsuseid, mis ainult neile sobib ja arvestama enda pereettevõtte omapära ja võimeid. Pereettevõtjad on veendunud, et tugeva perekonna ja õige strateegiaga tagatakse eesmärkide täitumine ning suudetakse teenida kasumit. Autori poolt uuritud aastate 2006...2009 pereettevõtete omanikest 98% osaleb aktiivselt pereettevõtte juhtimises, 40% pereettevõtjatel on korrektselt vormistanud strateegia tagamaks jätkusuutlikku pereettevõtte arengut. Strateegiad on koostatud kirjalikult, esitatud on konkreetne visioon, missioon ja eesmärgid. Kõik need pereettevõtjad, kes on koostanud pereettevõtte strateegia, jälgivad koostatud strateegiat, korrigeerivad igal aastal püstitatud eesmärgi ja täiendavad meetodeid, et lühiajalisi eesmärgi paremini ellu viia. 58% lihase- ja 32% hobusekasvatajatest pereettevõtjatel on olemas korrektne planeerimissüsteem, mis aitab neid pere-ettevõtte strateegia elluviimisel. Pereettevõtjad soovivad selleks, et tegutseda jätkusuutlikult ja olla konkurentsivõimelised riigipoolset abi rahaliste vahendite osas.

Pereettevõtete kohta on vaja läbi viia süvauuringuid, et teadvustada nende positsiooni turul, tuua välja organisatsioonikultuuri eripära ja probleemid, mis tekivad seoses põlvkonnavahtusega.

## **CO<sub>2</sub> KAUBANDUSE MÕJU ELEKTRITOOTJATELE ERINEVATE ENERGIALLIKATE KASUTAMISEL EESTI TINGIMUSTES**

Jüri Kleesmaa  
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Eesti on koos maailma teiste riikidega valinud säästva arengu tee, kus riikide heaolu kasvu aluseks on tasakaalu saavutamine loodusvarade ja keskkonna säästliku kasutamise vahel.

Euroopa Liidu (EL) direktiiviga 2003/87/EÜ, 13. oktoober 2003, on loodud kasvuhoonegaaside (KHG) saastekvootidega kauplemise süsteem, mille eesmärgiks on suunata ühiskonda tõhusamale ressursikasutusele ja innovatsioonidele, teadvustada fossiilsete kütuste põletamisel tekkiva CO<sub>2</sub> (süsinikdioksiidi) kahjustusi ja nende rahalist kulu ühiskonnale, tõhustada Kyoto protokolliga kehtestatud kohustuste täitmist kasvuhoonegaaside heitkoguste vähendamisel.

Käesoleva artikkel fikseerib olulisemad Eesti energeetikat ja majandust puutuvad asjaolud ja faktid, mis on tähtsad autori poolt koostamisel oleva uuringu „Kasvuhoonegaaside lubatud heitkoguste kauplemise mõju Eesti energeetika-majandusele“ arendamiseks ja põhiseisukohtade mõistetavaks tegemiseks.

Artiklis on toodud olulisemad faktid Eesti CO<sub>2</sub> kaubanduse esimese (2005-2007) ja teise (2008-2012) kauplemisperioodi kohta, on kirjeldatud Eesti elektritootmist baasaastal 2007 kehtiva elektrimajanduse arengukava alusel ning sellest tulenevalt CO<sub>2</sub> heitkoguste arvutust kasutatud kütuste järgi. Artikkel puudutab põhilisemaid taastuvenergeetika toetusega seotud seadusandlusest tulenevaid seisukohti, mis oluliselt mõjutavad taastuvenergeetika arendust ja kaudselt CO<sub>2</sub> kaubandust. Analoogselt baasaasta 2007 arvutusmetoodikale on arvatud CO<sub>2</sub> heitkogused aastaks 2020. Elektritootmise prognoos aastaks 2020 baseerub autori elektrimajanduse arengukava interpretatsioonil.

CO<sub>2</sub> kvoodikaubandus on sümbioos energeetikast ja finantsmaailmast, mis on oluline kõigile energiatootjatele ning muudele kvoodikaubandusse haaratud tööstusharudele. Läbi energiahindade mõjutab CO<sub>2</sub> kaubandus aga ka kõiki ettevõtteid, kes energiat tarbivad. Käesolev artikkel on üks kavandatud artiklite seeriast, mis on koostatud uuringu „Kasvuhoonegaaside lubatud heitkoguste kauplemise mõju Eesti energeetikamajandusele“ raames.

Euroopa Liidu kliima- ja energiapaketi (hakkab kehtima aastal 2013) kaasnevad mõjud energeetikasektorile vajavad täiendavat süvaanalüüsi ja selles artiklimaterjalis neid ei käsitleta.

KHG saastekvootide kauplemise süsteem 2005-2007 oli kui treeningetapp. Kasulikkus oli piiratud, kuna puudus pangandus 1. ja 2. etapi vahel ning ühikud olid ülehinnatud. Ühikute ülehindamise tulemusena nende hind perioodi lõpuks lähenes



0-le. Põhjuseks pakkumise ja nõudluse vahekorra muutus tööstussektori aktiivse turundustöö tulemusena.

2008. aastal alanud uueks kauplemisperioodiks, nn Kyoto esimeseks kauplemisperioodiks Euroopas (2008-2012), tegi Euroopa Komisjon väga radikaalseid kärpeotsuseid liikmesriikidele lubatavate heitkoguste üldsummas (nn Riiklik Jaotuskava RJK), et stabiliseerida ja ära hoida eel-Kyoto kauplemisperioodil valitsenud olukorda. 2008-2012 kauplemise perioodiks tegi Eesti ettepaneku Euroopa Komisjonile (EK) 24,4 mln tonni kohta aastas (122 mln t/5a). EK vähendas kvoote 12,7 mln tonnile (63,5 mln t/5a), so ca 52%.

Eesti on suutnud pidevalt katta oma elektrivajaduse ning ka eksportinud elektrienergiat. 2007. a statistikaandmete alusel toodeti elektrit 12 188 GWh, millest põlevkivienergia moodustab 93,6%. Välisõhku paisatav CO<sub>2</sub> kogus 2007. a elektrienergia tootmises ja tarbimises erinevate kütuste füüsikaliste näitajate ja koostootmisel tekkiva CO<sub>2</sub> eriheite (1,05 ktCO<sub>2</sub>/GWh) arvutamise tulemusena on ca 12,8 Mt.

Arvestades CO<sub>2</sub> kvootide olulist vähendamist ning EL-i algatust taastuvenergia praegusest tunduvalt laiemaks kasutamiseks, on taastuvenergeetika näol tegemist kiiresti areneva valdkonnaga. Eestis leiab taastuvenergia allikatest kasutust peamiselt tuul ja biomass ning vähesemal määral ka vesi ja biogaas. Elektrimajanduse arengukavas 2005-2015 seati ülesandeks saavutada aastaks 2010 taastuvenergia osakaaluks 5,1% brutotarbimisest ning aastaks 2020 soojuse- ja elektri koostoomise jaamades toodetud elektri osakaaluks 20% brutotarbimisest. 2007. aastal moodustas taastuvelekter 1,75% brutotarbimisest. 2010. aastaks valmivate uute taastuvelektri tootmise projektide potentsiaalne toodang ületab seatud eesmärgi.

2020. a elektri- ja soojuse koostootmisjaamades toodetud elektri osakaalu 20% brutotarbimisest saavutamiseks on 2007. aastal rakendunud koostootmise toetus-skeemid (Elektriturseadus 2003) soodustanud uute koostootmisjaamade rajamist (2009. a valmisid koostootmisjaamad Tallinna Elektri jaam ja Tartu Elektri jaam) ning koostootmise osakaal on suurenemas (ehitamisel Pärnu Elektri jaam ja planeerimisel veel mitmed väiksemad koostootmisjaamad Eesti erinevates piirkondades). Soodustus aktiveerib hüppeliselt investorite ja energiatootjate huvi bioenergia kasutamise vastu.

28. jaanuari otsusega muutis Riigikogu elektriturseaduse taoliselt, et tootjal on õigus saada põhivõrguettevõtjalt toetust alates 2010. aasta 1. juulist elektrienergia eest, kui ta on selle tootnud biomassist tõhusa koostootmise režiimil, välja arvatud juhul, kui biomassist toodetakse elektrienergiat kondensatsioonirežiimil.

Eesti elektrimajanduse arengukavas on rõhutatud, et põlevkivi on Eesti strateegiline maavara ja põlevkivist elektri tootmine on Eesti energeetika eripära – ligi 94% elektrienergiast toodetakse põlevkivist.

Arvestades elektrimajanduse arengukava parimat tulevikustsenaariumi, tuleb 2014. aastaks suurendada koostootmisjaamade võimsust 300 MW-ni (netovõimsusega tipuajal 260 MW), 2015. aasta lõpuks rajada 2x300 MW (netovõimsus 270 MW) põlevkivi keevkihtplokkid, aastaks 2012 aga paigaldada neljale olemasolevale 200 MW vanale põlevkiviplokile väävli- ja lämmastikuheitmete püüdmise seadmed (netovõimsus 4x150 MW), aastaks 2013 suurendada maismaatuulikute võimsust 400 MW-ni. Kõikide nende võimsuste investeringuotsused tuleb teha enne 2010. aasta lõppu.

Järgnev tuuleparkide võimsuse suurendamine on otstarbekas merel, kuid vajab täiendavaid uuringuid. Tuulikute võimsuse ulatuses tuleb rajada ka tootmisvõimsused, mis tasakaalustaksid tuulikute toodangu ebastabiilsust ning kataksid ka tarbimise tippe. Pärast põlevkiviõlil töötavate gaasturbiinide kasutusse võtmist eeldatavalt aastast 2018 võib kaaluda Narva elektrijaamade puhastusseadmetega plokkide osalist sulgemist.

Avariireservjaamade võimsuse suurenemise vajadus 2016. aastal on tingitud Estlinki 2 merekaabli (eeldatava võimsusega 600 MW) valmimisest.

Sellise ülekandevõimsuse suurendamine on ka üheks eelduseks Balti riikide tulevase energiaturu integreerimiseks Põhjamaade energiabörsiga Nord Pool Spot. Lisaks sellele suurendab uus ühendus ka Balti energiasüsteemide töökindlust, vähendades samal ajal nende sõltuvust Venemaast. Eesti ja Soome vahelise teise ühenduse eelseid analüüsiit regiooniüleses uuringus, milles osalesid Nordel, BALTSO ja Poola piirkonnad ning mis valmis 2009. aasta veebruaris. Tulemused näitavad selgelt, et plaanitav ühendus on Läänemere regioonile sotsiaal-majanduslikult kasulik.

2020. a prognooside tagajärjel võiks olukord kardinaalselt muutuda, st põlevkivi-energeetika osatähtsus kahaneb ca. 40%-le, samas taastuvenergia osakaal suureneb ca. 31%-le.

CO<sub>2</sub> arvutusmetoodika kasutamise tulemusena saame aastaks 2020 CO<sub>2</sub> heitkoguseks ca 5,7 Mt (miljonit tonni). 2020. aastal võrreldes 2007. aastaga elektrienergia sisetarbimine suureneb, mis 2007. a oli ca 8 200 GWh ja 2020. a 10 480 GWh, st kasv on ca 22%. CO<sub>2</sub> emissiooni vähenemine on põhjustatud planeeritavate taastuvate ja gaasil töötavate elektrijaamade erinevate energiaallikate kasutuselevõttust võrreldes 2007. a kasutatavatega. Põlevkivienergeetika osatähtsus väheneb 83%-lt 44%-le, mis omakorda vähendab CO<sub>2</sub> heitmeid ca 12 Mt-lt 4 Mt-ni.

Vastavalt riiklikule jaotuskavale 2008-2012 eraldatakse CO<sub>2</sub> heitmekaubanduse skeemis osalevatele energiaettevõtetele EL kaubandusskeemis 12,7 MtCO<sub>2</sub> kvotee aastas, siis elektrienergia tootmise 2,2%-st kasvu arvestades jääb meil vajalikke kvotee puudu (12,8 MtCO<sub>2</sub>/a2007), mis tuleb kaubandussektorist juurde muretseda. Juhul kui Euroopa Komisjon arvestab Euroopa Kohtu otsust Eestile eraldatud kvoodikogust positiivses suunas muuta (milles autor kahtleb), siis Eestil jääks

süsinikdioksiidi kvoote üle (ca 12 Mt/a) ja energiatootjatel tekib võimalus neid kasutada energiatootmise tõhustamiseks ja tarbijasõbralikumaks muutmiseks.

Arvestades prognoosi, et elektrotoodangu eksport jääb 2007. a tasemele, st ca 3 MtCO<sub>2</sub>, oleks CO<sub>2</sub> heitmekoguseks aastal 2020 ca 9 MtCO<sub>2</sub>, st ca 30% vähenemist võrreldes aastaga 2007. Kuna pärast 2012. aastat kehtima hakkavad kvoodikaubanduse reeglid ei ole veel päris selged, siis arendatakse teemat edasi järgmistes artiklites.

Arvutustulemuste põhjal näeme, et peamised kohad, kus on võimalik energiat säästa ja CO<sub>2</sub> heitmeid vähendada, on energia tarbimine, võrgukaod, eksport ja omatarve.

Eesti elektrimajanduse arengukavas aastani 2018 toodud parima stsenaariumi elluviimiseks, et tagada elektritootjate konkurentsivõime vabaturumajanduse tingimustes mõjutatuna CO<sub>2</sub> heitmekaubanduse mõjudest, tuleb kindlustada nende jaamade teke siseriiklike reguleerimisega toetuskeemide, riigiabi, maksupoliitika ja seadusandlike meetmete abil. CO<sub>2</sub> kvoodieraldamise poliitika pärast 2012. aastat vajab täiendavat analüüsi.

# PROJEKTJUHTIMISE ARENDAMISE POLIITIKA

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## Sissejuhatus

Kaasajal suureneb ajutiste ülesannete ja tegevuste, mida korraldatakse ja juhitakse projektide ja programmide kaudu, osakaal. Selline trend on iseloomulik igasugustele organisatsioonidele, nii era- kui ka avalikku ja mittetulundussektoris kuluvalate. Seetõttu vajab enamik organisatsioone kogu maailmas üha enam oskajaid projektijuhte ning on sunnitud ka arendama üldist projektijuhtimise alast võimekust. Selle taustal võib tunduda üllatav, et ühiskonna (ehk riiklikul) tasandil ei ole pööratud projektijuhtimise arendamisele üldse tähelepanu ja seda kogu maailmas, sh arenenud tööstusriikides. Teisisõnu, projektijuhtimise alase võimekuse (või ka küpsuse) tase ei ole teadvustunud kui makrotasandi (majandus)poliitiline probleem. Antud artikkel püüab seda vajakajäämist ületada, tehes seda läbi kahe eesmärgi. Esiteks – selgitada projektijuhtimise alase võimekuse arendamise ja vastavate poliitikate olulisust ning teiseks – visandada põhijoontes projektijuhtimise arendamisele suunatud poliitika.

## 1. Projektijuhtimise olemus ja areng

Projektijuhtimise (edaspidi ka PJ) kui nähtuse vanus on ilmselt võrreldav inimkonna vanusega, kuid vastav akadeemiline distsipliin on üllatavalt noor – rääkida saab vaid umbkaudu pooldest sajandist. Võib lisada, et veel 1970-ndate lõpul peeti projektijuhi ametit juhuslikuks ning omaette kutsena kinnistus see alles 20. sajandi lõpus. Kuna tegu on vana nähtusega, on aegade jooksul muutunud selle sisu ja ka määratlused kuid ühtsust veel märgata ei ole, kasutusel on hulk erinevaid määratlusi. Cleland ja Ireland (2006) toovad välja olulise üldise tunnuse: projektijuhtimist on (ja seda juba rudimentaarsest ehk eelajaloolistest vormides) rakendatud innovatsioonide esilekutsumisel ja juhtimisel ühiskonnas. Viimastel aastakümnetel on PJ kui eriala areng olnud märkimisväärne ja selles oluline roll globaalsetel erialaorganisatsioonidel. Suurimad ja mõjukaimad neist on PMI (*Project Management Institute*) ning IPMA (*International Project Management Association*). Need on välja töötanud ka omad kutsestandardid ning korraldavad üle maailma aktsepteeritavate kutsete omistamist.

Üldiselt on teada (nt Cicmil *et al.* 2009), et projektide ja ka projektipõhiste juhtimist rakendatakse tänapäeval üha rohkem. Seetõttu on hakatud rääkima üha süvenevast projektorientatsioonist (*project orientation*) ja/või projektistumisest (*projectization / projectification*), seda organisatsioonide (sh nii era-, avalikku kui mittetulunduslikku sektoris kuuluvate), samuti regioonide ja riikide ning isegi üksikisikute tasandil. Analüüsides projektistumise arengut rõhutavad Maylor *et al.* (2006), et asi ei ole mitte niivõrd projektipõhiste tegevuste osakaalus, vaid muutustes, mis organisatsioonides selle tõttu toimuvad. Lisaks pakuvad (*Ibid.*) uue termini – programmistumine, mis tähendab programmide ja projektiportfellide rakendamist juhtimismehhanismidena.

## 2. Projektijuhtimise suhted sidusaladega

Lisaks sissejuhatavas osas välja toodud seosele innovatsiooniga on projektijuhtimine seotud ka ettevõtlusega. Seos projektijuhtimise ja ettevõtluse vahel on seni toimunud eeskätt innovatsiooni kaudu; nõ otsestest nende vahel oli minimaalne isegi veel paar aastat tagasi. Kui seni keskendus PJ alane kirjandus (peaaegu eranditult<sup>1</sup>) suurtele organisatsioonidele (ja ka suurtele projektidele), siis mõne viimase aasta jooksul on toiminud märgatav areng. Tõsisemaks läbimurdeks võib pidada möödunud (2009) aastal ilmunud artiklit<sup>2</sup>, milles R. Turner, A. Ledwith ja J. Kelly tõdeavad: „Väikesed ja keskmised ettevõtted vajavad vähem bürokraatlikke projektijuhtimise versioone... (st meetodikaide ehk 'tööriistu' – AK)“. Seega võib öelda, et PJ on juba seostunud väikeettevõtete juhtimisega (*small business management*), kuid seos ettevõtlusega jääb lahtiseks, õigemini sõltuma sellest, kuidas seostuvad väikeettevõtete juhtimine ning ettevõtlus. Kuigi enamuse arvates need seostuvad (mõnede arvates peaaegu samastuvad), on ka erinevaid seisukohti, kuid selle, samuti PJ ja ettevõtluse suhete põhjalikum selgitamine ei mahu antud konverentsartikli raamesse. Tõdeda võib, et PJ ja ettevõtlus lähenevad; kuigi otsest seost nende vahel on täna veel vähe märgata, ilmnevad mõned paralleelid ka järnevas ettevõtluse ja ettevõtluspoliitika käsitluses.

## 3. Projektijuhtimise olulisus

Eelviidatud Turner *et al.* (2009) on lisanud uut teadmist ka projektipõhiste tegevuste osakaalu kohta majanduses – kui varasemalt on hinnatud nende osakaaluks kuni üks neljandik, siis eelnimetatute hinnangul on see (vähemalt) üks kolmandik. Hinnangu täpsustus toetub nende uurimistulemustele, mille järgi VKEdes (väike- ja keskmistes ettevõtetes) on keskmiselt üks kolmandik käibest projektipõhine. Arvestades VKEde osakaalu majanduses (mis üldiselt teadaolevalt on märkimisväärselt suur) teevad nad üldistuse ja väidavad, VKEde projektipõhine tegevus moodustab umbes kolmandiku kogumajandusest. Kuigi nende valim (280 VKEd) ei tundu just piisav globaalseteks üldistusteks, kõlab see (eriti üha projektistavas tänapäeva maailmas) siiski usutavalt. Traditsiooniline osa projektipõhiseid tegevusi maailmamajanduses on uued kapitali-investeeringud. Nende keskmine osakaal on umbes üks viiendik, kuid siin on suured erinevused – kiirelt arenevates majandustes, nagu nt Hiina, on see märksa suurem.

Kuigi ühiskond (riigid) ja ka akadeemilised kogukonnad ei ole veel projektijuhtimist tõsiselt võtma hakanud, on PJ kui eriala areng viimaste kümnendite jooksul olnud eksponentsiaalne. Seda kinnitab globaalsete erialaorganisatsioonide (PMI ja IPMA) liikmeskonna ja nende väljastatud kutsekvalifikatsioonide arvu kasv. Samas on PMI väljendanud muret projektijuhtide järelkasvu üle. Kuna aastatel 2006-2016 läheb USAs pensionile arvukas projektijuhtide põlvkond ning projektipõhistes majandus-harudes on sel perioodil oodata keskmiselt 5,6% kasvu (üldise keskmiselt 3% kasvu

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<sup>1</sup> Siinkohal vääriks äramärkimist üks tähelepanuväärne erand: 1984. a. ilmunud raamat 'Project Management for Small and Medium Sized Businesses', autoriteks H. Kerzner ja H. Thamhain.

<sup>2</sup> 'Project Management in Small to Medium-sized Enterprises: a comparison between firms by size and industry' // International Journal of Managing Projects in Business 2(2) lk 282-296.

taustal), võib tõesti aimata probleemi teravnemist. Tegelikult on probleem juba täna, sest enamikul USA suureettevõtetel on olnud raskusi projektijuhtide värbamisel.

Toodud taustal peaks olema ilmne, et kogu maailma riigid (ehk kogu avalik sektor) peaks teadvustama projektijuhtimise ja sellealaste pädevuste arendamise olulisuse ning hakkama kujundama ja teostama vastavaid poliitikaid.

#### **4. Ettevõtluspoliitika – alus projektijuhtimise arendamise poliitikale**

Ettevõtluse ja projektijuhtimise vahel ilmnevad teatavad sarnasused. Kui nähtused on mõlemad väga vanad (ilmselt sama vanad kui inimkond); vastavad akadeemilised distsipliinid aga on mõlemad suhteliselt noored (saab rääkida umbes 50-60 aastast). Ettevõtluse kui distsipliini kohta on öeldud sama kriitiliselt kui PJ kohta – et see on (veel) eklektiline, kontseptuaalse raamistikuta jne. Teisalt aga on ka ettevõtluse alal viimasel ajal näha olulisi arenguid.

Poliitika vallas on 21. sajandi alguses tekkinud uus lähenemine – ettevõtluspoliitika (*entrepreneurship policy*), kuid tuleb märkida, et see ei ole sama mis traditsiooniline väikeettevõtluspoliitika (*SME policy*). Ettevõtluspoliitika (edaspidi ka E-poliitika) on küll väikeettevõtluspoliitika järglane, kuid märksa laiemas sisuga ja arenenum kui eellane (Lundström & Stevenson 2001). Üleminekus muutub poliitika meetmestik.

Traditsioonilise (VE) poliitika meetmestik (*policy mix*) sisaldab neli elementi:

- 1) turgude jm institutsioonide efektiivse toimimise tagamine seaduste jm regulatsioonide täpsustamise kaudu;
- 2) informatsiooni ja nõuande pakkumine;
- 3) võõrkapitali ja omakapitaliga finantseerimise pakkumine;
- 4) maksustiimulite pakkumine.

Kui mingi riik liigub ettevõtluspoliitika suunas, siis poliitika meetmestik avardub, hõlmates lisaks veel neli elementi:

- 5) sisenemisbarjääride kõrvaldamine;
- 6) ettevõtluse (üldine) edendamine (*promotion*);
- 7) ettevõtlusharidus;
- 8) uute (tugi)struktuuride ja toodete-teenuste loomine (alaesindatud sihtrühmadele).

Lühikommentaaris: esimene on (traditsioonilises majanduspoliitika süstemaatikas) tüüpiline korrapoliitiline eesmärk, mis on ilmselt vajalik kõigi majandussubjektide, mitte ainult (väike)ettevõtjate jaoks. Sisenemisbarjääride juures on kaheldav nende kõrvaldamise võimalikkus (nt kui ettevõtlusse soovijal ei piisa kapitali, võidakse teda toetada, kuid enamasti nõutakse ka arvestatavat omaosalust), kuid neid barjääre (eriti kõikvõimalikke lõive ja bürokraatlikke tõkkeid) saab märksa 'madalamaks' suruda. Ettevõtlushariduse juures tuleks rõhutada, et selles on rõhuasetus pigem üldharidusel ja inimeste üldisel harimisel, mitte niivõrd ettevõtluse kui eriala õpetamisel.

Lundström & Stevenson (2001) eristavad järgmisi ettevõtluspoliitikate tüüpe:

- Väikeettevõtluspoliitika laiendus (lisandub laiema ettevõtluspoliitika elemente);
- Nišši-ettevõtluspoliitika, mis keskendub teatud gruppidele, eristuvad kaks alaliiki:
  - alaesindatud grupid (nt naised, rahvusvähemused jne),
  - kõrgeima kasvupotentsiaaliga grupid (nt teadlased jms, mistõttu nimetatakse ka „*techno-entrepreneurship policy*“)
- Uusettevõtluse poliitika (võib ka keskendada teatud sihtrühmadele, nt naistele);
- Terviklik ettevõtluspoliitika (mida peetakse kõige täiuslikumaks).

Ettevõtluspoliitika institutsioonide hulgas eristatakse (*Ibid.*) järgmisi tüüpe:

- katusorganisatsioonid spetsiaalsete ametitega;
- horisontaalne, mitme-ministeeriumi mudel (mida peetakse kõige täiuslikumaks);
- vertikaalne mudel.

Ettevõtluspoliitika põhielemendid on (*Ibid.*):

- 1) regulatiivne keskkond alustajale,
- 2) ettevõtluse üldine edendamine,
- 3) ettevõtlusharidus,
- 4) väikeettevõtlust toetav infrastruktuur,
- 5) sihtrühmadele suunatud strateegiad,
- 6) ligipääs finantseerimisele ja seemnekapital.

Ettevõtluspoliitika põhieesmärk on stimuleerida ettevõtlust – et võimalikult palju inimesed looks oma ettevõtte. Siin aga on loogiline piir: kui kõik tööeas inimesed looksid oma ettevõtte, ei oleks võimalik leida ühtki palgatöölist ehk tulemus oleks üleüldine *self-employment*, mis ilmselt ei ole efektiivne ühiskonna jaoks. Analoogia abil võib tuletada hoiatuse projektijuhtimise poliitika jaoks – mitte taotleda totaalset projektistumist, mis tähendaks, et kogu inimtegevust hakataks korraldama ajutiste struktuuride abil. Ilmselt ei oleks seegi ühiskonna seisukohalt efektiivne, kuigi mõne paadunud projektistumise apoloogeedile võib see tunduda ihaldusväärseks.

## 5. Projektijuhtimise arendamise poliitika visand

Projektijuhtimise arendamise poliitika (edaspidi ka PJ-poliitika) visandamiselt on toetunud eelnevas refereeritud ettevõtlus- ehk E-poliitika põhielementidele, kuid kõik need ei ole (vähemasti mitte võrdväärselt) relevantssed PJ-poliitika jaoks. Hinnates nende relevantssust ja rakendatavust selgus, et mõned E-poliitika elemendid (nagu nt ettevõtluse üldine edendamine ja ettevõtlusharidus) on üsna otseselt üle kantavad ka PJ-poliitikasse, kusjuures mõnes komponendis piisab sõna 'ettevõtlus' asendamisest sõnaga 'projektijuhtimine'. Selgus ka, et kõik E-poliitika elemendid on vähemasti mingil määral relevantssed ka PJ-poliitikas – seos võib olla kaudne, kuid on siiski olemas. Näiteks „regulatiivne keskkond alustajale“ ja „ligipääs finantseerimisele ja seemnekapital“ võivad näida nõ puht-ettevõtluslikena, kuid toetavad mõlemad ka ideed (Turner *et al.* 2009), et väike- ja keskettevõtteid vajavad vähem bürokraatlikke projektijuhtimise meetodikaid ehk 'tööriistu'. Seejuures tuleb muidugi mõnda, et E-poliitika elemendi „regulatiivne keskkond alustajale“ mõte on ettevõtjatele peale sunnitud bürokraatia vähendamiseks – suurte organisatsioonide vajadustest lähtuvalt

välja töötatud (ja seetõttu bürokraatlikke) projektijuhtimise metoodikaid rakendama ei saa kedagi sundida. Teisalt aga on ikkagi tegemist peaaegu sunnivolukorraga, kuna sobivamaid metoodikaid veel lihtsalt ei ole. Seos on olemas ka elemendiga „ligipääs finantseerimisele ja seemnekapital“ – ilmneb asjaolus, et lisaraha vajadus ettevõtetes tekib normaalselt siis, kui on tegemist nõ revolutsiooniliste arengufaasidega (nt asutamine, laiendamine jms), mis olemuselt on projektid. Seega võib järeldada, et parem projektide kavandamine ja teostamine (eriti veel sobiva metoodika abil) võib toetada väikeettevõtjate kergemat juurdepääsu välise finantseerimise allikatele, sh tugisüsteemide poolt pakutavatele, mis üldjuhul on samuti projektipõhised. Ülevaade E-poliitika alusel sünteesitud PJ-poliitika põhielementidest on alljärgnevas tabelis 1.

**Tabel 1.** Projektijuhtimise poliitika põhielemendid

<b>PJ-poliitika elemendid</b>	<b>Olulisus</b>	<b>Selgitused ja seosed E-poliitika elementidega</b>
1) projektijuhtimise edendamine	Kõrge	Vastav element E-poliitikas sobib üle võtta täies mahus.
2) projektijuhtimise-alane haridus	Kõrge	Samuti sobib üle võtta täies mahus. E-poliitikal ja PJ-poliitikal on siin palju ühist, seega saavad need üksteist toetada ja see võimaldab säästa ressursse.
3) projektijuhtimist toetav infrastruktuur (on kombineeritav olemasoleva VE toetava infrastruktuuriga)	Keskmine-kõrge	Osa uuendusi E-poliitikas on otse üle võetavad PJ poliitikasse; osa on rakendatavad kaudselt ja tuleb kohandada. Olemasolevad ettevõtluskeskused võiks toimida ka kui 'projektijuhtimise keskused'.
4) sihtrühmadele suunatud strateegiad (sh strateegia VKEde jaoks ning neile sobiv PJ metoodika)	Keskmine (ilmselt tõusev)	E-poliitika sihtrühmad on relevantset, kuid PJ-poliitikas peaks VKEd olema eriline sihtrühm. Prioriteet selles oleks VKEde vajadustest lähtuv, lihtsustatud ja vähem bürokraatlik PJ metoodika.

Nagu nähtub, ei pea PJ-poliitika alustama 'tühjalt kohalt' ehk võimalusi õppida ning üle võtta E-poliitikast on piisavalt, kuid ülevõtmisega ei saa ka liialdada. Positiivne on see, et E- ja PJ-poliitikal on märgatav ühisosa, mis võimaldab üksteist toetades säästa ressursse. Kuna PJ-poliitika jaoks vajalik infrastruktuur on kombineeritav olemasoleva E-poliitika infrastruktuuriga, ei ole vaja luua uut infrastruktuuri, mis on teadagi kulukas. Teisisõnu – olemasolevad ettevõtluskeskused võiks toimida ka kui 'projektijuhtimise keskused'. Mõistagi tingib see vajaduse arendada ja ka täiendada ettevõtluskeskuste personali, aga see on seotud märksa väiksemate kuludega kui uue (ja ilmselt suuresti ka dubleeriva) keskuste võrgu loomine. See argument võib saada väga oluliseks, kui otsustamisele tuleb PJ-poliitika väljatöötamine ja rakendamine. Lõpetuseks rõhutaks, et kui tõelist E-poliitikat ei suuda teostada üks ministeerium vm ametkond, siis PJ-poliitika puhul kehtib see isegi enam.

## **Kokkuvõtte**

Artiklis esitatud ülevaade peaks veenma projektijuhtimise arendamise olulisuses ja vastava poliitika vajalikkuses. Välja pakutud projektijuhtimise poliitika visand võiks autori arvates saada aluseks vastava poliitika reaalsel kujundamisel. Esitatud visand vajaks seejuures edasi arendamist, täpsustamist ja parandamist. Täiendavat uurimist väärriks ettevõtluse ja projektijuhtimise seosed, kuid nende põhjalikum käsitlus ei mahuks antud konverentsiartikli raamidesse.



# TURISMIÜRITUSTE VÕIME GENEREERIDA SIHTKOHALOJAALSUST RIIGI SUHTES: EESTI JUHTUM

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## Sissejuhatus

Globaliseerumise taustal on riigid ja kohad üha rohkem hakanud omavahel konkureerima. Konkureeritakse nii välisinvesteeringute, külastajate, ettevõtete asukoha kui ka kohalike elanike pärast. (Kotler *et al.* 1999) Mida liikuvamad on kapital, inimesed ja ettevõtted, seda rohkem peavad kohad muutma end atraktiivseks. Selle tõttu on eraldi turunduse suunana välja kujunenud kohaturundus (*place marketing*). Kohaturunduse ühte osa, mis tegeleb turistide sihtgrupiga, nimetatakse sihtkohaturunduseks (*destination marketing*). Ürituste korraldamine on üks võimalus sihtkohaturunduse viljelemiseks. Väga palju on uuritud suurürituste mõju sihtriigi imagole ja inimeste teadlikkuse tõusule sihtriigi suhtes. Palju vähem on aga tähelepanu pööratud ürituste võimele genereerida korduvkülastusi. Seetõttu on üsna tavaline, et riigi tasemel toetatakse suurüritusi, mis tekitavad maailmas kära, samas, kui võib-olla mõistlikum oleks toetada hoopis väiksemate ja keskmise suurusega ürituste korraldamist, mis genereeriks riigile lojaalseid külastajaid. Just sellele valdkonnale selle artikli raames keskendutakse.

## Sihtkohaturunduse ja sihtkoha olemus

Kohaturundus on nähtus, mille raames kohalik kogukond, mis ühendab nii omavalitsust, ettevõtjaid kui elanikke, planeerib ja viib ellu erinevaid turundustegevusi, et muuta konkreetne koht atraktiivseks erinevatele sihtsegmentidele. Nendeks segmentideks on elanikud, ettevõtted, investeerijad, turistid jmt. Kohaturundus tähendab koha kujundamist-arendamist viisil, mis rahuldab selle sihtturgude vajadused. (Rainisto 2003)

Nagu öeldud, on kohaturundus suunatud paljudele erinevatele segmentidele. Käesolevas töös keskendutakse neist ainult ühele – turistide segmentile. Turistide segmentile rakendatakse kohaturunduse raames kitsamat käsitlust – „sihtkohaturundust“. Sihtkohaturundus on seotud erinevate turundusmeetmete kujundamisega, et aidata kaasa turismipoliitika tulemuslikkusele ja see peab olema koordineeritud kohaliku strateegilise arenguplaani poolt. Samuti peab sihtkohaturundus juhtima regiooni turismimõjude optimeerimist ja kasude maksimeerimist.

Väga põhjalikult on sihtkoha olemuse erinevaid analüüsinud Framke (2000). Ta jõuab järelduseni, et sihtkoht on koht, millel on olemas identiteet, mille on kujundanud selle kohaga seotud tegevused, huvid, infrastruktuur ja atraktsioonid. Samas toob ta ka välja, et turisti vaatenurgast võib sihtkoht olla mis iganes, mis asub kuskil mingil ajahetkel ja pakub turistile mingit sotsiaalset tegevust. Seega saab eelnevalt järeldada, et sihtkoht võib olla:

- geograafiline piirkond (linn, või riik) – näiteks Pariis

- looduslik või tehislik atraktsioon – näiteks Disneyland Pariisis
- sündmus või üritus - suvaline kontsert või spordiüritus Pariisis.

See, mida keegi nendest sihtkohaks peab, sõltub külastaja eesmärgist. Eeltoodud järeldus on käesoleva töö mõistes väga olulise tähtsusega. Tänu sellele järeldusele on üritusi võimalik sihtkohaturunduse raames vaadata hoopis teise nurga alt. Kui inimene läheb kindla eesmärgiga külastama mingit üritust mingis suvalises geograafilises piirkonnas, siis tema peamine sihtkoht on nimetatud üritus, mitte piirkond. Seda geograafilist piirkonda saab käsitleda kui tasuta tootenäidist, mis antakse kliendile põhitootega kaasa. Põhimõtteliselt peaks hakkama toimima sama mehhanism kui siis, kui klient läheb poodi pesupulbrit ostma ning saab pulbriga kaasa tasuta pesuloputusvahendi näidise. Kui kliendile see näidis meeldib, siis suureneb tõenäosus, et järgmine kord läheb klient juba teadlikult pesuloputusvahendit ostma (vt. järgmine lõik). Sama moodi, kui ürituse külastajale geograafiline piirkond meeldib, peaks suurenema tõenäosus, et järgmine kord tuleb ta korduvkülastajana tagasi ja siis on juba sihtkohaks geograafiline piirkond ise.

### **Tasuta tootenäidis kui kordusoste tekitav müügiendendusmeetod**

Müügiendenduse mõju müügile on uuritud juba alates 1980-datest. Degusteerimine on teistest müügiendendusmeetoditest selles suhtes erinev, et tema puhul on tõestatud ära pikaajaline, kliendi lojaalsust ja kordusoste tekitav mõju. See mõju tuleneb õppimisest, mis baseerub ostukogemusel (Gedenk *et al.* 1999). Paljudel juhtudel ei oska inimesed enne tarbimist kauba väärtust ja endale sobimist adekvaatselt hinnata. Läbi degusteerimiste või tasuta näidiste tarbimise on kliendil võimalik hinnata konkreetse kauba omadusi võrreldes varasemate kogemustega teiste kaupadega ja kui need omadused on teistega võrreldes paremad hakkab inimene konkreetset brändi teistele eelistama. Samuti võib inimene tulevikus eelistada brändi, mille kohta on tal olemas positiivsed kogemused, brändile, mille osas tal kogemused puuduvad (*structural state dependence*).

Tuues eelneva käsitluse käesoleva artikli konteksti, tekib ürituse külastajal võimalus kogeda kaasneva tasuta tootenäidise ehk geograafilise piirkonna omadusi ja selle alusel konkreetse piirkonna väärtust enda jaoks hinnata. Kui ta tuleb korduvkülastajana sinna geograafilisse piirkonda tagasi, on ta seda piirkonda teistele piirkondadele piirkonna paremate omaduste tõttu eelistanud või on ta teinud turvalise valiku, eelistades piirkonda, millega ta on eelnevalt põgusalt kokku puutunud piirkondadele, mille osas tal info ja kogemused puuduvad.

### **Korduvkülastus kui kliendi lojaalsuse väljendus**

Kliendi lojaalsuse võib jagada üldjoontes kaheks – käitumuslikuks ja emotsionaalseks. Käitumusliku lojaalsuse puhul on tähtis fakt, et klient käitub lojaalselt, ostes või tarbides pidevalt ühe pakkuja tooteid, teenuseid või konkreetset brändi. Samas ei pruugi kliendil selle pakkuja või brändiga tegelikult mingit

emotsionaalset sidet olla. Emotsionaalse lojaalsuse puhul on aga oluline, et kliendil on olemas konkreetse pakkuja või brändiga emotsionaalne side.

Jacoby ja Chestnut (1978) toovad välja, et lojaalsust saab analüüsida agregeeritud ehk makro ja indiviidi ehk mikrotasandil. Esimesel jälgitakse ainult käitumist ning teisel uuritakse pigem suhtumist ja põhjuseid, miks inimesed lojaalselt käituvad. Oppermann (2000) soovib sihtkoha lojaalsust analüüsida pigem agregeeritud tasandil, ehk jälgida vaid korduvkülastusi, kuna reisisihtkoha valik on kõrge osalusmääraga tegevus ja seetõttu juhuslikult või vastumeelsesse sihtkohta üldjuhul tagasi ei pöörduta. Korduvkülastuse toimumine peaks viitama sellele, et kliendil on sihtkoha suhtes tekkinud emotsionaalne või funktsionaalne lojaalsus. Samas on olemas ka muid võimalusi. Näiteks on leitud, et üks korduvkülastuse põhjus on sihtkoha eelnev tundmine. See tuleneb riski vältivast käitumisest – isegi veidi rahulolematu turist võib sihtkohta tagasi pöörduda, sest tundmatu sihtkoha külastamisega võivad kaasneda veelgi suuremad ebameeldivused. Seega võib korduvkülastuse toimumine viidata ka inertse lojaalsuse olemasolule. Kuusik, Ahas ja Tiru (2009) leidsid, et korduvkülastus võib olla tingitud ka sunnitud lojaalsusest – näiteks kaugsõiduautojuhid, kes peavad sihtkohta tihti külastama, meeldib see neile või mitte, kuna nad täidavad tööülesandeid.

Kokkuvõtvalt võib öelda, et korduvkülastus võib näidata nii emotsionaalse (inimesel sihtkoht meeldib), funktsionaalse (inimesele on mingil põhjusel kasulik külastada), inertse (inimene kardab minna tundmatuse kohta) kui ka sunnitud lojaalsuse (inimene toovad sihtkohta tagasi tööülesanded) olemasolu. Sihtkoha degusteerimise tõttu toimunud korduvkülastus peaks eelkõige viitama kas emotsionaalsele või inertsele lojaalsusele.

## **Ürituste mõju sihtkohale**

Üritused on olulised turismi mõjurid ja nad on sihtkohtade juhtimis- ja turundusplaanides alati olulisel kohal esindatud. Üritused ja sündmused omavad tähtsat rolli ühiskonna ühtsuse välja arendamisel, linnade uuenemisel ja rahvusliku kultuuri edendamisel. Dodds ja Joppe (2001) on toonud välja, et linnade arengustrateegiates on kultuuri ja spordiga seotud megaüritused ja festivalid infrastruktuuri arendamise ja imago loomise kõrval kolme kõige tähtsama strateegilise tegevuse seas. Erinevaid sihtkoha poolseid üritustele omistatud eesmärke ja mõjusid sihtkohale on sihtkohaturunduse alases kirjanduses käsitletud päris palju. Kokkuvõtvalt võib öelda, et üritused aitavad saavutada järgmisi sihtkohaturunduse eesmärke:

- Otsese rahalise tulu genereerimine – turistide kulutused sihtkohas. (Wood 2005; Breen *et al.* 2001; Crompton *et al.* 1994)
- Turistide toomine piirkonda ürituse ajal. (Getz 2008; McCartney 2005)
- Sihtkohale positiivse ja/või eristuva imago kujundamine. (Getz 2008; Hede 2005; Richards *et al.* 2004; Kaplanidou *et al.*)
- Meedia kaudu sihtkoha tuntuse suurendamine (Green 2003)

- Üldiste kohaturunduse eesmärkide täitmine – olla parima paik elamiseks, töötamiseks, investeerimiseks. (Getz 2008; Wood 2005)
- Korduvkülastuste genereerimine (Kaplanidou *et al.* 2007)

Käesolevas artiklis keskendutakse ainult viimasele, suhteliselt vähe käsitletud valdkonnale, ürituste poolt sihtkohta korduvkülastuste genereerimisele.

Otseselt võetakse vaatluse alla,

- kas erinevad üritused genereerivad korduvkülastusi
- Kas need korduvkülastused on põhjustatud riigile suunatud sihtkohalojaalsusest
- või on need külastused põhjustatud üritusele endale suunatud lojaalsusest.

## Metoodika

Külastuste ja külastajate uurimiseks on kasutatud passiivset mobiilse positsioneerimise meetodit, mille algandmed on saadud mobiilioperaatorilt EMT. Positsioneerimisandmete kogumine ja töötlemine toimub järgmiselt. Kõik Eestis EMT võrgus *roaming* kõnesid teinud välismaa telefonid nimetatakse turistideks. Andmed on pseudonümiseeritud, operaator on omistanud kõikidele telefonidele numbrist ja SIM-kaardist sõltumatu juhusliku ID. Juhuslikult genereeritud ID jääb samale telefoninumbrile alati samaks. Kui sama telefon sattub uuesti Eestisse ja operaatori võrku tuntakse see ära ja omistatakse sama ID. Pseudonüümse numbril äratundmise abil uuritakse siin korduvkülastusi. Igal ID-l on rahvus, mis on määratud SIM-kaardi (telefoni) registreerimise riigiga. Inimesed kasutavad tavaliselt majanduslikel põhjustel oma põhilise asukohariigi mobiiltelefoni. Käesolevas töös on vaatluse all ainult välituristide külastused, siseturiste siin ei käsitleta, kuigi vastav metoodika ja andmed on olemas. Iga ID poolt Eestis teostatud kõne on andmebaasis esindatud täpse aja määratlusega: ss.mm.tt.pp.kk.aaaa. Iga ID poolt Eestis teostatud kõne on andmebaasis esitatud võrgukärje (Cell Global Identity; Cell ID; CGI) täpsusega. Andmebaasis on salvestatud *roaming* telefonide (ID) kõik väljuvad ja sisenevad kõnetoimingud (kõne, sms, GPRS jms aktiivne telefoni kasutus) Cell ID täpsusega. Ürituste külastatavuse uurimine toimub ürituse ajal ürituse geograafilises piirkonnas viibinud külastajate telefonide pseudonüümsete ID-de väljaselgitamise teel operaatori võrgus Lähtuvalt EMT turuosast Eestis võib järeldada, et meie andmebaasis on kajastatud ligikaudu pooled välituristid kes Eestit külastasid. Täpseid andmeid ei ole, sest täpsed turuosad on operaatorite ärisaladuseks.

## Tulemused ja arutelu

Tulemustest selgus, et kõik üritused on väga head uute külastajate genereerijad. See läheb müügitoetuse meetodite peamise eesmärgiga – panna kliendid arvama, et just nüüd on õige hetk midagi osta või tarbida. Uusi külastajaid ligi meelitavad üritused on eelkõige kindla teema ja auditooriumiga üritused, jalgpallimats, üliõpilaslaulupidu, karate EM ja Metallica kontsert suutsid kõik tuua olulisel hulgal uusi külastajaid. (70%-80% väliskülastajatest viibisid Eestis esimest korda). Suure

tõenäosusega on nende ürituste külastajate hulk ja uudsus seotud ka välisesinejate, -võistlejate ja -korraldajate suure osatähtsusega. Niisugustel üritustel on mitte traditsiooniliste turistide osatähtsus suur. Majanduslikust seisukohast on need korraldajad-esinejad turistidena kindlasti sama olulised teenuste tarbijad kui traditsioonilised turistid. Samuti on ka neil võimalik muutuda korduvkülastajateks

Korduvkülastuste genereerimise võime osas on variatiivsus suurem. Selgus, et osad üritused, nagu väga spetsiifilised spordivõistlused, ei ole head korduvkülastajate loojad. Tõenäoliselt on tippsportlased ja ka korraldajad liiga pühendunud võitlusteks ettevalmistamisele ja nii ei jää tasuta näidise (ürituse asukohariigi) degusteerimiseks piisavalt võimalust. Samas on kõik tavaturistidele suunatud üritused ja ka kõik kultuuriüritused väga head korduvkülastuste genereerijad. Tulemused näitavad, et riigi näol tasuta näidise pakkumine töötab väga hästi – kümnest üritusest kaheksa puhul tulid ca 30% üritusel viibinud esmakülastajat hiljem tagasi nii, et nende sihtkohaks oli Eesti, mitte enam konkreetne üritus. Seega võib öelda, et riigi pakkumine tasuta tootenäidisena loob riigi suhtes emotsionaalset ja inertset lojaalsust. Kõrvalnähtusena selgus, et osad üritused genereerivad ka lojaalsust enda suhtes. Siin võib olla tegemist nii emotsionaalse, funktsionaalse kui inertse lojaalsusega. Samas on suur hulk üritusel osalejates tõenäoliselt ka sunnitud lojaalsed, töötades selle ürituse heaks.

Antud uuringust saab teha mitmeid järeldusi:

1. PMP meetod on igati sobiv riiklikul tasemel turistide liikumise kohta info kogumiseks, et selle alusel kujundada riigi turismipoliitikat.
2. Ka väiksemad ja keskmise suurusega üritused on olulised sihtkohaturunduse instrumendid. Sellest tulenevalt ei peaks neid laskma erafirmadel iseseisvalt korraldada – sihtkohaturundus tuleb teha kõigi osapoolte koostöös.
3. Kõik üritused ei ole võimelised võrdset teistega sihtkohalojaalsust genereerima. Seetõttu on mõistlik riigi tasemel välja arendada infosüsteem, mille alusel riigi turismipoliitikat kujundada.
4. Selle asemel, et teha kalleid ja ebatõhusaid rahvusvahelisi reklaamikampaaniaid uute turistide riiki meelitamiseks on teatud ürituste abil võimalik pakkuda riiki tasuta näidisena. Siiani pole seda teadlikult ära kasutatud. Pole ühtegi strateegiat, mis oleks suunatud ürituste külastajate tagasimeelitamisele Eestisse. Kuigi vastavalt teooriale, peaks see olema kordades odavam võrreldes uute turistide hankimisega.
5. Osad üritused genereerivad lisaks ka lojaalsust ürituse enda suhtes. See on lisapõhjus, miks riiklikul tasemel peaks rohkem tähelepanu pöörama koostööle ürituste korraldajatega.

## META-ANALÜÜSI ROLL FINANTSKRIISIDE ÜLEKANDUMISE UURIMISEL

Andres Kuusk, Tiiu Paas  
Tartu Ülikool

Finantskriiside ülekandumist riigist riiki on epidemioloogias tulenevast terminoloogias lähtudes hakatud majandusteadlaste seas nimetama nakkuslikkuseks (ka lumepalliefektiks). On täheldatud, et finantskriisid kandusid viimastel kümnenditel ootamatult kiiresti paljudesse maailma riikidesse ning sealhulgas nendesse riikidesse, mis olid tugevad nii makromajanduslike näitajate kui rakendatava finantspoliitika osas. Samuti ei pruukinud nn nakatatud riigid omada kriisi lähteriigiga sarnast majanduse struktuuri.

Finantskriiside kiirest levikust tulenevalt on ka mõistetav, et nende nakkuslikkus ehk kriiside nn lumepalliefekt on rahvusvahelises majanduskirjanduses kujunenud viimastel aastatel oluliseks uurimisteenaks. Olulise tõuke finantskriiside riikidevahelise ülekandumise tõsisemaks uurimiseks andis 1990-te aastate krahhide tagajärgede kiire levik üle paljude maailma riikide. Iseenesest mõistetavalt kaasnes kriiside ja krahhide kiire levikuga ka vastuse otsimine küsimustele, kas finantskriiside puhul saab rääkida nende nakkuslikkusest st ülekandumisest, selle põhjustest, ulatusest ja täpsematest seostest. 2008. aasta finantskriis koos sellele järgneva majandussurutisega on taas teravalt päevakorda tõstnud finantskriiside nakkuslikkuse (edaspidi *finantsnakkus*) uurimise vajaduse. Oluline on finantskriiside kiire ülekandumise õppetunde üldistada ning selgitada võimalusi ja välja töötada meetmeid finantskriiside lumepalliefekti pehmendamiseks.

Kuigi finantskriiside ülekandumise uurimisele on viimastel aastakümnetel pööratud olulist tähelepanu, on lähenemised finantsnakkuse mõistele, aga ka finantsnakkuse uurimisel kasutatavad meetodid ning uuringute tulemused väga heterogeensed. Käesoleva uurimise eesmärgiks on välja selgitada, kas finantskriiside ülekandumist käsitlevate empiiriliste uuringute tulemusi kajastava erialakirjanduse kvalitatiivse analüüsi alusel tehtavad järeldused on kooskõlas nende empiiriliste uuringute põhjal läbiviidava meta-analüüsi tulemustega. Otsime vastust küsimusele, kas arvestades finantsnakkust käsitlevate mõistete, empiiriliste uuringute meetodikate ja tulemuste suurt heterogeensust on meta-analüüsi meetodikale tuginevalt võimalik saada kinnitust finantsnakkuse olemasolule. Eraldi tähelepanu all on siinjuures finantskriiside ülekandumisega seonduvad küsimused Kesk- ja Ida-Euroopa ülemineku-riikide näitel. Eesmärgi saavutamiseks on läbi viidud kvalitatiivne kirjanduse ülevaade senistest olulisematest empiirilistest tulemustest ning seda on täiendatud kvantitatiivse analüüsiga meta-analüüsi raamistikku ja metodoloogiat kasutades. Autoritele teadaolevalt ei ole finantsnakkuslikkuse uurimiseks meta-analüüsi seni veel kuigi ulatuslikult kasutatud.

Oluline on rõhutada, et vaatamata intensiivsele uurimisele ja empiiriliste analüüside rohkusele, pole majandusteadlaste seas seni saavutatud üksmeelt finantsnakkuse täpse definitsiooni ega ka levimiskanalite kohta. Üksmeel on põhiliselt selles osas, et

tarvilik tingimus finantsnakkuse kui nähtuse esinemiseks on finantskriiside ja krahhide ülekandumine kriisi lähteriigist teistesse riikidesse. Erimeelsused tekivad aga selle tingimuse piisavuse suhtes. Osa uurijaid loeb kriiside ülekandumist piisavaks tingimuseks finantsnakkuse olemasolu kinnitamiseks. Teise suuna esindajad väidavad, et finantsnakkuse avaldumise testimiseks on vaja kontrollida ka riikide fundamentaalnäitajate (majanduse suurus ja struktuur, rakendatav poliitika jms) omavahelist korrelatsiooni. Kolmandate arvates leiab finantsnakkuse olemasolu kinnitust vaid siis, kui nakkuse levimise kanalid on pärast kriisi ilmnemist (võrreldes nõ rahuliku ajaga) oluliselt tugevnenud.

Ka finantsnakkuse levimise kanalite osas ei ole majandusteadlased üksmeelsed. Kõige üldisemalt on kriiside ülekandumise kanaleid jagatud fundamentaalseteks ehk stabiilseteks ja investorite käitumisest tulenevateks ebastabiilseteks ühenduskanaliteks. Olulisimateks fundamentaalseteks ühenduskanaliteks loetakse: 1) finantskanalid (*financial linkages*) – riigid on omavahel seotud läbi rahvusvahelise finantsüsteemi; 2) reaalkanalid (*real linkages*) – riigid on seotud läbi rahvusvahelise kaubanduse, kas olles kaubanduspartnerid või konkureerides samal väliturul; 3) poliitilised kanalid (*political links*) – riikidevahelised poliitilised suhted.

Viimasel kümnendil alates R. Rigoboni (1999, 2002) töödest on levima hakanud ka seisukoht, et kriiside ülekandumisel fundamentaalsete levimiskanalite kaudu ei ole tegemist finantsnakkusega vaid lihtsalt vastastikuse sõltuvusega (*interdependence*). See omakorda seab kahtluse alla kõige laiemal ja kõige tingimusteta finantsnakkuse definitsiooni. Siinjuures on oluline märkida, et käesoleval sajandil käsitletaksegi finantsnakkusena reeglina selle nähtuse kitsamaid avaldumisvorme.

Paljud autorid on jõudnud seisukohale, et fundamentaalsed ühenduslülid ei suuda täielikult selgitada riikidevahelisi seoseid ning muutusi nendes seostes. Tähelepanu tuleb pöörata ka investorite käitumisega seotud irratsionaalsetele aspektidele, eriti nn *herding*-kontseptsioonile ehk karjakäitumisele. *Herding*-kontseptsiooni südameks on informatsiooni asümmeetrilisus, mis põhjustab informatsiooni hankimise kulukuse tõttu väheminformeeritud investorite poolse (eeldatavalt) paremini informeeritud agentide tegevuse järgimise ja matkimise. Nii võib kogu turg liikuda kiiresti ja ühekorraga ajutiselt ühes suunas. Kui eeldatavalt informeeritud investorid juhtusid näiteks mingist riigist raha välja tõmbama mujal tekkinud kriisist tulenevate probleemide tõttu investeerimisportfellis, siis võivad tõsised finantsprobleemid tekkida ka väga heade fundamentaalnäitajatega riikidel.

Nagu juba eespool mainitud on finantsnakkuse avaldumist viimastel kümnenditel empiirilisel viisil väga palju analüüsitud. Seejuures on saadud ka väga erinevaid tulemusi, mis on ka mõistetav arvestades käsitletava uuritava probleemiringi mitme-dimensionaalsust. Läbiviidud empiirilised uuringud erinevad lisaks finantsnakkuse mõiste erinevale tõlgendamisele ka kasutatava analüüsimeetodika, vaadeldavate kriiside, valimisse kuuluvate sihtriikide ja mitmete muude üksikasjade osas. Heaks näiteks on siinkohal Serwa (2005) uurimus, kes kasutas nelja erinevat testimis-metoodikat ja nelja erinevat valimit ning sai ka oluliselt erinevad uurimistulemused.

Tulemuste üldistamiseks on käesolevas uurimuses käsitletud võimalikku finantsnakkust käsitleva empiirilise analüüsi tulemusi ca 75 juhu kohta (vt lisa). Liigitades saadud tulemusi *Jah* ja *Ei* tulemusteks ning neid loendades saab teha järelduse, et finantsnakkuse esinemist toetavaid tulemusi (*Jah*-tulemus) on ligi kaks korda rohkem kui mittetoetavaid (*Ei*-tulemustes). Suur osa *Jah*-tulemustest on aga saavutatud korrelatsioonikoefitsientide muutusel põhinevate testidega, kus tulemusi pole heteroskedastiivsuse esinemise suhtes kontrollitud ega kohandatud. Viimase kümnenääduri uurimused on aga selgelt näidanud sellise kohandamise vajalikkust. Selliseid tulemusi mitte arvestades on *Jah*- ning *Ei*-tulemused ligikaudu tasakaalus. Mitmete uuringute puhul ei ole ühtne järeldus *Jah* või *Ei* kasuks päriselt õigustatud, kuna ühe uuringu raames võib esineda nii finantsnakkust toetavaid kui ka mittetoetavaid tulemusi.

Peamiseks probleemiks konkreetsete üldistavate järelduste tegemisel on aga siiski juba mainitud uurimisprobleemi mitmedimensionaalsus. Uuringusse kaasatud kolmveerandsaja empiirilise analüüsi seas on vaid üksikud, mis kasutavad sama definitsiooni mõiste avamiseks, sama testimismetoodikat, samu kriise ning kriiside ülekandumise sihtriike. Selline heterogeensus uurimistöodes mõjutab ka tulemusi. Seega erialakirjanduse kvalitatiivsele analüüsile lisaks on oluline kasutada ka metaanalüüsi st kvantitatiivset analüüsimetoodikat, et saada täiendavat infot varasemate empiiriliste uuringute tulemuste üldistamiseks.

Metaanalüüsi jaoks vajaliku andmestiku kogumiseks on kaasatud uuringud Maailmapanga *Financial Crisis Website* leheküljelt ning *ISI Web of Knowledge* andmebaasist vastavalt märksõnadele *financial contagion*. Valimisse on kaasatud ainult need uuringud, milles finantsnakkuslikkus on defineeritud statistiliselt olulise erinevusena kriisieelse ja kriisijärgse finantsvahendite hindade korrelatsiooni vahel ning kus nii kriisieelse kui -järgne korrelatsioon (või nende vahe) on selgelt välja toodud. Sel viisil on saadud 30 uuringut ja 716 individuaaltulemust. Neist sõltumatud on 17 uuringut ja 394 individuaaltulemust. Juhul, kui raporteeritud on nii lühiajalise kui pikaajalise perioodi kriisijärgne korrelatsioon, on sõltumatu probleemi tõttu uuringusse kaasatud vaid lühiajalist perioodi iseloomustav tulemus.

Iga konstruktsiooni korral on leitud kaks metatulemust: ühel juhul on korrelatsioonikoefitsientide muutu käsitletud kui mõjuefekti (*kontseptsioon 1*) ja teisel juhul kui korrelatsiooni (*kontseptsioon 2*). Kumb lähenemine on õigem? Metaanalüüsi käsitlevas kirjanduses pole seda teemat käsitletud ning autorite arvates pole ka intuiitselt selge, millise neist valima peaks. Seetõttu ongi paralleelselt toodud tulemused mõlema kontseptsiooni korral.

*Kontseptsiooni 1* kasutades on keskmiseks kaalutud korrelatsioonikoefitsientide muuduks 0,053 standardhälbega 0,0047 ja *kontseptsiooni 2* kohaselt 0,072 standardhälbega 0,0049. Mõlemal juhul jäävad 95% usalduspiirid selgelt üle nulli ning võib järeldada, et keskmiselt on kriisiperioodidel korrelatsioonid tugevnenud. Kontrollides jaotuse homogeensust Q-statistiku abil selgub aga, et jaotus on heterogeenne ning seega ei pruugi kõik individuaaltulemused esindada ühte ja sama üldkogumit. Seetõttu on vajalik jätkata analüüsi otsimaks võimalikke varieeruvust



põhjustavaid moderaatoreid. Esmalt on võimaliku moderaatorina kontrollitud heteroskedastiivsuse suhtes kohandamist kriisijärgsete korrelatsioonide arvutamisel. Selleks on valim jagatud kaheks vastavalt sellele, kas heteroskedastiivsuse suhtes kohandamist on teostatud (juht A) või mitte (juht U). Selgub, et kaalutud keskmine korrelatsioonide muut on juhul A tunduvalt väiksem, olles 0,030 nii *kontseptsiooni 1* kui 2 korral. Juhul U korral on vastavad tulemused 0,168 ja 0,208. Saab järeldada, et tegu on olulise moderaator-muutujaga, mida kinnitab ka gruppide vahelise Q-statistiku statistiline olulisus.

Kuna Q-statistiku väärtuse põhjal võib arvata, et jaotuses on endiselt veel järel teatud määral heterogeensust, siis on moderaator-muutujana kontrollitud ka erinevaid kriise. Selgub, et viimaste kümneid suurematest kriisidest Tai 1997, Mehhiko 1994 ja Hong Kongi 1997 kriis olid selgelt rohkem nakkuslikud kui Vene 1998, Brasiilia 1999 ja Argentiina 2001 kriisid. Samuti olid nakkuslikud USA 1987. ja 2002. aasta kriisid, mitte aga Türgi 2001, India 2004, Tšehhi 1997 ega USA 2001 kriisid.

Võimaliku moderaatorina on kontrollitud ka sihtriigi arengutaset jagades valimi arenenud ja vähemarenenud riikideks vastavalt 2008. aasta inimarengu indeksile. Arenenud riikidena on siinkohal defineeritud nimetatud indeksi järgi 30 esimest riiki, mis on valitud eesmärgiga hoida valimi mahud mõlemas grupis umbkaudu võrdsed (vastavalt 372 ja 344). Sihtriigi arengutase võimaliku moderaatorina statistilist kinnitust ei leidnud. Seega saame teha järelduse, et riigi hea arengutase ei paku küllaldast kaitset kriiside nakkusliku leviku eest.

Kesk- ja Ida-Euroopa üleminekumajanduste uurimiseks on valimis 89 individuaaltulemust kaheksa kriisi ja nelja riigi (Tšehhi Vabariik, Eesti, Poola, Ungari) kohta. Mõlema kontseptsiooni (individuaaltulemused kui korrelatsioonid ja kui mõjuefektid) rakendamise korral on metatulemuseks 0,02; mis kogu valimi tulemustega – vastavalt 0,05 (*kontseptsioon 1*) ja 0,07 (*kontseptsioon 2*) – võrreldes on mõnevõrra väiksem. Siit tulenevalt saame teha järelduse, et Kesk- ja Ida-Euroopa üleminekumajandused on finantsnakkusele keskmiselt vähem vastuvõtlikud kui kogu valim tervikuna. Sarnasele tulemusele on varem jõudnud ka Serwa ja Bohl (2005) ja Serwa (2005). Ka neil ei õnnestunud leida tõendeid selle kohta, et Kesk- ja Ida-Euroopa riigid oleksid *finantsnakkuse* poolt kergemini haavatavad kui lääneriigid. Veelgi selgemalt tuleb see tulemus esile, kui valimisse kaasata vaid uuringud, kus korrelatsioonikoefitsiendid on heteroskedastiivsuse suhtes kontrollitud. Mõlema kontseptsiooni korral on meta-efekt nüüd negatiivne, näidates isegi korrelatsioonide vähenemist kriisiperioodidel. Üheks selgituseks oodatust väiksemale finantsnakkuse vastuvõtlikkusele Kesk- ja Ida-Euroopa riikides võib tuua suhteliselt väiksema spekulatiivsel eesmärgil tehtud investeeringute osakaalu ning väiksema tõenäosuse mullide tekkeks teiste arengumaadega võrreldes. Uurimistulemused näitavad ka seda, et kõige tugevamini on Kesk-ja Ida-Euroopa üleminekuriikidesse üle kandunud kriisid, mis on alguse saanud USA-st.

Käesoleva uurimuse üheks olulisemaks piiranguks on meta-analüüsi läbiviimisel piirdumine vaid korrelatsioonikoefitsientidel põhinevate uuringutega. Muid

mõõtmismetoodikaid kasutatavate uuringute kaasamist komplitseerivad raskused ühtselt interpreteeritavate individuaaltulemuste leidmiseks uuringute erinevate testimismetoodikate korral.

## **TEADUSASUTUSTE JA ETTEVÕTETE VAHELISE TEADMUSSIIRDE RIIKLIK SOODUSTAMINE EESTIS SPINNO PROGRAMMI NÄITEL**

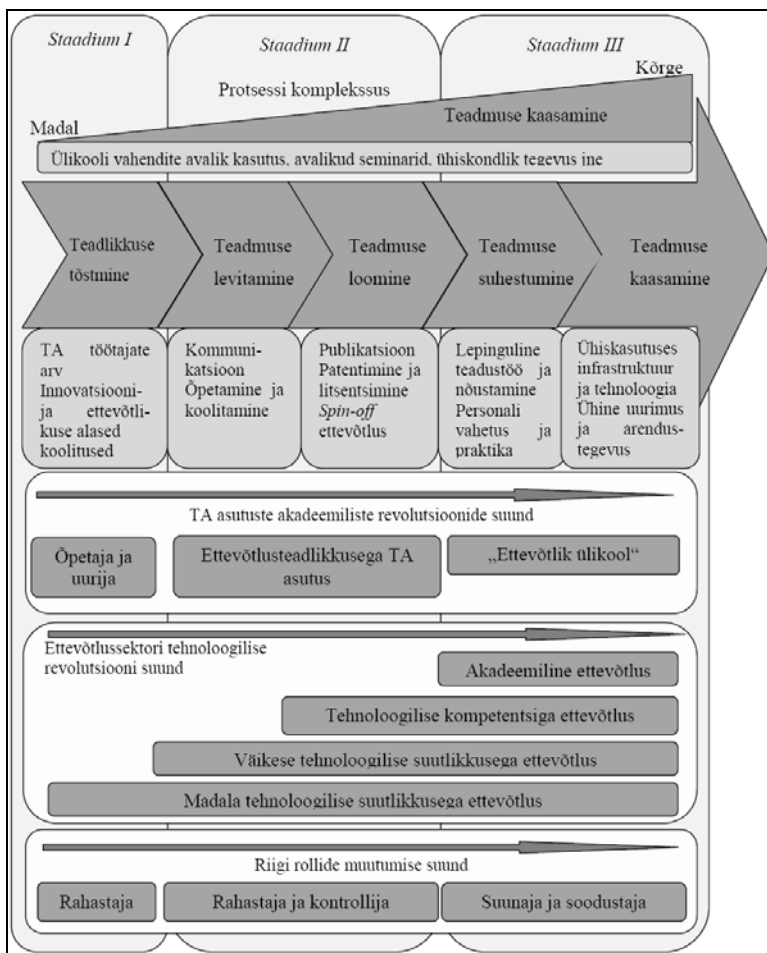
Age Laine, Urmas Varblane  
Tartu Ülikool

Tänapäeva riikide innovatsioonipoliitikate keskseks märksõnaks on teaduspõhine majandus. Evolutsioonilise majandusteooria ja innovatsioonisüsteemide käsitluste kohaselt on riikide majanduskasvu ja konkurentsivõime aluseks teadmus ja sellel põhinev innovatsioon, ehk võime luua ja rakendada uusi või uudsel kujul vanu teadmisi toodete, teenuste või protsesside täiustamisel. Innovatsiooni tekke aluseks on teadmusallikate vaheline interaktsioon ja teadmussiire. Teadmussiire tähistab protsessi, mille käigus teadmus, ideed, teadustulemused ja oskused liiguvad teadmusallikate vahel, peamiselt ülikoolidest ettevõtetesse ja laiemasse ühiskonda, hõlmates nii avatud teadmuse kui akumulereitud informatsiooni, subjektiivsete veendumuste ja oskuste kui varjatud teadmuse ülekannet.

Ülikoolide ja ettevõtete vaheline interaktsioon ja sellel põhinev teadmussiire on seega teaduspõhise majanduse ja selle arendamisele suunatud innovatsiooni- ja ettevõtlus- ning teadus- ja arenduspoliitikate üks põhilisi alustalasisid, mille suunamisele ja toetamisele orienteeritud riiklikke toetusmeetmeid on suuremal või vähemal määral rakendamas palju riike. Samas on teadmussiirde valdkond kui selline rahvusvahelisel areenil jätkuvalt uudne ja arenev, parimad praktikad on alles kujunemas. Seetõttu on äärmiselt oluline erinevate juhtumianalüüside läbiviimine, mis loovad aluse vastastikuseks õppimisprotsessiks ja üldistuste tegemiseks.

Selleks, et teadmussiiret toetav meede tooks soovitud tulemusi, on meetme ülesehituse kujundamise käigus oluline teadmussiiret toovate mehhanismide, sotsiaalmajandusliku taustsüsteemi ning teadmuse alaste interaktsioonide ja koostööeelduste tuvastamine ning riigipoolsete toetusmeetmete taustsüsteemile vastav eesmärgistamine. Eesmäärke peavad saatma nende saavutamisele kohased toetavate tegevuste süsteemid ning oodatavate tulemuste mõistmise vahendid (indikaatorid). Käesoleva artikli panuseks teadmussiirde valdkonna poliitika-kujundamise protsessi edasiarendamisse nii Eestis kui laiemalt on süsteemse lähenemise väljatöötamine teadmuse loomise ja innovatsiooniprotsessi käsitluse teooriate evolutsioonilistele alustele ja nende süsteemne seostamine teadmussiirde protsessi ja vastavate kanalite ning nende toimimise eeldusega. Väljundiks on teadmussiirde soodustamisele suunatud toetusmeetmete ülesehituse kujundamise ja hindamise raamistik.

Käesoleva artikli eesmärgiks on välja töötatud raamistikus anda hinnang SPINNO programmi ülesehituse asjakohasusele teadmussiirde soodustamisel Eestis ning teha ettepanekuid meetme ülesehituse edasiseks eesmärgipäraseks kujundamiseks. Teadmussiirde kanalid, koos teadmuse loomise protsessi arenemise ja seotud osapoolt rollidega moodustavad järgmisel joonisel kujutatud teadmussiiret toetavate poliitikameetmete ülesehituse kujundamise ja hindamise raamistiku (vt. joonis 1).



**Joonis 1.** Teadmussiiret toetavate poliitikameetmete ülesehituse kujundamise ja hindamise raamistik. (Autori koostatud)

Stadium I, II ja III (*Mode I, II ja III*) kujutavad ülikoolide rolle teadmuse loomise protsessis ja teadmuse loomise protsessi enda vastavat muutumist. Stadium I raamistikule vastab lineaarne innovatsiooni tekkemudel, kus uue teadmuse loojatena nähti ülikooli akadeemiliste alusuuringute ühiskonna vajadustest sõltumatu läbiviijana individuaalsete distsipliinide raames ja sõltumatult ühiskonna vajadustest. Stadium II raamistikus kujuneb läbi sidus- ja integreeritud innovatsioonimudelite teadustööst interdistsiplinaarne nähtus, mida viiakse läbi mitmetes erinevates institutsioonides vastavalt ühiskondlikele vajadustele ning mida reguleerib riigi innovatsioonisüsteem. Stadium III raamistikus on innovatsiooni-

protsessist saanud Kolmikspiraali (*Triple Helix*) mudeliga kirjeldatud integreeritud võrgustikel põhinev nähtus, kus ülikoolid, ettevõtte ja riik võtavad üksteise rolle, loovad teadmussiiret toetavaid võrgustikke ja hübriidorganisatsioone.

Teadmuse loomise ja innovatsioonimudelite arenguga Staadium I, II ja III skaalal kaasnevad teadus- ja arendusasutuste, ettevõtete ja riigi muutuvad rollid, mis loovad aluse teadmussiirde tegevuste komplekskuse tõusuks. Kolmikspiraali mudeli kohase teadmuse loomise protsessi käivitumise eeldusena peavad ülikoolid olema läbi teinud teise akadeemilise revolutsiooni ja teadvustanud oma rolli majandusliku väärtusloome protsessides, ettevõteted omama piisavat tehnoloogilist kompetentsi ja innovatsiooniteadlikkust ning riik olema mõistnud oma rolli rahastaja ja kontrollija asemel suunaja ja soodustajana ehk innovatsioonipoliitika kujundajana ning tagasisidestava kontrolli süsteemi tagajana.

Teadmussiirde funktsiooni toetamisel tuleb raamistiku kohaselt rakendada üksikult üldisele lähenemist. Staadium I raamistikus peab teadmussiirde toetamine ülikoolides keskenduma ettevõtlusteadlikkuse tõstmisele ja teadmussiirdeks vajalike regulatsioonide väljatöötamisele. Etapi väljundindikaatoriteks on loodud tugistruktuurid ja regulatsioonid ning töötajate teadlikkuse tõstmisele suunatud tegevuste arv ja maht ning tulemuseks ülikoolides toimuv teine akadeemiline revolutsioon. Staadium II raamistikus on ülikoolid teadvustanud rolli majandusliku väärtusloome protsessis ja saavad võimalikuks vähem-komplekssemad teadmussiirde vormid teadustöö tulemuste laialdase levitamise (infoüritused, koolitus jne) ja teadmustoode loomise (patendid, litsentsid, *spin-off* ettevõtted jne) vormis. Tulemuseks on ühiskondliku teadlikkuse kasv ülikoolides tehtavast teadustööst, koostöösidemete ja vastavate kompetentside ning teadmussiirde mahu ja komplekskuse järk-järguline tõus. Staadium III raamistikus saavad võimalikuks komplekssemad teadmuse suhestumist iseloomustavad teadmussiirde tegevused (lepinguline uurimustöö, analüüsi- ja testimisteenused ettevõtetele jne). Protsessi süvenedes toimub Kolmikspiraali mudeli kohane traditsiooniliste rollide häägustumine, järgneb teadus- ja arendusinfrastruktuuri ja ettevõtete paiknemine ülikoolide ja teadusparkide lähedusse ning klastrite moodustumine.

Raamistiku järgne teadmussiiret toetavate poliitikameetmete ülesehituse kujundamine ja hindamine peaks vastavalt lähtuma järgmistest põhimõtetest:

- Teadmussiirde toetamise eesmärgiks on osapoolte suunamine ja arendamine Staadium I, II ja III skaalal, ehk ettevõtete tehnoloogilise kompetentsi ja muutumisvõimelisuse ja teadus- ja arendusasutuste ettevõtlikkuse soodustamine, millega paralleelselt teiseb ka riigi enda roll rahastajalt ja kontrollijalt suunajaks ja soodustajaks.
- Toetusmeetmete ülesehituse kujundamisel tuleb arvestada riikliku innovatsioonisüsteemi kumulatiivseid raamtingimusi ja osapoolte vastava ajaperioodi arengueeldusi- ning takistusi ja suunata programmi eesmärkide ning tegevuste kompleks vastavate eelduste ärakasutamisele ja takistuste likvideerimisele.

- Indikaatorid peavad mõõtma kõiki teadmussiirde etappe Staadium I-III skaalal, et võimaldada toimuvate muutuste analüüsi ning programmi vastavat kujundamist.
- Toetus peab viima teadmussiirde funktsiooni iseseisvumiseni (jätkusuutlikkuseeni) ülikoolides, läbi ülikoolides läbiviidava teadus- ja arendustegevuse rahastamisallikate mitmekesistumise.

Kuigi teadmussiirde valdkond ja seda toetavate meetmed on rahvusvahelisel tasandil suhteliselt uudne ja jätkuvalt arenev, käivitati teadmussiirde funktsiooni soodustamisele teadus- ja arendusasutustes suunatud riiklik toetusmeede – SPINNO programm – Eestis juba 2001. aastal. Koos teadus- ja arendustegevuse projektide toetamise programmiga oli SPINNO esimeseks innovatsiooni edendamisele suunatud toetusmeetmeks Eestis. Võrdluseks Suurbritannias, kes on olnud teadmussiirde valdkonnas Euroopa üks juhtriike ja Eesti süsteemi eeskujuks, on sarnane initsiatiiv algatatud 2000. aastal. Ellu on viidud kaks SPINNO rahastamisperioodi. Perioodil 2001-2003 toetati kolme ja 2004-2006(7) jätkus toetus esimesele kolmele, millele lisandus neli uut projekti. Kokku ulatub kahel perioodil eraldatud toetus ligi 100 miljoni kroonini. Perioodiks 2008-2013 on meetme SPINNO jätkutegevuste finantseerimiseks planeeritud 80 miljonit Eesti krooni ja see on kahe-aastaste baasfinantseerimisperioodidena seitsme projekti osas käivitunud.

SPINNO programmi algusaastatel oli Eesti valdavalt Staadium I faasis. Ülikoolid olid orienteeritud valdavalt akadeemiliste alusuuringute läbiviimisele, ettevõtlussektor koosnes valdavalt madala tehnoloogilise kompetentsiga väike- ja keskmise suurusega ettevõtetest ja teadus- ja arendustegevuse peamine finantseerija ca 60% osas oli riik, mis suunati valdavas osas alusuuringute läbiviimisse. Järgneva kaheksa aasta jooksul rakendatud SPINNO programmi analüüsi ja toimunud arengute hindamise empiirilise alusena kasutatakse artiklis SPINNO programmi erinevate rahastamisperioodide alusdokumentatsiooni (programmi määrused, muutmiste määrused ja seletuskirjad, eeluuring, vahehindamise ja mõjude hinnangu raport, projektide tulemusnäitajad jne) analüüsi ning programmi korraldusasutus Majandus- ja Kommunikatsiooniministeeriumi, rakendusasutus Ettevõtluse Arendamise Sihtasutuse ja projektitaotlejate esindajatega läbi viidud intervjuusid.

Eesti raamtingimustest lähtuvas teadmussiirde soodustamisele suunatud toetusmeetmete planeerimise ja hindamise raamistikus läbi viidud SPINNO programmi analüüsi olulisemad järeldused on järgmised:

- Eesmärgid – programmi eesmärgistamist on iseloomustanud üksikult-üldisele loogika, eesmärkide fookus on liikunud laiematelt ühiskondlikelt taotlustelt teadmussiirde funktsiooni soodustamise keskseks teadus- ja arendusasutustes, millega paralleelselt on teisenenud teadmussiirde mõiste olemuse käsitlemise sisuline haare (tehnoloogiasirdelt ülikoolide laiemale ühiskonnale ehk nii ettevõtlus-, avalikule- kui mittetulundussektorile suunatud kogu teadmussiirde tegevuste spektrit katvatele funktsioonidele).

- Tegevused – programmi tegevused on vaatamata eesmärgistamisel ilmnenuid ebakõladele valdavas osas olnud Kolmikspiraali eeldustele vastavate tegevuste või arengutakistuste likvideerimisele suunatud.
- Indikaatorid – kui esimesel programmiperioodil väljendati ootusi peamiselt teadus- ja arendustegevuse tulemuste ärielistel eesmärkidel rakendamise väljunditele (tehnoloogiasiiire), siis teisel programmiperioodil oli teadmussiirde kanalite käsitlus oluliselt laiem hõlmates ka teadmuse siirde erinevaid kanaleid. Sellega kaasnes aga mõõdetavate indikaatorite rohkus, mis tõi taotlejatele kaasa olulise indikaatorite kogumise ja raporteerimisega seonduva halduskoormuse tõusu. Kolmandaks rahastamisperioodiks on indikaatorid läbi teinud arengu korrastatud ja läbimõeldud süsteemile, keskendutakse strateegilistele indikaatoritele, mis mõõdavad tegevusi kogu teadmussiirde tegevuste komplekskuse skaalal.
- Tulemused – SPINNO koondtulemuste indikaatorite väärtuste dünaamika vastab teadmussiiret toetava programmi planeerimise ja hindamise raamistikule, välja arvatud teadmuse loomise etapi osas. Olulisima tulemusena on saavutatud kvalitatiivne muutus ehk teadlikkuse tõus teadmussiirde funktsiooni olemusest ja selle olulisusest ülikoolide ühe funktsioonina (Staadium I kohane teadlikkuse tõstmise etapp). Kvantitatiivsetest näitajatest on suurim kasv saavutatud konsultatsiooni ja koolitustega seonduvate tulude näitajas (8,7 korda perioodil 2001-2006) (Staadium II kohane teadmuse levitamise etapp), millele järgnevad lepingulise teadustööga (Staadium III kohane teadmuse suhestumise etapp) seonduvate tulude koondnäitajad, mis on perioodil 2001-2006 saavutanud kolmekordse kasvu. Teadmuse loomise etapi patentide, litsentside ja spin-off ettevõtetega seotud indikaatorite tulemused ei ole Eesti kontekstis vastanud analüüsimudelile. Need näitajad peegeldavad tehnoloogia siiret, millele järelikult Eesti üleminekutaustaga riigis peab eelnema pikem ja põhjalikum teadmussiirde faas.

Analüüsi tulemusel ilmnenuid probleemid on järgmised:

- Käesoleval hetkel, kui teadmussiirde funktsioone on toetatud kaheksa aastat ja on teada, et aastaks 2013 tuleb teha järgmised otsused programmi jätkumise osas ei ole piisavalt palju tähelepanu pööratud teadmussiirde funktsiooni jätkusuutlikkuse erinevatele tahkudele (koostöö kestus, korduvus ja maht, finantseerimisallikate mitmekesisustumine).
- Kolmandal rahastamisperioodil eraldatavate vahendite aluseks olev baasfinantseerimise valem kätkeb endas ohtu organisatsioonides toimunud kvalitatiivse muutuse teisenemiseks valemi komponentide optimeerimiseks.
- Programmi kujundamise kontekstis on ebapiisaval määral uuritud ja arvestatud nõudluse poolel (ettevõtlussektoris) toimunud arenguid Staadium I-III skaalal.

Ettepanekud SPINNO programmi kohandamiseks teadmussiiret toetavate meetmete kujundamise ja hindamise raamistikus:

- Töö raames analüüsi valguses on võimalik teha mõned soovitud teadmussiirde jätkusuutlikkuse analüüsiks läbi kvalitatiivsete indikaatorite:

- teadmussiirde protsessi kompleksuse tõus Staadium I-III skaalal võimaldab jälgida erinevate teadmussiirde tegevustega seonduva tulu dünaamikat;
- rahastamisallikate eraldamine baasfinantseerimise valemi tulu indikaatoris võimaldab jälgida teadmussiirde tegevuste rahastamisallikate dünaamikat;
- Kaaluda tuleks korduvast koostööst saadava tulu protsenti kogutulust näitava indikaatori kaasamist projektide aruandlusesse, mis võimaldab hinnata koostöö jätkusuutlikkust selle kestvuse ja korduvuse näol.
- Olulise sisendina võimalikule programmi vahehindamisele ja vastavale SPINNO programmi edasist jätkamist ja ülesehitust puudutavale analüüsile ühiskonna suunamisel Kolmikspiraali mudeli poole, tuleks läbi viia seniste koostöösidemete jätkusuutlikkust (koostöö kestuse ja mahu) ning ettevõtete poolse nõudluse uuring/analüüs.

Kokkuvõtvalt võib öelda, et on SPINNO programmi arengu käigus on toimunud oluline programmi eesmärkide ja ootuste ning raamtingimuste ja vastavate toetatavate tegevuste lähenemine üksteisele. Kuigi programmi fookus on mõneti olnud nihkes, näitas analüüs, et nii programmi kujundavate institutsioonide kui taotlejate hulgas on toimunud positiivne nihe Staadium I, II ja III skaalal ja välja töötatud raamistik loob olulise aluse nii selle kui sarnaste programmide edasiseks kujundamiseks ja täiendavateks juhtumianalüüsideks.



## KUIDAS INNOVATSIOONIPOLIITIKAS ELUSLABORITE (*LIVING LABS*) KONTEKSTIS EUROOPAGA SAMA KEELT RÄÄKIDA?

Ave Lepik, Urmas Varblane  
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Käesoleval kümnendil on innovatsioonipoliitikas toimunud metodoloogiline innovatsioon – uus innovatsioone käsitlev kontseptsioon on leidnud laialdast rakendust praktikas ning tunnustust paljudes Euroopa riikides.

Eluslabori (*living lab*) mõiste võib tähistada nii teatud metodoloogiat innovatsioonisüsteemi käsitlemisel kui organisatsiooni, mis seda praktiliselt kasutab. Eluslabori sisuks on lühidalt kasutaja-põhine avatud innovatsioon reaalse elu keskkonnas. Lõppkasutaja kaasamist aktiivse kaas-loojana innovatsiooniprotsessi nähakse eeldusena Euroopa üldise innovaatilisuse ja konkurentsivõime tõstmisele. Seetõttu kogub platvorm järjest enam toetust ka Euroopa Komisjonis ning leiab rakendust uutes riikides (olenevalt riigist ka struktuurifondide toetusel) ning valdkondades.

Artikli eesmärgiks on anda soovitusi eluslabori kontseptsiooni rakendamiseks Eestis või mõnes teises (väike)riigis, kus senine praktika selles valdkonnas puudub või on ühekülgne. Eluslabori põhijoonte tutvustamine ning põhikriteeriumite välja toomine annab üldpildi, millises suunas innovatsiooniprotsess peaks liikuma. Eeskujude leidmiseks antakse ülevaade eluslaborite kontseptsiooni levikust Euroopa riikides ning kategoriseeritakse erinevaid eluslabori vorme. Samuti analüüsitakse võimalike valdkondade/sectorite eelistamist ning lähenemisi eluslabori loomisele. Lisaks soovitudele tuuakse välja ka peamised piirangud, mis võivad esialgset elulabori kasutamise entusiasmi jahutada. Artikkel tugineb kahele autorite poolt läbi viidud uuringule: 1) 68 Euroopa Eluslaborite Võrgustiku (ENoLL) liikme kohta kättesaadava info põhjal viidi läbi eluslaborite kategoriseerimine; 2) peamiste probleemide ja takistuste tuvastamiseks viidi läbi küsitlus/intervjuud kõigi 128 EnoLLi kuuluva eluslabori seas. Lisaks viidi läbi intervjuud EnoLL presidendi Veli-Pekka Niitamo ja Helsinki Virium Forum tegevjuhi Jarmo Eskelineniga.

### **Eluslabori mõiste ja alustalad**

Eluslabor on avatud innovatsiooni keskkond päriselu elementidega, kus kasutaja-põhine innovatsioon on koos-loome protsess uutele teenustele, toodetele ja sotsiaalsele infrastruktuurile. Eluslabor peab vastama neljale kriteeriumile: 1) tegelike tarbijate kogukonnale ligipääs ja nende kaasamine innovatsiooniloomesse ehk kasutaja-põhisus; 2) avatud innovatsiooni mõtteviisi kasutamine; 3) multi-partnerluse suhetesüsteemi arendamine; 4) reaal-elu keskkond uuenduste katsetamiseks. Kõige eripärasemate joontena võib välja tuua lõppkasutaja kaasamise aktiivse osapoolena ehk tarbija kui objekt muudetakse subjektiks. Samuti asjaolu, et kogu protsess, mil tarbija innovatsiooniloomisesse on kaasatud (katsetamine, tagasiside andmine jne.), peab toimuma reaalse elu kontekstis, mitte tüüpilises laboris.

Igapäevaselt eluslabori juhtimisega tegelev Jarmo E. Eskelinen, Helsinki Forum Virium eluslabori tegevjuht, rõhutab, et niiöelda „lõdva eluslabori“ kontseptsiooni kasutamist praktikud ei pooldata. Seega tuleb eesmärgiks võtta kohe „tugeva“ eluslabori loomine, et saavutada usaldus riigi eluslaborite vastu rahvusvaheliselt ning aktsepteerimine välispartnerite poolt. Täidetud peavad olema kõik neli kriteeriumit. Olukorda, kus tarbija on rohkem kaasatud kui varem, aga peab näiteks uut toodet proovima tüüpilises katselaboris, ei saa nimetada eluslaboriks. Artiklis on välja toodud teisedki eluslaboreid iseloomustavad vajalikud võtmelemendid ja aspektid, mis tuleb eluslabori loomisel põhjalikult läbi mõelda ning paika panna.

### **Eluslaborite kiire levik ja Euroopa senine kogemus**

Euroopasse jõudis USAs 1990ndate lõpul esmakordselt kasutusele võetud metodoloogia 2000. aastal läbi Nokia tootearenduspoliitika muutumise. Tänu Soome Tehnoloogia Fondi TEKESe toetusele ja lobby-tööle on kontseptsioon saanud ka Euroopa Komisjoni poolehoidu osaliseks. Euroopas, kus sotsiaalsed teenused on enamasti riigi või kohaliku omavalitsuse vastutusel, on eluslaborite rakendamise suund samuti eelkõige avalike sotsiaalsetel teenustel. Samas ei ole need selle valdkonnaga loomulikult piiratud. 2006. aastal loodi ametlik Euroopa Eluslaborit Võrgustik (ENoLL), kuhu 2009 aasta lõpuseisuga, enne neljandat ühinemisvooruga, kuulus 129 Euroopa eluslaborit. Eeldatakse, et neljanda ühinemisvooruga lisandub toptarv uusi eluslaboreid kui kolmanda ühinemisvooruga ajal.

Riikidest võib eluslaborite loomisel eeskujuks võtta eelkõige Soomest, samas tuleb arvestada erinevusi näiteks sotsiaalsete avalike teenuste finantseerimises. Soome on eluslaborite rakendamisel ilmselt kõige aktiivsem ja efektiivsem riik, omades kõige laiapäohjalisemat kogemust. Samuti on jõutud eluslaborite arenemisel faasi, kus riigis toimib kohalike eluslaborite võrgustik. Vähem tähtis ei ole ka asjaolu, et soomlased on avatud oma tegemistest rääkima ja teadmused eluslaboritest jagama. Vastavalt valdkonna spetsiifikale või koostöövormile võib parimaid praktikaid otsida loomulikult ka Lääne-Euroopast. Ida-Euroopa teeb 2009-2010 aastal alles esimesi samme.

Tutvudes erinevate Euroopa eluslaborite tegevusvaldkondadega ning tegutsemisvormidega, ilmnes, et need on väga eripalgelised ning võrdlemine ja hindamine ühtsetel alustel ei ole adekvaatne. Eluslaborite kategooriaid ei ole varem esitatud, seega on artiklis esitatud kategooriad autori nägemus, mis on vaid üks võimalik liigitus. Vaadeldakse kahte dimensiooni: 1) spetsialiseerumise tase (kas eluslabor on keskendunud ühele kitsale valdkonnale või tegeleb paljude suundadega); 2) eluslabori tegutsemisvormi (nt. erettevõtte, ülikoolide konsortsium, linn või regioon jne).

Tekib küsimus, millist erinevat eluslaboritüüpi eelistada: kas võimalikult paljude partneritega ülikooli juhitud konsortsiumit erinevates valdkondades või eraalgatust väga konkreetses valdkonnas või hoopis linna soovi arendada kõikvõimalikke sotsiaalseid avalikke teenuseid koostöös teatud hulga partneritega? On raske luua

ühtset hindamislust kõigi eluslaborite edukuse mõõtmiseks ja öelda mis tüüpi eluslaborit eelistada. Hindamisel tuleb arvestada konteksti ja eluslabori eesmärki.

Autor on arvamusel, et riikliku innovatsioonipoliitika tasemel, ei tohiks karne piiranguid seada ning avalikult eelistada ja toetada vaid teatud tüüpi algatusi. Ei saa öelda, et mõnda tüüpi eluslabor oleks „vale“. Pigem tuleb analüüsida igat juhtumit eraldi, kas algatus suudab tõestada oma sisu ja potentsiaali ekspordida innovatsiooni väljundit. Loomulikult võib riik seada oma prioriteetid, kuhu ise rohkem panustada, kuid samas võib majanduslikult väga edukas olla mõni teist tüüpi algatus.

### **Rakendamise suuna valimine**

Kuigi eelmises punktis leiti, et ei saa öelda, et ühte tüüpi eluslaborid on kindlasti edukamad ja kasulikumad, siis teatud erinevad lähenemised, mille põhjal analüüsida eluslabori valiku suunda, võib siiski välja tuua. Autori arvates on kolm peamist viisi kuidas valida, millises sektoris avaliku sektori poolt eluslaborit luua ja toetada. Esiteks võib lähtuda riigi prioriteetidest majandussektori valikul, teiseks eluslaborite ekspertide ja praktikute arvamusest ning kolmandaks reaalses elus toimuvast ehk kus ollakse juba kõige lähemal eluslabori sisule.

Eesti puhul on riigi prioriteetseks suunaks, ka eluslabori loomise plaan olemas 2010 aasta kevadeks, finantsteenuste arendamine. Väliseksperited arvates on kõige olulisem valdkond heaolu, tervishoid ja sport. Ühe suure projektina on välja toodud Tehvandi spordikeskuse potentsiaali eluslaborina. Kolmanda suunana soovib autor pöörata suuremat tähelepanu juba olemasolevatele koostöövõrgustikele ja nende sisu arendamisele. Näitena võib tuua mobiiliteenuste arendamise Tartus, samuti Euregio senised pingutused eluslabori loomisel.

Innovatsioon on teadmusprotsessi väljund ehk eeldab õppimist. Samamoodi ka ühe võimaliku innovatsioonisüsteemi ja -mõtteviisi juurutamine – see võtab aega ning tuleb arvestada õpikõverat. Ei saa unustada et radikaalse innovatsiooniga kaasneb enamasti suurem risk järkjärgulisi muutusi on kergem ellu viia. Kogemuse saamiseks ning kontseptsiooni sügavamaks mõistmiseks, tundub igati mõistlik alustada olemasolevate potentsiaaliga ettevõtete, organisatsioonide, võrgustike analüüsimisest ning nende nõrkade või puudulike aspektide arendamisest.

Nende kahe dimensiooni kombinatsioonidest saab erinevaid suundi eluslabori valdkonna ja loomise-arendamise valikul. Kõige suuremat muutust ja poliitilist otsust nõuaks ilmselt EnoLLi presidendi Veli-Pekka Niitamo välja pakutud Tehvandi idee Soome suusatunneli eeskujul. Eesti mõistes oleks see radikaalne suund, mis hetkel ei ole ka riigi prioriteediks. Kuigi tegemist on väga huvitava ideega tulevikuks.

### **Eesti tugevused ja nõrkused eluslabori rakendamiseks**

Kui hinnata Eesti valmisolekut eluslabori kontseptsiooni rakendamiseks, siis esimesena tuleb peatuda neljal „must“ kriteeriumil. IKT teenuste arendamisel ja

katsetamisel on Eestil eelis – inimesed on e- ja m-teenuste suhtes teadlikud, nõudlikud ning on harjumus erinevaid teenuseid kasutada. Seega ligipääs kasutajatele ning nende motiveerimine annavad suured eelise. Eesti positiivsete külgedena tuuakse veel välja paindlikkus.

Peamiseks nõrkuseks on olnud senine passiivsus, eluslabori kontseptsiooni tutvustav esimene ajakirjanduslik artikkel ilmus ajakirjas HEI septembris 2009 ning ettekannetega tutvustus mõtete tekitamiseks väiksemas ringis 18.detsember 2009. Vastuseis Eestis livinglabi loomisele on peamiselt avaliku sektori poolt.

### **Piirangud ja ohud ning kriitika eluslaborite kohta**

Eluslabor eeldab avatud innovatsiooni ning üheks soovitud tulemuseks on teenustootete eksport, siis teiste riikide bürokraatia ja oma ettevõtete kaitse võivad seada tõsiseid takistusi selleks. See on väljakutse kogu Euroopale – leida kohe massturg, nt Brasiilia või Hiina, et investeringud tagasi teenida. EL liikmesriigid leiavad ikka ettekäandeid kuidas tekitada tööd oma kohalikele arendajatele ja IKT sektorile. Põhjamaad on siiski selles suhtes liberaalsemad.

Peamiseks ohuks eluslabori kiirel kasutusele võtmisel on puudulike osadega eluslaborite teke. Mõiste on Euroopas populaarne, kuid selle vale- ja liigkasutus võib tekitada lõpuks pettumust kontseptsioonis. Nagu eelpool mainitud, ei poolda praktikud puudulike osadega eluslaborite teke, mis ei vii innovatsioonideni.

Küsimus on selles, kes peaks maksma innovatsioonide eest näiteks tervishoius jne. heaolu-tervise valdkonnas. Ka Soomes ei ole peamine rahastamisallikas mitte TEKES või mõni muu innovatsiooniagentuur, vaid selleks on Sotsiaal/tervise-ministeerium. Aga siinkohal tekivad mitmed takistused, mis takistavad neil võtmast riski innovatsioonide egutamisel teenuste vallas.

Sarnaselt Eestiga on riigihangetega seotud probleem takistuseks ka teistes riikides. Kui riigihangetel võisteldakse hinna alusel, siis ei pakuta uusi innovaatilisi lahendusi. Lahenduseks pakutakse välja: 1) kõigepeal vaja kindlaks teha, mida on vaja saavutada, ja siis tellida see; 2) panna konkreetne osa eelarvest uute innovaatilistele toodetele. Ettevõttele võib olla vaja lisafinantseerimist, et saaks riigihangetel osaleda. See lisafinantseerimine on vaja Euroopas luua.

### **Kokkuvõte**

Senini on Eesti olnud passiivne ning eluslabori kui uue innovatsioonisuuna entusiastid on avaliku sektori poolt kohanud pigem vastuseisu. Ei tohi piirata mõttega, et olemas on ainult üks õige tee eluslaborite loomiseks Eestis, eluslaborite rakendamisel on mitmeid võimalusi ja suundi. Need erinevad tüübid ja suunad ning eluslaborite hindamine vajab veel edasist uurimist. Eluslaborite toetamine peab olema majanduspoliitiline otsus, sest Eestis on juba aastaid koostöös Helsingi LivingLabiga midagi teha, aga ei ole kohalikku toetust ja Nokia arendusdirektori sõnul hakkab entusiasm otsa saama.

Eesti puhul tuleks tähelepanu pöörata nii riiklikele prioriteetidele, mis võibolla eeldavad täiesti tühjalt kohalt eluslabori loomist – sellisel juhul tuleb veel põhjalikumalt uurida, kas investeeringud ja energia kulutamine on õigustatud. Järkjärgulise metodoloogilise innovatsioonina näeb autor olemasolevate eluslaboritele lähedasemate suhteõrgustike ja ettevõtete arendamist. Kuigi tuleb tunnistada, et tegemist on veel pigem ebaküpse kontseptsiooniga, mida ei ole jõutud põhjalikult uurida. Siiski tuleks ka Eestis selleks, et suudaksime innovatsiooni- poliitikas Euroopaga sama murret rääkida, toetada eluslaborite teket ja levikut.

## MAKSUMORAAL, SELLE MÕJUTEGURID, HINDAMISE VÕIMALUSED JA PROBLEEMID EESTI NÄITEL

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Tänapäeval, mil majanduses toimuvaid protsesse ja muutusi ei suudeta seletada majandusteooria abil vajalikul tasemel ning erinevate protsesside tõlgendamisel tuleb pöörduda teiste teadusharude, sh sotsiaalsühholoogia poole, kogub taoline suundumus jõudu ka maksude tasumise, nende tasumata jätmise, maksukohustuste vältimise ning maksudest kõrvale hiilimise põhjuste väljaselgitamisel.

Küsimused maksukuulekusest ja selle kõikumise põhjustest on sama vanad kui maksud ise ning on uurimisobjektiks senikaua kuni maksud eksisteerivad. Maksudest kõrvale hoidumine on kasvav probleem enamikes riikides. Kui sotsiaalteadlased ütlevad, et maksudest kõrvale hiilimine on sotsiaalne probleem, siis majandusteadlased enamasti kalduvad arvamusele, et tegemist on peamiselt vaid tehnilise küsimusega (Scmolders 2006). Kui aga jätta kõrvale majanduslik kasu, mida võib saada maksude tasumise vältimisel, siis mis mõjutab üksikisikut tasuma makse õigeaegselt ja kohustatud määras?

Maksukuulekusest on saanud majanduspsühholoogia uurimisvaldkond. Eelkõige on selle tinginud ühiskonnas valitsev sotsiaalne dilemma, kas tasuda makse või mitte ning erinevatel põhjustel on sageli üksikisikute egoistlikud tegevused üle ühiskondlikust huvist. Vaatamata sellele, et maksude tasumine on isiku peamiseks kohustuseks riigi ees, sõltub maksukuulekus arvukatest teguritest – nii majanduslikest, poliitilistest, sotsiaalsetest kui ka psühholoogilistest.

Isiku suhtumist maksude tasumisse, tema individuaalseid arusaamu ja norme ning motivatsiooni võib väljendada terminiga „maksumoraal“. Maksumoraali all mõistetakse isikule tõeliselt omast motivatsiooni makse maksta, mis on kui individuaalne valmisolek või moraalne kohustus või uskumus sotsiaalsesse panusesse maksude tasumise tulemusena. Maksumoraali tõlgendatakse ka kui arusaamist moraaali printsiipidest ja väärtustest, et isikutel on kohustus makse maksta.

Läbi viidud uuringute heterogeensusest, mõjutegurite arvukusest ning nende rikkalikest tõlgendamisvõimalustest lähtuvalt selge vastus küsimusele – mis mõjutab maksumaksjat makse tasuma – puudub. Mõjutegureid järjestada ning piiritleda mingite tunnustega on sisuliselt võimatu, sest üks mõjutegur võib olla tihedalt seotud teistega ning mõistetav nii majandusliku, poliitilise kui ka sotsiaalse tegurina.

Üldistades erinevates riikides viimase paarikümne aasta jooksul läbiviidud uuringute tulemusi, saab välja tuua individuaalse maksukäitumise mõjutegurid järgmiselt:

Isiku maksukäitumise **majanduslikud mõjutegurid** on eelkõige seotud isiku ratsionaalse valikuga. Isik hindab, kas maksudest kõrvale hiilimisest teenitav kasu on suurem kui rikkumise eest saadav karistus. Millised on maksudest kõrvale

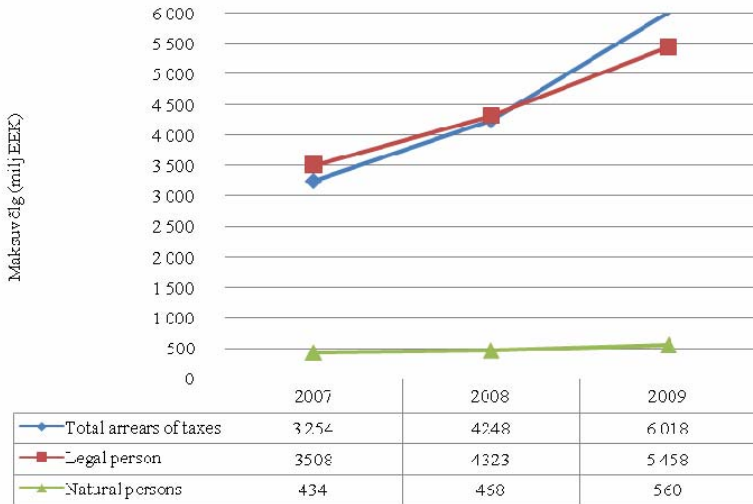
hoidumise võimalused ja kui suur on kontrollimise tõenäosus? Seega mõjutab isiku ratsionaalseid valikuid eelkõige majanduslik kasu, sanktsioonide rakendamine ja nende suurus (Kirchler 2007).

**Poliitilised mõjutegurid** nagu otsene demokraatia, kodanike kaasatus majandus- ja maksupoliitika otsustamisprotsessi ning sellest tulenevad head suhted riigi ja maksumaksja vahel, usaldus riigi kui institutsiooni vastu ning hästi funktsioneeriv avalik haldus on üksikisiku paljude erinevate otsustuste aluseks (Torgler 2007). Seega maksumaksja raha kasutamise läbipaistvus, usaldus valitsuse vastu (Bergman 2002, Torgler 2003), maksusüsteemi õiglus (Taylor 2003) on maksumaksja maksude tasumise valmiduse peamised poliitilised mõjutegurid.

Majanduslike ja poliitiliste mõjutegurite kõrval on isiku maksukäitumise kujundajana olulised ühiskonna üldised arusaamad ning isiku individuaalsed hoiakud ehk **sotsiaalpsühholoogilised mõjutegurid**. Inimene on oma olemuselt sotsiaalne olevus ning tema hoiakute ja arusaamade kujunemisel on oluline ühiskonna üldine hoiak ehk teiste isikute käitumine ühiskonnas. Ühiskonna sotsiaalsed normid ja positiivse sotsiaalse kapitali atmosfäär mõjutavad isiku maksukäitumist ja üldisi arusaamu maksukuulekast käitumisest. Kui ühiskonnas levib sõnum, et maksudest kõrvale hoidumine on tavaline tegevus, st pigem reegel kui erand, siis seeläbi individuaalne valmidus makse maksta – maksumoraal – alaneb. Kui aga ühiskonna üldine suundumus on maksta makse ausalt, siis ka maksumoraal tõuseb.

Maksukuulekust defineeritakse peamiselt maksumaksja valmisolekuna makse maksta ehk nõustuda maksukohustusega ning mitte maksukuulekat käitumist läbi maksude tasumisest kõrvale hoidumise leaalsete ja illegaalsete vahenditega. Kuid küsimus maksumoraalist on laiem kui see, miks inimesed ei peta, isegi kui nad võiksid seda teha. Käesoleva artikli autorina pean vajalikuks lisada diskussiooni maksude tasumata jätmise mõiste ehk maksuvõla kui maksude tasumise kuulekuse näitaja. Maksuvõlg tekib kui maksukohustus on välja arvatud, deklareeritud või määratud ning maksumaksja ei ole vaatamata tähtaja saabumisele oma kohustust täitnud. Seega on maksuvõlgnikuks isik, kellel on peale maksu tasumise tähtpäeva maksukohustus täitmata.

Majanduslanguse peamised sümptomid Eestis – sisenõudluse vähenemine, ekspordi ja teenindussektori kasvu aeglustumine, inflatsiooni kiirenemine ning maksukoormuse tõus – on oluliselt mõjutanud maksumaksjate maksude tasumise valmidust ja suutlikkust makse tasuda kohustatud määral. Kui nn majanduskasvu aastatel 2005-2006 maksuvõlad vähenesid, siis alates 2007-st aastast on maksuvõlad Eestis kiiresti kasvanud (joonis 1).



**Joonis 1.** Maksuvõlgade dünaamika 2007-2009. (Autori arvutused baseeruvad MTA andmetel)

Maksuvõlgade kiire kasv on kahtlemata tingitud majanduskasvu langusest, kuid samas ei tohi alahinnata selles ka ühiskonna hoiakuid sotsiaalsete normide kujundajana. Tänapäev, majanduslanguse tingimustes, kus maksuvõlad on Eestis 2009 aasta jooksul kasvanud ~42%, ulatudes 6 miljardi kroonini, on väga olulised need meetmed, millega mõjutada isikute maksukäitumist. Maksutulu vähesust maksutõusuga või sunnimeetmete karmistamisega korvates ning mitte sotsiaalsete teguritega tegeledes, ei suurendata maksutulu vaid maksustamise vastumeelsust. Isikute maksukäitumine on kultuur, mis muutub väga aeglaselt ning reeglite tõhustamine annab vaid lühiajalise edu. Kultuuri kujundamisel peab arvestama erinevate mõjuteguritega, sh ka riigi nooruse ja selle ajaloolise taustaga.

Millised on võimalused suurendada vabatahtlikku tasumist ning mõjutada maksumoraali kujunemist positiivses suunas? Kas piisab maksutulude tähtsuse selgitamisest riigi elanikkonnale ja/või tuleb alustada maksunduse õpetamist juba üldhariduse tasemel? Üldhariduse tasemel potentsiaalsete maksumaksjate seas maksundusliku õppe- ja teavitustöö läbiviimine on artikli autori arvates üks maksumoraali tõstmise võimalustest, kuid mitte ainus. Tänapäev majandus-situatsioonis, kus maksutuludest sõltub riigi käekäik, peab riik olema valmis panustama mitte ainult maksude administreerimise ja kogumise funktsioonile, vaid ka preventiivsele tegevusele, sh maksumaksja maksukäitumise kujundamisele.

Maksupoliitika väljatöötamisel ja arendamisel on vajalik avalikkuse kaasamine, informeerimine ja teadlikkuse tõstmine maksude tasumise vajalikkusest. Oluline on teadvustada nii erialakirjanduses kui ühiskonnas laiemalt maksumoraali tähtsust ja



tähendust. Demograafilised muutused, üksikisikute käitumistavade, hoiakute ja arusaamade muutused ajas pakuvad uusi väljakutseid mitte ainult maksuhaldurile vaid kogu ühiskonnale.

Maksustamine on majanduslik korraldusvahend, millest sõltub riigi finantsjõud ja kogu riigi heaolu. Maksusüsteemi elujõulisus seisneb selle administreerimise elluviimises. Tähtis ei ole see, kui palju erinevaid makse on kehtestatud, vaid kuidas on korraldatud maksude kogumine. Maksudest kõrvalehoidumine, sh maksukohustuste täitmata jätmine legaalseid ja illegaalseid vahendeid kasutades, ei kao kuhugi, küsimus on vaid selles, kui hästi suudavad maksumaksjad, poliitiline ideoloogia ja administratiivsed meetodid piirata selle mõju riigi haldussuutlikkusele ja finantsjõule.

## **STARDITOETUSE POOLT FINANTSEERITUD VALITUD ALUSTAVATE ETTEVÖTETE TEGEVUSE TULEMUSLIKKUS: VÕIMEKUS PLAANIDEST KINNI PIDADA NING STARDITOETUSE KASUTAMISE EFEKTIIVSUS**

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Ettevõtete tegevusefektiivsus ja võimekus makse maksta on paljude Euroopa Liidu riikide puhul pikaajalise jätkusuutlikkuse võtmeküsimuseks. Seejuures ei ole oluline ainult suurettevõtete roll, vaid ka väikese- ja keskmise suurusega ettevõtete toimimine. Euroopa Liidus on tavapärane alustavate ettevõtete toetamine, seda nii tagastamatu rahalise abi, stardilaenude, turuhinnast madalamate intressimäärade, aga ka lihtsalt konsultatsiooni vormis. Riigi seisukohalt on ülimalt oluline, et toetusmeetmed oleksid suunatud neile ettevõtetele, kes seda ühest küljest vajaksid (ilma toetuseta tegevust ei alustaks) ning kes suudavad tagada toetuse efektiivsuse ehk lähitulevikus luua piisavalt maksutuluseid või eksportkäivet, parandades seeläbi riigieelarve positsiooni aga ka riigi rahvusvahelist konkurentsivõimet ning jooksevkonto seisu. Käesoleva artikli alguses vaadeldakse varasemaid alustavate ettevõtete stardiabi alaseid uuringuid nii Eestis kui ka välismaal, aga ka stardiabi tingimuste muutust Eestis alates selle programmi rakendamisest. Artikli empiiriline osa käsitleb perioodil 2005-2008 starditoetuse<sup>1</sup> saanud 39-t ettevõtet, mille puhul vaadeldakse nii ettevõtete toetuse järgset toimimist, starditoetuse saamise hetkel planeeritu elluviimist ning nimetatud ettevõtetele toetuste jagamise mõttekust riigi seisukohalt. Artikli lõpus tuuakse ära rida soovitusi alustavate ettevõtete stardi- ja kasvutoetuse meetme parendamiseks Eestis. Artiklis kasutatakse andemetest nii starditoetuse taotlustes toodud informatsiooni ettevõtte arengu kohta, majandusaasta aruannete informatsiooni kui ka andmeid ettevõtete maksuvõlgade kohta.

Alustavate ettevõtete starditoetuse programm sai alguse 2002. aastal ning selle suurus on aja jooksul muutunud 50 tuhandest kroonist kuni 500 tuhande kroonini. Esiialgu oli toetuse suurus kõigi ettevõtete jaoks sama, olles erinevatel aastatel maksimaalselt vastavalt 100 tuhat või 160 tuhat krooni. Hiljem jaotati toetus kaheks (vastavalt starditoetus ja kasvutoetus) ning starditoetuse suurus oli maksimaalselt 50 tuhat krooni, kuid kasvutoetus oli erinevatel ajahetkedel vastavalt kuni 200 tuhat või kuni 500 tuhat krooni.

Mainitud 39 ettevõtte andmete analüüs näitab, et starditoetuse saanud ettevõtted on mõnevõrra üllatuslikult teisel tegevusaastal pärast toetuse saamist tegutsenud halvemini kui esimesel aastal. Osaliselt võib selle põhjuseks olla oluliselt halvenenud majanduskliima, kuid samas on nimetatud asjaolu siiski problemaatiline, sest toetuse saanud ettevõtetelt eeldatakse kiiret kasvu. Tabel 1 annab ülevaate

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<sup>1</sup> Alates aastast 2008 on lisaks starditoetuse mõistele suuremahuliste toetuste puhul kasutusel mõiste kasvutoetus, kuid käesolevas artiklis kasutatakse otstarbekuse kaalutlusel läbivalt mõistet starditoetus.

nimetatud ettevõtete mediaannäitajatest, sest valmis väga erinevas suuruses olevate ettevõtete tõttu moonutaks aritmeetilise keskmise kasutamine tulemusi oluliselt.

**Tabel 1.** Alustavate ettevõtete müügitulu, puhaskasumi ja töötajate mediaanväärtused esimesel ja teisel aastal pärast toetuse saamist

Muutuja / aasta	Esimene aasta	Teine aasta
<b>Müügitulu (tuhandetes kroonides)</b>	966,4	890,1
<b>Puhaskasum (tuhandetes kroonides)</b>	30,6	6,8
<b>Töötajate arv</b>	3	3

Allikas: Autorite koostatud.

Kokku planeerisid nimetatud 39 ettevõtet oma stardiabi taotlustes investeeringuid suuruses 8,58 miljoni krooni, millest neile eraldatud starditoetus moodustas 5,13 miljoni krooni. Ühe ettevõtte kohta teeb see keskmiseks investeeringuks 220 tuhat krooni ning keskmise toetuse suuruseks vastavalt 131 tuhat krooni. Erinevatel aastatel väljastatud starditoetuste osas pole võimalik mingeid märkimisväärseid erinevusi välja tuua.

Oluliseks probleemiks on stardiabi saanud ettevõtete maksuvõlad 20. jaanuari 2010 seisuga. Nimelt oli sellel ajahetkel rohkem maksuvõlaga kui maksuvõlata ettevõtteid (vt. tabel 2). Maksuvõlgasid omava 20 ettevõtte koguvõlg oli 3,43 miljoni krooni ning enim maksuvõlgadega ettevõtteid oli absoluutarvuliselt 2006. aastal asutatute seas, kuid osakaaluliselt 2008. aastal asutatute seas. Nimetatud maksuvõlad on tekkinud ennekõike 2009. aastal, kus Eesti majanduskliima oluliselt halvenes.

**Tabel 2.** Stardiabi saanud ettevõtete maksuvõlad 20. jaanuar 2010

Stardiabi saamise aasta	Maksuvõlaga ettevõtete arv	Maksuvõlgade kogusumma (miljonit krooni)	Ilma maksuvõlata ettevõtete arv
2005 <sup>2</sup>	5	1,65	1
2006	8	0,34	10
2007	3	0,89	2
2008	4	0,56	6
<b>Kokku</b>	20	3,43	19

Allikas: Autorite koostatud.

Vaadeldud alustavate ettevõtete puhul võib täheldada olulist plaanide mittetäitumist. Tabel 3 toob ära ettevõtete plaanid esimesel kuni kolmandal tegevusaastal pärast

<sup>2</sup> Üks alustav ettevõtte on hetkel pankrotis ning selle maksuvõlg on 1,26 miljoni krooni.

toetuse saamist ning need viitavad asjaolule, et võrreldes tegeliku situatsiooniga (vt. tabel 1) esineb oluline üleplaneerimine. Sellel võib olla mitmeid võimalikke põhjuseid, nagu näiteks stardiabi saamise hetkel Eesti majanduses valitsenud kasvutrend ja sellest tulenev kiire kasvu planeerimine ettevõtete tegevuses, erinev majandusolukord võrreldes toetuse saamisele järgnenuga, aga ka ettevõtjate soov vastata stardiabi väljastamise tingimustele.

**Tabel 3.** Ettevõtete poolt planeeritud müügitulu, puhaskasumi ja töötajate mediaannäitajad esimeseks, teiseks ja kolmandaks tegevusaastaks pärast stardiabi saamist

<b>Muutja / periood pärast taotlemist</b>	<b>Esimene aasta</b>	<b>Teine aasta</b>	<b>Kolmas aasta</b>
<b>Müügitulu (miljonit krooni)</b>	2,44	3,14	3,64
<b>Puhaskasum (tuhandet krooni)</b>	298	433	474
<b>Töötajate arv</b>	5	6	7

Allikas: Autorite koostatud.

Huvitav asjaolu on ka see, et plaanide täitmine teisel aastal on oluliselt halvem kui esimesel. Samas põhjendavad seda eelnevalt nimetatud kiire kasvu ootus ning praeguseks oluliselt muutunud majanduskeskkond, kuid plaanide mittetäitmise konkreetsemate põhjuste uurimine ei kuulu käesoleva artikli uurimisülesannete hulka.

Ettevõtetele antud starditoetuse jagamise ratsionaalsust on võimalik hinnata mitmest aspektist tulenevalt. Esimese asjaoluna on võimalik välja tuua, kui palju on ettevõtteid suutnud luua maksutulused võrdluses neile omistatud toetustega. Juhul kui maksutulude loomine oleks toetuste kogusummast väiksem, ei oleks vastavate toetuste jagamine mõttekas. Ettevõtete maksutulude leidmiseks on kasutatud ettevõtete töötajate arvu, mille alusel on kõiki personaliga seotud makse ja Eesti keskmist palka arvestades leitud tinglik aastane personaliga seotud maksutulude suurus. Sellise kalkulatsiooni peamiseks põhjuseks on asjaolu, et kõigi ettevõtete majandusaasta aruannetest ei ole võimalik üheselt töötajatega seonduvat maksude tasumist tuvastada. Käibemaksu ja ettevõtte tulumaksu arvestamine oleks antud juhul keeruline ning kuna tööjõuga seotud maksud näitavad hästi ära maksulaekumiste efekti, siis ka mõnevõrra ebaotstarbekas. Ettevõtete poolt tasutud tinglikke personaliga seotud makse kajastab tabel 4.

**Tabel 4.** Alustavate ettevõtete poolt loodud töökohtadega seotud maksud kasutades 2009. aasta maksumäärasid ja keskmist palka (kokku 107 töötajat)

<b>Maksuliik</b>	<b>Aastane maksutulu (miljonit krooni)</b>
<b>Tulumaks</b>	3,08
<b>Sotsiaalmaks</b>	4,99
<b>Tööandja poolt makstav töötuskindlustusmaks</b>	0,21
<b>Töötaja poolt makstav töötuskindlustusmaks</b>	0,42
<b>Töötajatega seotud maksud kokku</b>	8,70

Allikas: Autorite koostatud.

Eelnev viitab sellele, et kui võtta arvesse ettevõtetele antud starditoetuste summaarset suurus, siis ainuüksi aastane personaliga seotud maksulaekumine ületab selle olulisel määral. Lisaks tuleb arvestada asjaoluga, et võimalikud on ka laekumised muudest eelnevalt nimetatud maksudest. Negatiivsete aspektidena saab ära mainida ettevõtete olemasolevad suured maksuvõlad ning ka selle, et vähemalt osadel konkreetsetes ettevõtetes töötavatel inimestel võisid juba varem töökohad olemas olla, seega võib nendega seotud efekti väljatoomine olla küsitav. Samas ei muuda eelnev autorite lõppjäreldest, et maksulaekumiste kontekstis on starditoetus oma eesmärgi täitnud.

Täiendavalt on huvitav uurida, kas konkreetsed ettevõtted oleksid praktikas starditoetust vajanud. Lihtsaimaks meetodiks on võrrelda ettevõtete omakapitali suurus esimese aasta lõpus alustamisel planeeritud investeeringu suurusega (sisaldades nii omafinantseeringut kui ka starditoetust). Kaheksal juhul 28-st on omakapital juba esimese aasta lõpuks suurem kui esialgne investeering, mis viitab sellele, et toetuse omistamine sellistele ettevõtetele oli tõenäoliselt ebaotstarbekas ning nad oleksid hakkama saanud ka ilma selleta.

Eelnevast analüüsist lähtuvalt on järgnevalt juhitud tähelepanu mõningatele asjaoludele, millele võiks alustavate ettevõtete stardiabi süsteemi reformimisel tähelepanu pöörata:

1. Kuna stardiabi taotlemisel esitatud plaanide ja nende tegeliku saavutamise vahel on oluline erinevus plaanide mittetäitmise suunas, siis oleks tulevikus vajalik konservatiivsemalt hinnata ettevõtte võimekust oma soove ellu viia, k.a. nende üldist jätkusuutlikkust ning võimalusi oma kohustusi (k.a. maksukohustusi) korrektselt täita.
2. Mõningate ettevõtete puhul kerkib ülesse küsimus neile stardiabi omistamise otstarbekusest, kuna ettevõtted suudavad juba esimesel aastal teenida piisavalt

suure kasumi, et nende koguinvesteering ületab ettevõtte alustamisel tehtud investeeringuid.

3. Kuna ettevõtete võime makse maksta on starditoetuse määramisel olulise tähtsusega, siis tuleks vastavat kriteeriumit arvesse võtta ka stardiabi jagamisel. Olemasolevad kriteeriumid (näiteks loodavate töökohtade arv, loodav lisandväärtus jms) osaliselt seda arvesse võtavadki, kuid nende näitajate sisu tulevase maksumaksmise võimekust täielikul määral siiski ei peegelda.
4. Taotlemisel ei tohiks rangelt piiritleda ettevõtte müügitulu nõuet, sest vastav näitaja võib sektorite lõikes olla vägagi erinev ning müügitulu üksi ei taga riigile võimalikult suurt maksutulu, kuna suurt müügitulu on võimalik saavutada näiteks väga väikese tööjõuga ning valdkonnas, kus riigile käibemaksulaekumisi ei toimuks (s.t. käibemaksuga mittemaksustatav käive).
5. Kuna starditoetuse puhul on väga oluline ettevõtete elujõulisus, siis on otstarbekam anda väga elujõulistele ettevõtetele suurem toetus ning jätta see vähem elujõulisematele välja andmata. Eelnev viitab sellele, et võib osutada vajalikuks stardiabi suuruse ülevaatamine ning võibolla jätta ülempiir fikseerimata.

## PPP PROJEKTID REGIONAALSES SOTSIAALMAJANDUSLIKUS ARENGUS

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Paljud sotsiaalmajanduslikud ülesanded hariduses, ühistranspordis jne on Eestis kohaliku omavalitsuse ülesanne. Seetõttu peavadki nende majandusharude infrastruktuuri arendamise lahendusi otsima ühetasandilise kohaliku omavalitsusega Eestis eelkõige just vallad ja linnad. Üheks perspektiivsemaks teeks, eriti pealinnas Tallinnas on seejuures kujunenud avaliku ja erasektori koostöö PPP (*Public Private Partnership*) projektidena. Kahjuks on see temaatika Eestis veel nii noor, et puuduvad vähegi arvestatavad uurimistööd ja teaduslikud publikatsioonid. Sellekohaseid artikleid on üsna palju avaldatud ajakirjanduses, kuid need teenivad enamasti poliitilisi eesmärke.

Artikli eesmärk on ühe esimese eestikeelse teaduspublikatsioonina analüüsida PPP projektide õiguslikke ja majanduslikke probleeme seonduvalt Tallinna linnaga. Taustaks antakse ka lühike ülevaade PPP projektide rakendamisest mõningates teistes riikides (eelkõige Euroopa Liidu liikmesriikides).

PPP projektid said alguse 1940. aastatel USAs. Euroopas saavutas PPP populaarsuse 1980. aastatel (eelkõige Suurbritannias M. Thatcheri peaministriks oleku ajal), kui kujunes suur usk Uue Majanduse (*New Economy*) ja Uue Avaliku Halduse (*New Public Management*) kõikvõimsusesse.

Eestis hakati PPP-projektidega tegelema alles 2000. aastate alguses. Tallinnas hakati PPP-projekte kavandama 2001. aastal, kusjuures peamisi objekte nähti teedevõrgu ehitamises. Ühekordseid ja väiksema mahuga PPP-projekte on sel eesmärgil realiseeritud ka väljaspool Tallinna. Näiteks koostöös erasektoriga rajas 2003. aastal Haapsalu Linnavalitsus veepargi koos 25-meetrilise kuue rajaga ujulaga. 2004. aastal rajas Rakvere Linnavalitsus 2 400-istekohaga spordikeskuse, kus saab korraldada ka kontserte. 2006. aastal rajas Pärnu Linnavalitsus 3 300 m<sup>2</sup> pindalaga spordihalli.

Seadused PPP-projektidega seonduvaid probleeme Eestis ei reguleeri. PPP-projekte on üks kord nimetatud Vabariigi Valitsuse programmis. Nimelt Eesti Reformierakonna, Eesti Keskerakonna ja Eestimaa Rahvaliidu 2005. aasta koalitsioonileppes märgiti osas „Riiklus. Õiguspoliitika“, et „19. Valitsusliit loob õigusliku keskkonna erasektori investeeeringute kasutamiseks avalike teenuste osutamiseks (PPP-mudel).“

Teine üleriigiline dokument, kus märgitakse PPP-projekte on Eesti eluasemevaldkonna arengukava 2008-2013, mille visiooniks ja põhieesmärgiks on muuta eluase kõigile Eesti elanikele kättesaadavaks. Püütakse suurendada munitsipaal- ja eraürieluasemete senist vähest osakaalu eluasemefondist. Aastaks 2013 on plaan suurendada munitsipaal-ürieluasemete arvu 6000 eluaseme võrra ja PPP raames luua 700 eluaset.

Tallinna õigusaktidesse jõudis märksõna PPP-projekt 2002. aastal, kui Tallinna Linnavolikogu kinnitas Tallinna linna eelarvestrateegia aastateks 2003-2005. Muuhulgas märgiti seal linna eelarvepoliitika ühe olulisema eesmärgina „*Jaiendada ja suurendada linna tulubaasi – kaasata linna arenguks vajalike investeeringute tegemisel enam erinevate linnaväliste fondide ja erasektori vahendeid... linna 2003. aasta eelarve üks prioriteet on teedevõrgu finantseerimisel kasutada PPP vahendeid.*“ Peagi pärast linna eelarvestrateegia kinnitamist kiitis Tallinna Linnavolikogu heaks linna suuremate teede arendamise kava, kus nähti konkreetset kahe suure objekti puhul (a) ühe enamkoormatud liiklusega ristmiku mitmetasandiliseks ehitamiseks ning b) linnakeskusest liikluse möödasuunamiseks ühe uue magistraaltee rajamiseks) rakendada avaliku ja erasektori koostöö (PPP) põhimõtteid. Paraku Rahandusministeerium teatas seejärel Tallinna linnale, et PPP-projektid tuleb arvestada linna laenukoormuse sisse ja seega pealinn ei saa neid objekte kavandatud viisil ehitada. Seda hoolimata sellest, et seadus PPP-projektide osas piiranguid (veel) ei olnud kehtestanud.

Sellest ajast alates on olnud üks riigi keskvõimu (eelkõige Rahandusministeeriumi) ja Tallinna linna vahelisi eelarvealaseid peamisi vaidlustemasid – kas PPP maht arvestatakse linna seadusega piiratud laenukoormusesse või mitte? Vastavalt Vallaja linnaeelarve seadusele võib Eestis kohaliku omavalitsuse üksus võtta laenu, mille maht ei ületa 60% selle üksuse jooksva aasta eelarvest ning mille tagasimaksmiseks ei vajata ühelgi laenu tagasimaksmise aastal üle 20% üksuse eelarvest. Seni on Tallinn arvestanud PPP-projektide kulusid üksnes iga-aastaste maksetena erasektorile, kuid mitte laenu. 2009. aastast jõustunud uute raamatupidamislike võlakohustuste arvestamise reeglite kohaselt tuleb aga hakata kohaliku omavalitsuse laenude sekka arvutama ka PPP-projektide mahtu. Seejuures on omapärane, et Eurostati metoodika ei arvesta PPP-projekte avaliku sektori laenukoormuse hulka.

PPP-projektid põhjustavad Eestis diametraalselt erinevaid arvamusi nii poliitikute hulgas kui meedias. Ühelt poolt võib kuulda ja lugeda, et Eesti avalik sektor vajavat tulevikus rohkem investeeringuid ja oskusteavet, et riiki efektiivsemalt hallata. PPP kaudu saavat avalik sektor kasutada erasektori innovaativsust, tagada projektide optimaalne ehitamise ja kasutamise maksumus, jagada ülesandeid avaliku ja erasektori vahel vastavalt kummagi pädevusele, tekitada konkurentsi, tagada teenuste kvaliteet ja palju muud. Erasektorile olevat aga PPP täiendav äri ja töökohtade loomise võimalus. Kuid on ka risti vastupidiseid seisukohti. Ajakirjanduses on ilmunud just PPP- projekte käsitlevad artiklid pealkirjadega „Tallinn võlavanglasse – saab tehtud“ või „Partei kuldab oma suursponsoreid“ jne, kus arvustatakse pealinn PPP-projekte ja väidetakse, et nende projektide konkursse võidavad linnas võimuloleva erakonna toetajad.

Paljuski ilmselt seetõttu, et seadused PPP-projekte ei reguleeri, on Eestis ka vastuolulisi arvamusi, mida üldse lugeda PPP-projektideks? Kindlasti mitte iga avaliku sektori koostööd erasektoriga oma infrastruktuuri arendamisel ei saa lugeda nende hulka.



Eesti Rahandusministeeriumi raamatupidamistoimkonna välja töötatud ja 2009. aastast rakendatud juhend fikseerib järgmised PPP-projekti printsiibid:

1. PPP-projekte viiakse enamasti läbi sellistes avalike teenuste valdkondades, mis on traditsiooniliselt riigi või kohaliku omavalitsuse poolt reguleeritavad ja mis nõuavad suurt alginvesteeringut, nagu näiteks teede, sildade, haiglate, koolimajade ja vanglate ehitamine ja nende edasine opereerimine lepingus ettenähtud aja jooksul. PPP-projekti läbiviimise eesmärkideks võivad olla erasektori kompetentsi kasutamine, teenuse kvaliteedi tõstmine, kulude kokkuhoid, riskide jagamine või muud põhjused.

2. PPP-projekti kajastamise põhiküsimuseks on, millise üksuse (kas avaliku või erasektori üksuse) bilansis kajastada PPP-projekti eesmärgil loodud vara. PPP-projekti käigus loodud vara kajastatakse selle üksuse bilansis, kes kannab põhilisi PPP-projekti lepingust tulenevaid riske. Juhul, kui avaliku sektori üksus kannab põhilisi PPP-projekti lepingust tulenevaid riske, kajastatakse PPP-varad ja -kohustused avaliku sektori üksuse bilansis, ning vastasel juhul erasektori üksuse bilansis.

PPP-projekti riskide hindamiseks tuleb läbi viia detailne riskianalüüs. Riskide hindamisel tuleb arvesse võtta kõiki aspekte. Tavapärastel on suurema tähtsusega:

- a) ehitusrisk;
- b) kasutusvalmiduse risk ja
- c) nõudluse risk.

Kui avaliku sektori üksus kannab valdava osa ehitusriskist, siis kajastatakse PPP-varasid üldjuhul avaliku sektori üksuse bilansis. Avaliku sektori üksuse bilansis kajastatakse PPP-varasid üldjuhul ka siis, kui avaliku sektori üksus ei kannata valdavat osa ehitusriskist, kuid kannab valdava osa nii kasutusvalmiduse kui ka nõudluse riskist.

Ehitus-, kasutusvalmiduse ja nõudluse riski hindamisel tuleb võtta arvesse nende riskide erinevate komponentide olulisust ja esinemistõenäosust (ehk nende komponentide võimalikku mõju PPP-projektist tulenevatele rahavoogudele). Suuremat tähelepanu tuleb pöörata nendele riskikomponentidele, mille võimalik mõju PPP-projektist tulenevatele rahavoogudele on suurem. Riskikomponente, mille võimalik mõju kogu PPP-projekti rahavoogude suhtes on ebaoluline või mille esinemistõenäosus on äärmiselt väike, tuleb riskianalüüsis arvesse võtta väiksema kaaluga.

3. PPP-projekte eristab rendilepingutest asjaolu, et lisaks vara kasutada andmisele on lepingu üheks tingimuseks ka sama varaga seotud teenuste osutamine erasektori üksuse poolt lepingus fikseeritud aja jooksul, mahus ja kvaliteedis. PPP-projekte iseloomustab asjaolu, et üldjuhul eeldavad nad konkreetset antud projekti eesmärgil loodava vara ehitamist või soetamist või olemasoleva vara rekonstrueerimist erasektori partneri poolt.

Kahtlemata võib nõustuda esimese ja kolmanda printsiibiga. Paraku teises printsiibis sisalduv nõue, mille kohaselt erasektori poolt rajatav objekt tuleb kajastada valla või linna bilansis, kahtlemata regionaalset majandusarengut ei soodusta. On koguni väidetud (nt endine Viimsi vallavanem U. Arumäe), et sellega välistatakse avaliku sektori koostöö erasektoriga. Peamine põhjus seisneb selles, et järsult piiratakse kohaliku omavalitsuse laenu võtmise võimalusi. Kuid mitte vähem oluline (eriti PPP-projekte seni suuremas mahus rakendanud Tallinnaga seonduvalt) on küsimus selle nõude tagasiulatuva jõu kohta juba töösolevate PPP-projektide suhtes?

Riigikohtu Põhiseaduslikkuse Järelevalve Kolleegiumi 14. oktoobri 2008.a otsusega (3-4-1-14-08) tunnistati rahandusministri 11.12.2003 määruse nr 105 „Riigi raamatupidamise üldeeskiri“ § 11 lg 5 põhiseadusega vastuolus olevaks ja kehtetuks osas, milles see kohustab kohalikke omavalitsusi lähtuma majandusaasta aruande koostamisel RTJ-des toodud nõuetest.

PPP-projektide rakendamisel tuleb arvestada, et kohaliku omavalitsuse üksused oleksid piisava sotsiaalmajanduslike teenuste mahuga ja mitte vähem tähtsana – piisava haldussuutlikkusega. Piltlikult öeldes on oluline jälgida, et avalik sektor ei langeks erasektori huvide „lõksu“. Kuna Eestis on PPP-regulatsioonid seadustes seni puudunud, siis on eriti oluline tagada, et erasektor oma tugevate juristidega ei saaks desinformeerida kohaliku omavalitsuse ametnikke ja lõppotsuseid tegevaid poliitikuid. Muuhulgas isegi tugeva õigusteadusliku kompetentsiga Tallinn on tellinud enne PPP-projektidega alustamist juriidilisi ekspertiise.

*Suuremate PPP-projektidena on Tallinnas käivitunud projektid üldhariduskoolide renoveerimiseks ja munitsipaalalamute ehitamiseks. Koolimajade puhul on linn seadnud eesmärgiks luua võimalikult lühikese ajaga õpilastele kaasaegne õpikeskkond ja õpetajatele tööd motiveerivad töötingimused. Elamumajanduses oli ja on vajadus teine – ehitada kiiresti uusi mõõduka hinnaga üürikortereid.*

Suurim ning poliitikutel hulgas ja seal ka avalikkuse ette jõudnult enim tähelepanu pälvinud PPP-projekt sõlmiti 2006. aastal Tallinna Linnavalitsuse ja kahe erafirma vahel pealinna üldhariduskoolide remondiks ja järgnevas tehniliseks hooldamiseks.

Linn otsustas rakendada PPP-projekti, kuna see võimaldab:

- kiirendada koolide renoveerimist piiratud finants- ning haldusressursside tingimustes;
- kanda koolide renoveerimise ja haldamisega seotud tegevused ja olulisemad riskid – finantseerimise, ehitamise, haldamise, hooldamise jm. riskid – üle professionaalsele partnerile, kes haldab teatud riske paremini, kui linn seda suudab;
- teostada renoveerimis- ja haldustöid efektiivsemalt kui linn seda suudab, kuna enamus projekti elutsükli jooksul tehtavaid kulutusi jääb erapartneri kanda ning seetõttu on võimalik tehtavaid kulutusi ajaliselt paremini planeerida ja tasakaalustada.

Teine suur PPP-projekt Tallinnas hõlmab elamuehitust. Taustaks ja selle projekti vajaduse selgitamiseks tuleb märkida, et 1990. aastate elamureformi käigus erastati Eestis ja sh Tallinnas peaaegu kõik korterid. Sellega kujunes Eesti Euroopa riikide elamumajanduses ühe kõrgeima erasektori osatähtsusega (üle 90%) riigiks. Näiteks Tallinnas moodustas 2005. aastal linna omandis olev elamispind kogu linnas olevast elamispinnast vaid 2,5%. Ühtegi uut munitsipaalkorterit ei ehitatud Eestis taasiseseisvumise järgse kümne aasta jooksul ei Tallinnas ega ka kusagil mujal. Alles 2002. aastal kinnitas Tallinna Linnavalikogu esimese munitsipaalelamuehituse programmi „5 000 eluaset Tallinnasse“.

Elamumajanduse PPP-projektiga on Tallinnas alustatud üürieluasemete ehituse ja väljaüürimise süsteemi loomist, kus üürihinnad katavad kõiki otseseid kulusid. Sellise süsteemiga saavutatakse turuüüridest madalamad üürihinnad eelkõige järgmiste meetmetega: 1) linn saab võrreldes erafirmaga võtta laenu olulisemalt pikemaks perioodiks ja madalama laenuprotsendiga; 2) üürihindades ei sisaldu arenduskasumit ega spekulatiivset maa hinda (linna üürihinna arutamise kuludes arvestatakse maa hinnaks maa maksustamishind); 3) pikaajalise mahuka ehitusprogrammiga saavutatakse madalamad ehituskulud; 4) välditakse kalleid lahendusi või pakkumisi, samas lähtutakse hoone eluea võimalikult madalatest kasutus-kuludest.

Kahtlemata on PPP-projektide puhul raske ja vaieldav nende maksumuse määramine ning eeskätt seetõttu, et tulevased teenuste hinnad (eksploatatsioonikulud jms) on raskelt prognoositavad. See asjaolu annab ka kerge võimaluse neid projekte kritiseerida.

Kohaliku omavalitsuse üksusi sunnib PPP-projektidest abi otsima ka asjaolu, et riigi keskvoim paneb kohalikule omavalitsusele järjest uusi ülesandeid, mida ei rahastata riigieelarvest. Veelgi enam peavad kohaliku omavalitsuse üksused erasektoriga koostööd tegema siis, kui tahetakse täita vabatahtlikke ülesandeid ja arendada oma linnas või vallas sportimiseks või vaba aja veetmiseks infrastruktuuri.

Sotsiaalmajanduslike teenuste efektiivsemaks ja kvaliteetsemaks osutamiseks, sh PPP-projektide rakendamiseks oleks Eestis kohaliku omavalitsuse üksustel vaja kas liituda või teha koostööd, kuid mõlemad protsessid on Eestis seni olnud tagasihoidlikud.

Kokkuvõtlikult võib öelda, et Eestis on PPP projekte seni rakendatud alles mõned aastad ning seda on tehtud üksnes sotsiaalse infrastruktuuri objektide renoveerimiseks (koolimajad) või ehitamiseks (elumajad, spordirajatised). Kuigi PPP-projekte on olnud kavandatud ka tehnilise infrastruktuuri (teedevõrgu) arendamiseks, ei ole need seni realiseerunud. PPP-projektid on olnud Tallinna kesksed ja selle põhjuseks on ka asjaolu, et Tallinnal on teistest linnadest oluliselt suurem potentsiaal keeruliste PPP-projektide haldamiseks ja finantseerimiseks. PPP-projektide ulatuslikumat rakendamist on takistanud puuduvad üleriigilised regulatsioonid.

# SOTSIAALKAPITALI MÕJU INVESTEERINGUTELE EUROOPA RIIKIDE NÄITEL

Eve Parts  
Tartu Ülikool

## Sissejuhatus

Viimastel aastakümnetel on majanduskasvu alases kirjanduses hakatud üha rohkem tähelepanu pöörama majandusarengu sotsiaalsetele ja institutsionaalsetele aspektidele, mis on (ühe võimalusena) lihtsustatult koondatavad sotsiaalkapitali mõiste alla. Sotsiaalkapital oma laiemas tähenduses hõlmab üldist usaldust, sotsiaalseid norme ja võrgustikke, mis võivad soodustada majanduskasvu nii otseselt kui kaudselt, traditsiooniliste kasvutegurite kaudu. Käesolevas artiklis uuritakse sotsiaalkapitali mõju investeeringutele kui olulisimale kasvutegurile. Eraldi tähelepanu all on pikema demokraatliku traditsiooniga Lääne-Euroopa (LE) riikide ning post-kommunistliku taustaga Kesk- ja Ida-Euroopa (KIE) riikide võimalikud sarnasused ja erinevused.

## Teoreetiline raamistik

Teoreetiline kirjandus rõhutab kolme aspekti, kus ilmneb sotsiaalkapitali olulisus majanduse ja ühiskonna kui terviku jaoks: sotsiaalkapital 1) aitab reguleerida ressursside ja hüvede jaotust, 2) soodustab koostööd ja ühistegevust, 3) alandab transaktsioonikulusid ja suurendab seeläbi turusuhete efektiivsust. Investeeringute seisukohalt omab olulisimat rolli just viimasena mainitu. Esiteks, kõrge usalduse ja koostöövalmiduse korral on väiksem vajadus riiklike regulatsioonide ja seadusandluse järele, mis on suhteliselt kallid. Teiseks, usaldus ja ühiskondlikud normid aitavad pärssida võimalikku oportunistlikku käitumist riski ja määramatuse tingimustes. Kolmandaks, võrgustikud kujutavad endast mitmekülgselt ja mõjuvõimsat infokanalit, mille kaudu saab hankida teavet nii kasumlike investeerimisvõimaluste kui potentsiaalsete äripartnerite usaldusväärsuse kohta. Eelöeldut teiste sõnadega kokku võttes saab üldistada, et sotsiaalkapitali olemasolu võimaldab vähendada mitmesuguseid majandustehingute sõlmimise, jõustamise ja järelevalvega seotud kulusid, säästes sel viisil ressursse (nii aega kui raha) ja suurendades tehingute kasumlikkust. Sama arutelu riigi kui terviku tasandile laiendades on erinevad autorid jõudnud järeldusele, et sotsiaalkapitali kõrgem tase parandab riigi üldist investeerimiskliimat, kuna usaldusväärsemas ühiskonnas on majandusagendid reeglina vähem riskikartlikud ja seega altimad investeerima.

## Empiirilised tulemused

Empiirilises analüüsis on vaatluse all kokku 31 riiki: 17 Lääne-Euroopast ning 14 Kesk- ja Ida-Euroopast.<sup>1</sup> Seoseid sotsiaalkapitali ja investeeringute vahel hinnatakse

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<sup>1</sup> KIE riikidest on analüüsi kaasatud Bulgaaria, Valgevene, Horvaatia, Tšehhi Vabariik, Eesti, Ungari, Läti, Leedu, Poola, Rumeenia, Venemaa, Slovakkia, Sloveenia ja Ukraina ning LE

OLS regressioonimudeli abil. Maailma Väärtushinnangute uuringus (WVS – World Values Survey) neljandast voorust (1999) saadud sotsiaalkapitali andmed on koondatud faktoranalüüsi abil kümneks komponendiks – nii osutub võimalikuks sotsiaalkapitali erinevate aspektide mõju eristamine. Ka investeringuid käsitletakse laiapõhjaliselt – vaatluse all on nii koguinvesteringud kui nende kasv perioodil 2000-2006, aga samuti otsesed välisinvesteringud ning riigi sisesäästud kui oluline investeerimisressursi allikas.

Regressioonianalüüsi tulemused on koondatud üldistatud tabelisse 1, mille päises on välja toodud sõltuva muutujana kasutatud alternatiivsed investeringunäitajad ning esimeses veerus sõltumatute muutujatena kasutatud sotsiaalkapitali komponendid, mis tuletati algindikaatoritest faktoranalüüsi abil.

Kuna sotsiaalkapitali mõju investeringutele hinnati erinevate investeringuid kirjeldavate sõltuvate muutujatega mudelite põhjal, siis polnud ka tulemused ühesed. Siiski leidis kõigis mudelites kinnitust sotsiaalkapitali mõjude sarnasus KIE ja LE riikides. Abistamise komponendi puhul ilmnis kõige rohkem statistiliselt olulisi positiivseid seoseid erinevate investeringunäitajatega, samal ajal kui ülejäänud sotsiaalkapitali komponentide mõju investeringutele oli valdavalt ebaoluline või negatiivne (v.a. otseste välisinvesteringute puhul). Investeringute ning sisesäästude osakaalud SKP-s olid sarnaselt negatiivselt mõjutatud poliitilise aktiivsuse, ühiskondlike normide, üldise usalduse ja pereväärtuste poolt. Lisaks mõjutasid sisesääste kui investeerimisressursi potentsiaalset allikat positiivselt abistamine ja hoolimine ning institutsionaalne usaldus ja keskkond. Huvipakkuvad olid välisinvesteringute mõjurite analüüsitulemused. Ilmnis OVI positiivne seotus formaalsete võrgustikega ning negatiivne seotus poliithuvi, sõprussuhete ja haldus-suutlikkusega. Kui esimese ja viimase seose põhjused on üsna ilmsed, siis ülejäänud tulemustele on raskem selgitusi leida. Samuti nähtus, et mitmed investeringute osakaalu SKP-s negatiivselt mõjutanud sotsiaalkapitali komponendid omavad välisinvesteringutele positiivset mõju.

Kokkuvõtvalt võib öelda, et investeringuid mõjutavad enim usalduse ja normidega seotud sotsiaalkapitali komponendid, samal ajal kui võrgustikega seotud komponentide mõju investeringutele on ebamäärasem. Siit võib järeldada, et investeringuid soodustavate poliitikate kujundamisel tuleb tähelepanu pöörata investeerimiskeskonnale kõige laiemas tähenduses, unustamata ühiskonna üldist usaldusväärsust ja sotsiaalsete normide tugevdamise olulisust.

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riikidest Austria, Belgia, Taani, Soome, Prantsusmaa, Saksamaa, Kreeka, Island, Iirimaa, Itaalia, Luksemburg, Malta, Holland, Portugal, Hispaania, Rootsi ja Suurbritannia.

**Table 1.** Sotsiaalkapitali komponentide mõju investeeringutele

Sõltumatu muutujad	Sõltuvad muutujad	Koguinvesteeringute kasv	Koguinvesteeringute osakaal SKP-s	Fikseeritud investeeringute osakaal SKP-s	Otseste välisinvesteeringute osakaal SKP-s	Sisesäästude osakaal SKP-s
		ns	Positiivne	Positiivne	ns	Positiivne
	F1 abistamine	ns	ns	ns	ns	Positiivne
	F2 hoolimine	Negatiivne	ns	ns	ns	Positiivne (ilma kontrollmuutujateta)
	F3 institutsionaalne usaldus	ns	Negatiivne	Negatiivne	Positiivne	Negatiivne
	F4 poliitiline aktiivsus	ns	ns	ns	Negatiivne	ns
	F5 huvi poliitika vastu	ns	Negatiivne	Negatiivne	Positiivne	Negatiivne
	F6 normid	ns	ns	ns	Positiivne	ns
	F7 kuulumine orzansisatsioonidesse	ns	ns	ns	Negatiivne	Negatiivne
	F8 sõbrad	ns	ns	ns	Positiivne	ns
	F9 perekond	ns	Negatiivne	Negatiivne	Negatiivne	Negatiivne
	F10 üldine usaldus	ns	Negatiivne	Negatiivne	Positiivne	ns
	Haldussuutlikkus	ns	ns	ns	Negatiivne	Positiivne
	TRANS (post-kommunistlikku tausta kirjeldav fiktiivne muutuja)	Positiivne (kuid muudab sotsiaalkapitali ebaoluliseks)	Positiivne (kuid muudab sotsiaalkapitali ebaoluliseks)	ns	Negatiivne (koos väliskaubandusega)	Negatiivne (koos kontrollmuutujatega)
	Chow test	ns	ns	ns	ns	ns
	Märkused (lisatingimused statistiliselt olulise efekti ilmumiseks)	Sotsiaalkapitali mõju on oluline ainult kontrollmuutujate mitteamestamisel	Sotsiaalkapitali mõju olulisus sõltub riigi keskmisest tulutasemest		Mõju on enamasti oluline ainult koos väliskaubandusega	Mõju on oluline ainult kontrollmuutujate (hariduse ja väliskaubanduse)

Märkus: ns – näitab vastava seose või statistilise testi ebaolulisust ( $p < 0.05$ ).

Allikas: Autori koostatud.

## HARIDUSSÜSTEEMI JUHTIMINE LÄBI SISEHINDAMISE

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Tartu Ülikool

Tulemuslikkuse hindamine on erasektoris ulatuslikult levinud, avalikus sektoris hakati seda rakendama seoses tulemusjuhtimise rakendamisega. Nii era- kui avaliku sektori organisatsioonides on tulemuslikkuse hindamine vajalik selleks, et teha olemasoleva info põhjal tulevikku suunatud otsuseid lähtuvalt organisatsiooni eesmärkidest ja nende saavutamiseks kasutatud meetmetest. Haridussüsteemi tulemuslikkuse hindamine on keerukas selle eesmärkidevahelise konflikti ning oluliste positiivsete välismõjude tõttu. Ühelt poolt soovitakse saavutada suurepäraseid tulemusi – koolitada tarku kodanikke, kes panustaks riigi majandusarengusse, teisalt tuleb igapäev tagada võrdsed võimalused, rahvastiku sotsiaalne sidusus. Selliste eesmärkide täitmist on keeruline mõõta ja hinnanguid anda; veelgi keerulisem on kujundada hindamise põhjal hariduspoliitikat, kuna paljus on olulised pigem kvalitatiivsed väärtused.

Käesoleva artikli eesmärgiks on analüüsida, kuidas enesehindamise poliitika rakendamine Eesti haridussüsteemis on end õigustanud ja millised on peamised probleemid ning võimalikud lahendused. Selleks analüüsitakse haridussüsteemi enesehindamist<sup>1</sup> Eesti üldhariduskoolides ning tuuakse välja peamised probleemid, tuginedes koolide enesehindamise raportitele ning koolides läbiviidud küsitlustele. Artikkel koosneb kolmest osast. Esimeses osas antakse ülevaade nii enese- kui välishindamise olemusest haridussüsteemis. Detailsemalt keskendutakse enesehindamisele, kuna viimane on tunnustatud koolide tulemuslikkuse tagamisel eriti oluliseks. Teises osas kirjeldatakse meetodikat, mida rakendati Eesti koolide enesehindamissüsteemi analüüsimisel. Kolmandas osas tuuakse välja analüüsi peamised tulemused ja autoritepoolsed soovitusel.

Paljud arenenud riigid on vastutuse haridussüsteemi tulemuslikkuse eest delegeerinud koolidele. Tõdetakse, et kohaliku tasandi otsused tagavad ühiskonna suurema rahulolu ja kulutuste tõhususe. Et koolid tegutseksid maksimaalselt õpilaste ja nende vanemate huvides, tekitatakse koolide vahel konkurents, rakendades nii õpilasepõhist finantseerimissüsteemi kui vanemate ulatuslikku vabadust oma lapse kooli valiku osas. Samuti on suurendatud koolide tulemusvastutust nii ühiskonna kui riigi ehk hariduse finantseerijate ees. Selleks rakendatakse õppeasutuste enese- ja välishindamist ning riiklikult hinnatavaid eksameid ja tasemetöid. Wößmann et al. (2008) uurimus kinnitab, et selline haridussüsteemi institutsionaalne korraldus, mida iseloomustavad koolide ulatuslik autonoomia, tulemusvastutus ja konkurents, on tugevalt seotud ka õpilaste parema tulemuslikkusega.

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<sup>1</sup> Kuigi Eesti seadusandlus ja vastavasisuline kirjandus räägib antud kontekstis koolide sisehindamisest, on autorite hinnangul tegu pigem enesehindamisega, vastava valdkonna teaduskirjanduse terminoloogia kontekstis.

OECD (*Organization for Economic Co-operation and Development*) (2008) liikmes- ja kandidaatriikide (sh Eesti) seas läbiviidud uuring näitab, et võrreldes teiste riikidega on Eesti üldhariduskoolidel seaduse tasandil määratud ulatuslik autonoomia otsustamaks kooli õppekorralduse, personalijuhtimise ja eelarve ning arenguga seotud küsimuste üle. Ka on Eestis rakendatud õppeasutuste enesehindamist kõrvuti välishindamisega, sh riiklikult hinnatavad eksamid ja tasemetööd, mis OECD uuringu kohaselt teistes arenenud riikides veel väga laialt levinud ei ole. Seega on Eesti ulatuslikult deentraliseeritud haridussüsteem huvitav näide uurimaks haridussüsteemi tulemuslikkuse hindamist.

Haridussüsteemi hindamisega seotud problemaatika on tabavalt kokku võtnud Nevo (2001), väites, et keegi ei salli välishindamist, samal ajal kui keegi ei usalda enesehindamist. Kuigi koolide välishindamine (nt riiklikult väljatöötatud ühtsetel alustel eksamite korraldamine, koolitatud inspektorite poolt õppetundide külastamine) põhineb üldiselt objektiivsetel alustel, tekitab see koolides vastuseisu, eneseusalduse ja professionaalsuse langust (Webb and Vulliamy 1998). Uurimused kinnitavad, et koolide enesehindamisel on üldiselt tugevam positiivne mõju õpilaste õpitulemustele, kui välishindamisel. Ideaalis viivad enesehindamist läbi koolid ise, iseenda tarvis iseennast hinnates, eesmärgiga hinnata oma tugevusi ja nõrkusi ning seada arengu- ja tegevusplaanid paremate õpitulemuste saavutamiseks (Swaffield, MacBeath 2005). Hinnatakse mitte inimesi, vaid protsesse, et identifitseerida tegevused, mis tagavad tulemuslikkuse ning korrigeeritakse oma tegevust vastavalt sellele. Kui osalised ise tajuvad hindamisest saadavat kasu, motiveerib see neid ka enam tulemuslikkusse panustama. Nii toetab toimiv kooli enesehindamissüsteem ka õpetajate professionaalset arengut ja motiveerib neid enam õpilaste edusse panustama (Towler, Broadfoot 1992). Kuivõrd õpetajad on mitmete uuringute kohaselt (nt McKinsey&Company 2007; Rivkin 2003) olulisim tegur õpilaste heade õpitulemuste saavutamisel, on toimiva enesehindamissüsteemi oskuslik välja-töötamine ja rakendamine hariduspoliitika suureks väljakutseks.

Selleks, et kooli enesehindamissüsteem tagaks oodatud tulemuste saavutamise, on oluline selle väljatöötamise kaasata ka õpetajad ja teised hindamisel osalevad huvigrupid. Enesehindamine peab olema oluline osa organisatsiooni kultuurist, igapäevaelu silmis õiglane, arusaadav ja läbipaistev ning põhinema jagatud vastutusel tulemuslikkuse ning edu saavutamise eest. (Performance... 2000) Lisaks sellele, et töötajad on teadlikud organisatsiooni eesmärkidest, juhtimis- ja hindamissüsteemist, peab meil olema ka võimalus nende väljatöötamise ja arendamise panustada. Vastasel juhul leiab kooli enesehindamissüsteem suure tõenäosusega vastuseisu õpetajate seas, nagu tõdesid Marsden ja French (1998) oma uurimuses.

Siiski on uurimusi, mis kinnitavad ka vastupidist. Sedikides (1993) väidab, et individid püüavad hoiduda negatiivsest informatsioonist ja tõlgendavad infot endale sobivamal moel. Hoidutakse negatiivse ja ebameeldiva tunnistamisest, mistõttu kalduvad nad end pigem ülehinnama (Dunning *et al.* 2004). Tuleb tõdeda, et igasugusel hindamisel on olemas veategur. Seetõttu on oluline läbi viia ka koolide välishindamist, nagu näiteks riiklikke eksameid ja tasemetöid, mis kajastavad õpitulemusi ühtsetel objektiivsetel alustel. Samas ei võimalda välishindamine



hinnata osaliste rahulolu ja teisi väärtusi, mis haridussüsteemi oodatud mõju – väärika ühiskonna – saavutamise seisukohalt samuti olulised on. Kajastavad ju õpitulemused vaid haridussüsteemi vahetat väljundit. Seega on oluline, et koolide välis- ja enesehindamisest tekiks sünergia, et erinevatest allikatest pärinev info saaks ühendatud kooli arengu heaks (Syneva 2007). Et tulemuslikkuse hindamisest oodatud kasu saada, peavad muutuma koolijuhi, õpetajate ja teiste kooli huvigruppide rollid ja vastutus, organisatsiooni sisekliima. Tolofari (2005) on süstematiseerinud Inglismaa ja Šotimaa koolides toimunud struktuursed muudatused ning koolide suhted ühiskonnaga seoses koolide suurema autonoomiaga järgmiselt:

1. Muutunud rollid ja suhted – nii koolisisesele kui koolide ja väliskeskonna vahel. Kooli töötajad ja ka lapsevanemad osalevad kooli juhtimises, arengu planeerimises; koolidelt eeldatakse aktiivsemat koostööd huvigruppidega.
2. Haridussüsteemi juhtimismudel – koolid ise on olulisimad otsustajad, tegeledes eelarvestamise ja planeerimise, ressursijaotuse, personali värbamise ja valikuga, tulemuslikkuse hindamise, jälgimise ja edendamisega.
3. Uued rahastamis põhimõtted – kooli eelarve määrab õpilaste arv koolis. Koolid peavad üksteisega konkureerima, et olla õpilastele võimalikult atraktiivsed.
4. Tulemusvastutuse olulisus – tähtsustatakse koolide tulemusvastutust huvigruppide ja lapsevanemate ees. Ka õpetajad vastutavad üksteise ees.
5. Koolijuhi uus roll – koolijuhi amet sarnaneb enam äriettevõtte juhile, vajalikuks osutuvad teadmised finantseerimis-, eelarvestamis- ja juhtimis põhimõtetest. Enam tuleb tegeleda kooli tulemuslikkuse juhtimise ning välise positiivse imago kujundamisega.
6. Hariduslikud ja teised väärtused õpetamises – üha enam pööratakse tähelepanu tulemuslikkusele ja selle hindamisele ning ressursside juhtimisele. Kollegiaalsus, mis traditsiooniliselt õpetajaametiga kaasas käis, on vähenenud.

Eestis on alates 1997. aastast rakendatud õpitulemuste välishindamist. 2006. aastal seadustati uus õppeasutuste enesehindamise kord, mis alates 2010. aastast on kohustuslik kõikidele üldhariduskoolidele. Paralleelselt on vähendatud välis- hindamise osatähtsust, mis täna seisneb valdavalt õpitulemuste hindamises riiklike eksamite ja tasemetööde põhjal. Põhikooli- ja gümnaasiumiseaduse (Basic... 1993) kohaselt on koolide enesehindamise eesmärgiks tagada kooli jätkusuutlik areng ning toetada õpilaste arengut. Enesehindamise protsessi juhib koolis direktor, kes kinnitab ka kooli enesehindamise korra. Seaduses on ette nähtud, et koolide enesehindamine peab keskenduma järgmistele aspektidele:

1. eestvedamine ja juhtimine, strateegiline juhtimine;
2. personalijuhtimine;
3. koostöö huvigruppidega;
4. ressursside juhtimine;
5. õppe- ja kasvatusprotsess.

Antud artikli analüüsiosa on struktureeritud lähtuvalt Tolofari (2005) kirjeldatud muutustest, mis peaksid aset leidma autonoomselt tegutsevates koolides, et saavutada oodatud tulemuslikkus. Ehk täpsemalt, analüüsis tuuakse välja, mil määral on Eesti koolides muutunud rollid ja suhted, juhtimismudel, rahastamis põhimõtted,

tulemusvastutuse olulisus, koolijuhi roll ning muud väärtused õpetamises. Käesoleva artikli empiiriline osa tugineb kahele Eesti koolides läbiviidud uurimusele:

1. Analüüsiti Eesti üldhariduskoolides 2008. aastal läbiviidud enesehindamise raporteid, mis põhinesid juba uuel enesehindamise korral. Kuna uus enesehindamise kord on koolidele kohustuslik alates 2010. aastast, oli antud artikli raames võimalik analüüsida vaid 14 kooli tulemusi, kes vabatahtlikult viisid enesehindamise läbi juba enne kohustuse tekkimist. Seetõttu tuleb tunnistada, et analüüsi tulemused on võrdlemisi piiratud väikese koolide arvuga, ning seda tuleks korraldada siis, kui kõikides koolides on enesehindamine läbi viidud.
2. Lisaks lülitati analüüsi teine uuring, mille pilootküsitlus viidi läbi Eesti üldhariduskoolides 2009. aasta mais. Elektroonilisele küsimustikule vastas kokku 51 õpetajat ja 11 koolijuhti 11st üldhariduskoolist, mis valiti välja juhuslikult.

Analüüsi tulemused näitavad, et koolisisesed suhted ja rollid ei ole Eesti koolides vajalikke muutusi läbi teinud. Õpetajad on ainult osaliselt kaasatud sisehindamissüsteemi väljatöötamise ja enesehindamise läbiviimise: vaid ühes koolis oli enamus otsuseid ühiselt läbi arutatud ja konsensusepõhiselt otsustatud. Ainult kolmes koolis tunnistasid õpetajad, et mõistavad enesehindamise vajadust ja tunnetavad enda olulisust selle läbiviimisel. Sama näitas ka teine, pilootuuring: vaid pooled õpetajad tunnistasid, et nad on olnud kaasatud oma kooli õpetajate tulemuslikkuse hindamissüsteemi väljatöötamise ja et koolis rakendatavad tulemuslikkuse hindamise põhimõtted on neile arusaadavad. Samale küsimusele vastas positiivselt 82% kooli direktoritest. Seega on koolijuhtide suhtumine tulemuslikkuse hindamise märksa positiivsem. Seda võis ka eeldada, kuna seaduse kohaselt vastutab enesehindamissüsteemi väljatöötamise eest koolidirektor, kes otsustab ka selle, millisel määral seejuures õpetajaid ja teisi sihtgruppe kaasata. Uuringud kinnitavad, et enesehindamissüsteemi juurutamisel organisatsioonides on peamiseks probleemiks see, et keskendutakse liialt hindamissüsteemi ja vastava raamistiku väljatöötamisele ning unustatakse kaasata töötajaid.

Enesehindamise raportite analüüs näitab, et koolid ei ole selgelt määratlenud oma huvigruppe – vaid kolm kooli olid määratlenud oma huvigrupid, samal ajal tõdesid kaheksa kooli, et kõik nende huvigrupid olid kooli enesehindamisse kaasatud. Seega, kui koolid ei ole teadvustanud, kes on nende peamised huvigrupid, ei saa nad neid ka kooli juhtimisse kaasata. Võib järeldada, et koolid ei pea huvigruppide kaasamist kooli arendamisse oluliseks, samal ajal kui uuringud kinnitavad, et huvigruppide kaasamine kooli juhtimisse on tugevalt seotud kooli tulemuslikkusega.

Eesti haridussüsteemi juhtimismudel põhineb ulatuslikul kooli ja kohalike omavalitsuste autonoomial. Alates 2001. aastast finantseeritakse koole õpilasepõhiselt. Munitsipaalkoolidega samadel alustel rahastatakse ka üldhariduslikke erakoole. Seega on loodud konkurents mitte ainult munitsipaalkoolide vahel, vaid konkurentsituatsiooni süvendavad veel ka erakoolid. Seadus näeb ette, et koolijuht vastutab eelarve ja arengu planeerimise; personali värbamise ja valiku eest. Koolide enesehindamise tulemused näitavad aga, et koolijuhi otsustusvabadus varieerub ulatuslikult. Tihti dikteerib kohalik omavalitsus koolile detailse eelarve ja kulud, õpetajate palgamäärad ning tööttingimused.

Tuleb tunnistada, et Eesti koolid ei teadvusta tulemusvastutuse olulisust – vaid kolm kooli 14st viisid läbi lapsevanemate seas rahulolu-uuringuid. Vaid ühes koolis korraldatakse õpilaste rahuloluküsitlusi, ja seda hoopis õpilaste eestvedamisel. Ainult kahes koolis tunnistasid õpetajad, et nad sooviksid oma töö tulemuslikkust oma kolleegidega võrrelda. Õpetajate arenguevestlusi korraldatakse kõigest kolmes koolis. Teine, pilootuuring näitas, et koolid üldiselt arvestavad rahuloluküsitluste tulemusi oma tegevuste planeerimisel – nii vastas 78% õpetajatest ja 92% koolijuhtidest. Probleemaatiline on, et teatud hulk õpetajatest ei osanud öelda, kas õpetajate või õpilaste/lapsevanemate arvamustega on koolijuhtimisel arvestatud (vastuste osakaal õpetajate seas vastavalt 26% ja 18%). Sellised vastused viitavad arusaamatusel ning võib olla, et koolides ei korraldata rahuloluküsitlusi üldse.

Järgnevalt analüüsiti struktuurimuutusi ja hariduslikke väärtusi õpetamises. Koolide enesehindamise raportite analüüsist järeldub, et vaid kolmes koolis on määratletud kooli väärtused ja traditsioonid, mida jagavad ühtlasi ka kooli töötajad. Eestis on võrdlemisi pikka aega korraldatud riiklikke eksameid ja tasemetöid. 58% pilootuuringus osalenud õpetajatest tõdesid, et nad analüüsivad oma õpetamise tulemuslikkust riigieksamite ja tasemetööde tulemuste põhjal. Koolide enese- ja välishindamissüsteemi toetab Eesti Hariduse Infosüsteem, kust iga kooli kohta on võimalik näha nende peamisi tegevusnäitajaid ja neid ka teiste sarnaste koolidega võrrelda. Enesehindamise raportitest aga järeldub, et koolides on vajaka teadmistest ja oskustest nende tulemusindikaatorite tõlgendamisel.

Viimaks analüüsiti koolijuhi rolli Eesti üldhariduskoolides. Enesehindamise raportitest ilmnes, et koolijuhtidel napib juhtimisalaseid teadmisi. Vaid nelja kooli puhul leidis kinnitust, et koolidirektorit peetakse liidriks kooli arendamisel, enesehindamise ja meeskonnatöö korraldamises. Ka koolijuhid ise tunnistavad, et nad vajaksid enam tuge eesmärkide seadmisel ja tulemuslikkuse mõõtmisel. Vaid kolme end hinnanud kooli puhul olid määratletud peamised enesehindamise eesmärgid; vaid kahes olid määratletud enesehindamise kriteeriumid ja meetodika.

Kokkuvõttes ei ole Eesti koolid valmis ulatuslikuks vastutuseks hariduse tulemuslikkuse eest, mille neile riiklik hariduspoliitika on neile on määranud. Koolidirektori amet on Eestis väga vastutusrikas ja eeldab temalt suurepäraselt juhtimiskompetentsi. Seega on äärmiselt vajalik riiklik tugi koolidele koolituste pakkumisel ning enesehindamise meetodika väljatöötamisel ja rakendamisel. Koolijuhid peavad ennekõike ise uskuma enesehindamise kasulikkusesse ja mõistma selle rakendamispõhimõtteid ning eesmäärke. Nii, nagu koolijuhid peaksid tegema enam koostööd koolisisesele enesehindamissüsteemi juurutamisel ja rakendamisel, peaksid ka poliitikakujundajad tegema koolidega tihedat koostööd, et tagada koolidele enesehindamise läbiviimiseks vajalikud ressursid, detailsed juhendmaterjalid ning teadmised. Alles siis on võimalik enesehindamist rakendades saavutada oodatud tulemused haridussüsteemis.

## TULETORNID EESTIS: „AVALIKE KAUPADE“ PAKKUMISE MEHCHANISM

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Käesoleva artikkel kuulub avaliku sektori ökonomika valdkonda, kitsamalt käsitletakse mehhanisme, mis võimaldaksid erapakkujal toota avalikke kaupu. Hüpotees, mida kontrollitakse, on järgmine – kas erainitsiatiiv suudab luua efektiivsel määral avalikke kaupu? Ning kui hüpotees ei leia kinnitust, siis milline peaks olema mehhanism või institutsionaalne maatriks, mis seda tagaks? Mehhanismi või institutsionaalne maatriksi all peetakse silmas riigipoolset „abi“ turgudele ehk kombinatsiooni omandiõiguse kaitsest, seadusandliku korra tagamisest ja finantstoetusest.

Artikli teoreetiline raamistik kasvab välja debatist, mis saab alguse Coase (1974) artiklist, kus pannakse peavoolu ökonomika seisukoht kahtluse alla. Peavoolu ökonomika (õpik) kasutab tuletorni näitena puhtast avalikust kaubast ja eeldab, et selliseid kaupu tuleks riiklikult pakkuda, või vähemasti nende tootmismahtu riiklikult reguleerida ja „tellida“ need kaubad riigieelarve tulude arvel. Coase (1974) näitab Briti tuletornisüsteemi ajaloolise kirjelduse abil, et tegelikult on tuletorne aastasadade jooksul ehitatud ja käigus hoitud erainitsiatiivil. Siit jõuamegi teoreetilise-empüürilise konfliktini. Arutelu olemasoleva kirjanduse üle nõuaks kõigepealt avaliku kauba selget definitsiooni. Kombineerides erinevaid olemasolevaid lähenemisi (näiteks Head 1974; Samuelson 1954; Buchanan 1975) jõuame optimaalse definitsioonini: (a) avalike kaupade tarbimine on mitterivaalitsev (ühe tarbimine ei vähenda teiste võimalusi tarbida); ja (b) välistamise võimatus (kui kaup on kättesaadav ühele, on ta koheselt kättesaadav ka teistele). Siit koorub ka põhiline probleem: nn „tasuta sõitmine“ ehk tarbijatel puudub ajend selliste kaupade eest maksta. Lisaks toob „tasuta sõitmine“ kaasa nn informatsiooni varjamise probleemi – tarbijal ei teki ajendit oma eelistusi avalike kaupade osas välja näidata, lootes, et seda teeb (ja ka kaupade eest tasub) keegi teine. Seega jääb teoreetiliselt turumehhanismi abil pakutavate avalike kaupade hulk väiksemaks, kui see oleks sotsiaalselt efektiivne (kui selliseid kaupu üldse pakutakse).

Artikli metoodikast: kasutatud on mittekonventsionaalset lähenemist majandusteoorias – analüütilist narratiivi. Selle mõiste toovad metoodilisse debatti Bates, Greif, Levi, Rosenthal ja Weingast (1998) oma samanimelises raamatus. Meetod on loodud ühendamiseks neid sotsiaalteadlasi, kes kasutavad kvalitatiivseid empiirilisi andmeid, kuid neid kasutatakse leidmaks üldisemaid seaduspärasusi läbi mänguteooria mudelite. Põhiliselt kasutatakse analüütilise vahendina laiendatud vorm mängu. Meetodi raskuspunkte on kaks: (a) allikate ekspertiisil põhineva loo (narratiivi) koostamine; (b) mudeli loomine, mis kajastaks tekkinud mängusituatsiooni. Meie artiklis on narratiivi aluseks peamiselt arhiivimaterjalid, kuid ka teised allikad (mälestused, intervjuud, nopped kirjandusest). Artikli analüütiline osa defineerib kõigepealt probleemi läbi mänguteooria vahendite – normaalvorm mängu – ja näitab, et probleem ei ole lahendatav (erainitsiatiivil pakkumist ei saa

olla) ilma mängu struktuuri muutmata. Mängu struktuuri on võimeline muutma vaid mingi „ülimuslik“ võim või institutsioon, meie juhtumi korral nimetame seda kokkuleppeliselt „riigiks“.

Narratiivist: kui Coase näitas, et Briti ajaloo on märkimisväärne arv juhtumeid, kus „tuletorninduses“ on domineerinud erainitsiatiiv, siis meie näide on veidi erinev. Võib ka väita, et tõlgendame erinevalt seda, mida me ajalooist teada saame, ehk küsimus ei ole tihti vaid omandisuhtes, vaid ka laiemas institutsionaalses raamistikus. Meid huvitab: (a) kelle initsiatiivil hakati tuletorni/e ehitama; (b) kes (era/avalik) ehitas; (c) kelle omandusse jäi tuletorn; (d) kes maksis teenuse eest; (e) kes määras hinna ja kuidas maksmist administreeriti. Nendele küsimustele erinevaid vastuseid saades jaotasime ajaloolise narratiivi neljaks osaks: 1) Süsteemi rajamine; 2) Eraomandus Vene impeeriumi ajal; 3) Natsionaliseerimine 19. sajandil; ja 4) Riigiomandus Eesti Vabariigi ajal.

Süsteemi rajamine sai oletatavasti alguse 16. sajandi esimesel poolel. Tulemärgid ei olnud küll päris tuletornid, ka võib eeldada, et omandi mõttes oli seal nii ühte kui teist (eraomanikke, munitsipaalomandust, seltsiomandust). Kõpu tuletorni hakati ehitama 1531. a. Tallinna Rae ja Hansa initsiatiivil. Torn ehitamine jäi majanduslanguse (Hansa venesuunalise kaubanduse lõppemise) tõttu pooleli, torni omanikuks jäi ehituse organiseerinud mõisnik. Hilisemal ajal sai ehitamise initsiaatoriks Rootsi riik, kelle kaubandus (ja ka sõjalised) huvid põrkusid Madalmaade huvidega. 1646. a. ehitati Sõrve ja Ruhnu puittornid. Ehitasid kohalikud mõisnikud, kes said selleks raha tellijalt. Riik finantseeris ehitust omakorda tuletornimaksudest, mida koguti kohalikest sadamatest. Kaubalaevad, mis randusid Riias, Pärnus või Kuresaares, maksustati kindlasummalise maksuga. Uus majanduskasvu periood oli 17. sajandi lõpus. Siiski võib allikatest leida, et 1750. a. oli Eesti territooriumil vaid kuus tuletorni: Kõpu, Keri, Suurupi, Pakri, Sõrve ja Ruhnu. Arvatavasti olid need kõik eraomanduses.

Teine periood – eraomandus Vene Impeeriumi ajal – algas 18. sajandil. Kõik meremärgid sh. tuletornid läksid formaalselt tsaaririigi Admiraliteedi alluvusse. Samas läksid Uusikaupungi rahulepingu kohaselt ka Kõpu, Ruhnu, Kolka (tuntud ka kui Domesnäsi) ja Vaindloo (tuntud ka kui Stenskäri või Seiskari) riigi käsutusse. Tegelikuses jäid omandisuhted muutmata (v. a. Vaindloo puhul) ja omanikeks jäid endised rootsi-balti parunid. Ilmselt jäi see nii, kuna Vene Tsaaririik otsis kohaliku aadelkonna toetust, säilitades nende rootsiaegsed privileegid. Kuni 18. sajandini säilis nn balti erikord endisel kujul. Endiste privileegide kohaselt läks pool riigi poolt kaubalaevadelt kogutud tuletornimaksudest omanikele. Ilmselt korjati tuletornimaksu tollimaksude ühe osana Pärnu, Kuressaare, Tallinna, Haapsalu ja Toolse sadamates. Tuletornide käigushoidmine jäi endiselt eraomanike hooleks. Ilmselt maksti neile eraldi ka hooldustasusid ja remonditasusid (vähemasti Kõpu tuletorni puhul). 18. sajandi teisel poolel ehitati erainitsiatiivil vaid üks tuletorn (Osmussaare). Oluliselt muutus olukord 19. sajandil.

19. sajandi natsionaliseerimise periood saab alguse muutustega balti-erikorras, mida initsieerib Katariina II. Võib oletada, et erakasumi vastane meeleolu võttis maad ka

laiemalt, näiteks kattub natsionaliseerimine ajalisel Inglismaal toimuvaga (Taylor 2001: 750). Olulised on ka bürookraatlikud muutused. Tuletornide Järelevalveameti etteotsa määratakse Leonti Spafarjev, kes jääb sellele positsioonile 35 aastaks. Spafarjev moodustab kaks jaoskonda: Kroonlinna alluvusse lähevad Kotlini, Vaindloo, Suursaare tuletornid ja Revali alluvusse Keri, Suurupi, Pakri ja Sõrve. Võib eeldada, et ülejäänud tuletornid (näiteks Kõpu, Ruhnu, Osmussaare jne) on eraomanduses. Spafarjev kurdab, et eraomanduses olevad tuletornide tehnoloogia on vananenud ja nad takistavad ohutut meresõitu (Spafarjev 1820: 9). 1805. a. otsustabki Admiraliteet, et tuleb ehitada rida uusi tuletorne, rekonstrueerida olemasolevaid ja ühtlasi ka natsionaliseerida Kõpu tuletorn (Luige 1967: 28). Spafarjevi plaan viiakse peaaegu muutusteta ellu. Ehitatakse 13 uut tuletorni ja Mey (1936: 86) väidab, et enamused tuletorne Eesti territooriumil on riigistatud. Samas ei ole see eraomandi lõpp. Eraomandisse jäävad kaks Kolka tuletorni ja ka Kõpu. Lisaks Kõpule kuulub krahv Unger-Sternberg'ile tuletorne ka Paralepas ja Hobulaiul. Arhiiviallikate põhjal võib väita, et eraomandusse jäi ka Postrova tuletorn Peipsi rannikul. Kokku on 19. sajandi lõpuks Eesti territooriumil ligemale poolsada tuletorni või tulemärki. Samal ajal toimub tuletorniehituses tehnoloogiline muutus – kasutusele võetakse raudbetoon. Sajandi lõpul ehitatakse riigi poolt uue tehnoloogia järgi mitmeid tuletorne (tuntumad on Kihnu, Vormsi ja Tahkuna). Samal perioodil ehitatakse erainitsiatiivil ja finantseerimisel vähemasti kaks tuletorni – Harilaiule ja Käsma. Põnev on see, et viimane kuulub kohalikele kogukonnale ja ehitamist rahastatakse purjutanud kaptenitele tehtud trahvidest.

Viimane periood Eesti Vabariigi ajal lõpetab eraomanduse. Tuletornindus liigub Transpordiministeeriumi alluvusse. Koos mõisamaadega riigistatakse ka Balti aadelkonnale kuulunud tuletornid. Palgalehtede järgi võib öelda, et Tuletornide osakonnale kuulub algselt 34 tuletorni. Osakond tellib nende hooldamise ja parandamise erafirmadelt, tuletornivahid on aga riigiteenistujad. Alates 1934. a. luuakse Veeteedeameti alluvusse eraldi brigaad, mis asub tuletorne hooldama ja ehitama. Eesti Vabariigi viimase kaheksa aasta jooksul ehitab see brigaad 25 raudbetoonist tuletorni (Luige 1982: 72). Veeteedeameti tulud saadakse endiselt tuletornimaksudest. 1924. aasta Riigiteatajas on toodud diferentseeritud maksumäärad välis- ja kodumaistele alustele. Maksumäärasid diferentseeritakse ka purje-, auru ja mootorlaevade löikes, ning maksu suurus määratakse tonnaaži alusel. Tuletornimaksu tuli maksta vaid esimeses sadamas Eesti vetesse sisenedes ja see ei sõltunud edasistest sadamakülastustest. Kuigi tuletornid on riigistatud, leidub sellel perioodil erasadamaid: Kunda, Tallinn-Beckeri, Tallinna Balti laevaehituse ja Kärdla. Ka nendes olevate meremärkide hoolduskulud tasub riik. Samas töötavad nendes sadamates eralootsid. 1930. aastatel tõstatud poliitiline huvi viia tuletornid Kaitseminsteeriumi alluvusse ja asendada tuletornivahid sõduritega, jääb Riigikogu toetuseta. 15. mail 1940. a. saadetud telegrammis annab Nõukogude Liidu Sõjakomandatuur teada, et vastavalt „lepingule“ võetakse üle Pakri, Osmussaare, Tahkuna, Ristna, Kõpu ja Sõrve tuletornid. Paari kuu pärast saadetud uues telegrammis antakse teada, et võetakse üle ka Suurupi kaks tuletorni, Naisaare, Keri ja Juminda. Ülevõtmiste nimekirjast selgub, et Nõukogude Liidu kätte läksid ka Hiiesaare, Kübarsaare, Viimsi, Roomassaare ja Papisaare tuletorn. Veeteedeamet likvideeriti 1. jaanuaril 1941. a., kõik tuletornid (kaasa arvatud juba varem mainitud)

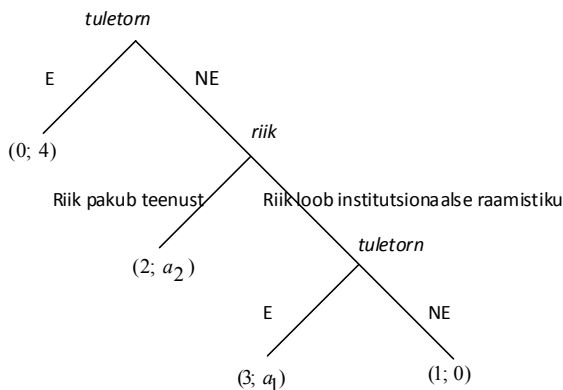
läksid loodud Merelaevanduse alluvusse. Luige (1967: 35) väidab, et selleks ajaks oli Eesti territooriumil 140 erinevat meremärki: 117 tuletorni, 20 valguspoid ja 3 tuletäeva.

Mudeli koostamisel tuleb kõigepealt probleem identifitseerida. Tuletornimäng on toodud joonisel 1. Kahel mängijal: *laeval* ja *tuletornil* on kaks valikut. Tuletorn saab pakkuda kvaliteetset teenust või mitte; *laev* saab maksta tuletornile või mitte. Vastavalt on  $b_1$  *tuletorni* tulu ja  $c(t)$  kvaliteetse toote pakkumise kulu, kus  $t$  on tehnoloogia näitajaks (mida spetsiifilisem tehnoloogia, seda kulukam on kvaliteeti pakkuda).  $C$  on valetulede (mittekvaliteetse teenuse) pakkumise püsikulu ning  $b_2$  kvaliteetsest teenusest saadav tulu *laevale*. Selles mängus on vaid üks Nashi tasakaaluline tulemusprofiil  $(-C, 0)$ , ehk *tuletorn* ei paku usaldusväärset teenust ja *laev* ei maksa. Mõlemad osapooled on lõksus (muidugi võib öelda, et valetulede omanikul ongi eesmärgiks laeva röövimine, see aga ei lahenda meie avalike kaupade pakkumise probleemi). Nagu ikka vangide dilemma tüüpi mängudes ei saa lahenduseks pakkuda informatsiooni sissetoomist mängu (näiteks *laev* esimesel etapil jälgib teenuse kvaliteeti ja maksab hiljem), sest see ei muuda *laeva* optimeerivat käitumist. Tüüplahenduseks tuuakse sellisel juhul strateegilisi lahendusi, mis eeldavad korduvat äritehingut ja nn reputatsioonihitamist. Antud juhul on seda raske rakendada, kuna näost-näku äritehingut ei toimu.

		<i>Laev</i>	
		Maksta	Mitte maksta
<i>Tuletorn</i>	Usaldusväärne	$b_1 - c(t); b_2 - b_1$	$-c(t); b_2$
	Mitte usaldusväärne	$b_1 - C; -b_1$	$-C; 0$

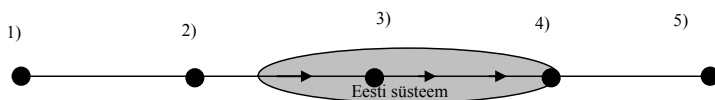
### Joonis 1. Tuletornimäng.

Kuna mängu struktuuri saab muuta vaid piisava mõjuvõimuga „mängija“, siis meie poolt palutud lahenduses nimetame, seda *riigiks*. Riigi sissetoomine mängu muudab mängu struktuuri järgmiselt – esimesel etapil valib *tuletorn* kas efektiivse (E) või mitteefektiivse teenuse koguse/kvaliteedi (NE); teisel etapil järgib *riik tuletorni* valikuid ja otsustab juhul kui teenuse kogus või kvaliteet ei ole piisav, kas pakkuda ise või aidata kaasa institutsionaalse raamistiku loomisega. Viimases, ehk kolmandas etapis, saab jällegi *tuletorn* vastavalt riigi institutsionaalse raamistiku loomisele valida E või NE. Selles laiendatud vorm mängus (joonis 2) sõltub allmängu täiuslik Nashi tasakaal seosest  $a_1$  ja  $a_2$  vahel. Kui  $a_1 > a_2$ , tuleb *riik* erapakkujale nn appi ja mäng lõppeb tulemusprofiiliga  $(3; a_1)$ .



**Joonis 2.** Riik ja laiendatud tuletornimäng.

Narratiivi juurde tagasi tulles näeme, et ajalooliselt ongi *riik* sarnaselt mänguga Joonisel 2 talitanud. Kokkuvõtlikult võib erinevate ajalooetappide kohta öelda, et tuletornide teenuseid ei pakkunud avalik või erasektor kunagi puhtalt. Joonisel 3 on Van Zandt'i (1991) „poolused“: 1) erapakkumine ilma igasuguse riikliku sekkumiseta; 2) erapakkumine koos riigipoolse omandi- ja lepinguõiguse jõustamisega; 3) erapakkumine koos valitsusepoolse tuletornimaksude kogumise administreerimisega; 4) riigipoolne pakkumine koos laevade tasutud tuletornimaksudega ja 5) riigipoolne pakkumine koos riikliku finantseerimisega.



**Joonis 3.** Eesti süsteem ja Van Zandt'i poolused.

Ajalooliselt on Eesti „tuletornindus“ nihkunud enama riikliku sekkumise suunas. Kindel on see, et riik on igal perioodil pakkunud eraturgudele enam kui lihtsalt omandiõiguse kaitset – on määranud tuletornimaksu ja selle kogumist administreeritud. Miks on aga sellest „minimaalsest“ institutsionaalsest raamistikust kaugemale mindud? Mudel ja ajalooline narratiiv näitavad, et põhjusi on kaks: tehnoloogia muutus ja avalik huvi. Tehnoloogia areng tõi kaasa spetsiifilise oskuse ja teabe vajaduse, mis võis muuta avaliku spetsialiseerunud brigaadi kasutamise tuletorni ehitamisel suhteliselt odavamaks. Avalik huvi (olgu see siis Vene Tsaaririigi sõjaline ambitsioon või Hansa ja Eesti Riigi kaubandushuvid) nõudis, et tuletornide pakkumise mehhanism võimaldaks enam tuletorne kui „miinimummehhanismiga“ toetatud eraturud oleksid pakkunud.



Lõpetuseks võib öelda, et debatt selle üle, kas avalikke kaupu peaks pakkuma riik või eraturg, ei ole valik musta ja valge vahel. Peame arvestama, et avalike kaupade puhul on selge see, et vaid „minimaalriigi“ (Nozick 1974) abiga eraturud sellistes valdkondades hakkama ei saa. Lisaks on vaja ka mingit „abipaketti“. Tuletornide puhul olid miinimumpaketis sees riigipoolne abi tuletornimaksude määramisel, nende kogumisel ja maksude administreerimisel. Kui aga avalik huvi nõuab enamat kui miinimum, siis peab ka pakett kasvama. Tuletame meelde, et sarnaseid avalikke kaupu ei olegi nii vähe: haridus, linnaruum, mitmed loodusvarad ja palju muud.

## MAKSUD, RIIGI EELARVE JA MAJANDUSKRIIS

Olev Raju  
Tartu Ülikool

### Probleemi püstitus

Juba 2 aastat kestev majanduskriis SKP langemisega üle 20% ja riigieelarve mahu olulise vähenemisega on püstitanud küsimuse Eesti riigieelarve ja maksusüsteemi jätkusuutlikkusest. Nagu on näidanud viimase kahe aasta maksulaekumised, ei ole kehtiv maksusüsteem vaatamata maksude tõstmisele suutnud tagada eelarve tulude stabiilsust. Kerkib küsimus, milline on olnud eelarve mahu tugevas vähenemises objektiivse majanduskriisi osa ja milline Eesti maksusüsteemi spetsiifika, seda nii maksukoormuse, maksude struktuuri, makskorralduse jne kui ka valitsuse majanduspoliitika, eelkõige eelarve kulude kärpete, näol. Käesoleva kirjutise raames püütakse sellest suurest küsimuste kompleksist vaadelda kaht probleemi. Esiteks vaadelda kaudsete maksude dominantide eelarve tuludes ja teiseks, näidata eelarve pideva kärpimise negatiivset mõju maksude edasisele laekumisele. Esimesele küsimusele vastuse andmiseks on vajalik ka anda seos nn. Ramsey maksude ja Eesti eelarve tulude struktuuri vahel.

Eelarve tulude vähenemine on teravalt tõstatanud küsimuse võimalikust maksukoormuse suurendamisest Eestis. Kuna Eesti maksusüsteem baseerub kaudsete maksude dominandil, püüame alljärgnevalt konstrueerida mudeli kaudsete maksude optimumi leidmiseks. Mudeli konstrueerimisel lähtume välismõjude puudumisest, isokvandi ja samakasulikkuse kõvera klassikalisest kujust ning Pareto-optimumi saabumisest punktis, kus valitsusele laekuva tulu kasv ja ostjõu ümberjaotuse kõver kohtub pašuulmaksude omaga. Seega me sisuliselt otsime varianti, mille puhul valitsuse sissetulekute laekumise kasv ja sellest tulenev sotsiaalne heaolu ei oleks väiksemad majapidamiste kaotusest. Teiste sõnadega, kui võrrandi (1) vasak pool ületab parema, siis on ühiskonna kogu sotsiaalne heaolu kasvanud.

Asjale valemi kuju andes võib väita, et me püüame valida maksuvektori  $t$  nii, et maksimeerida sotsiaalset heaolu  $V(q)$  tähistades subjektide kogutulu kaudsetest maksudest  $R(t)$ , saame

$$R(t) = t \cdot X(q) \geq \bar{R}, \quad (1)$$

kus  $X(q)$  on kogunõudluse vektor ja  $\bar{R}$  on vajalik maksutulu. Kui nüüd lugeda, et pärast maksude kehtestamist kogust  $q$  pakutakse hinnaga  $t$ , tarbija aga maksab tema eest hinna  $(p+t)$  siis tähistades kogusele  $q$  vastava majapidamise heaolu on  $v(q)$  ning majapidamise nõudluse  $x(q)$  saamegi valemi (1). Rõhutame veelkord, et  $V(q)$  on sotsiaalse heaolu kasv maksude kasvust.

Püstitatud ülesanne laheneb lihtsalt kui kasutada Ramsey reeglit optimaalsete maksude kohta ja majandusteaduses levinud Lagrange maksimumi leidmise võtet. Seega me maksimeerime  $V + \lambda R$  kus  $\lambda$  on Lagrange kordaja, mis antud juhul

tähistab mitte mõne konkreetse erasektori poolt pakutava kauba, vaid valitsuse tulude kasvust tuleneva sotsiaalse heaolu piirkasulikkust.

Seega võime kirjutada

$$\frac{\partial V}{\partial t_i} + \lambda \frac{\partial R}{\partial t_i} = 0. \quad (2)$$

Kui nüüd asendada

$$\partial V / \partial t_i = - \sum_h \beta^h x_i^h \quad \text{and} \quad \partial R / \partial t_i = X_i + t \cdot \partial X / \partial t_i,$$

ning kasutada Slutsky kompenseeritud nõudluskõverat ja leida tuletis, saame:

$$\frac{\sum_k t_k \sum_h s_{ik}^h}{X_i} = -\sigma_i$$

$$\sigma_i = 1 - \sum_h \frac{x_i^h}{X_i} \frac{b^h}{\bar{b}}, \quad (3,4)$$

Kus  $S_{ik}^h$  on Slutsky kompenseeritud nõudluskõvera tuletis majapidamisele  $h$  (on säilitatud maksude tõstmise eelne kasulikkusetase) ja  $\sigma_i$  on negatiivne, kuna majapidamise netotulude sotsiaalse piirkasulikkuse  $b^h$  (kus „neto” tähendab kohanemist sotsiaalse piirkasulikkusega  $\beta^h$  marginaalse kalduvuse tõttu tasuda maksud lisasissetulekutest; ning  $b$  on keskmine  $b^h$ ) ja hüvise  $i$  tarbimise vahel majapidamise  $h$  poolt ( $x_i^h$ ) valitseb kovariantsus. Niisiis,  $\sigma_i$  on seda kõrgem, mida rohkem hüvist tarbivad need, kelle sissetuleku sotsiaalne piirkasulikkus on madal. Teiste sõnadega, vaesema elanikkonnakihi suuremal maksustamisel on kaudsete maksude laekumise stabiilsus suurem. Nagu näitavad allpool (vt. tabel 2) toodud arvud, pole eesti tingimustes võimalik, et võrrandi vasak pool oleks suurem paremast, s.t. Eestis kehtiva maksüsteemi korral ei saa maksude tõus viia sotsiaalse heaolu kasvule.

Kuna eeltoodud valemid (1) ja (2) võtavad arvesse maksude ja sotsiaalse heaolu vastandliku seose kõige olulisemaid aspekte, on kaudsete maksude efektiivsuse sotsiaalne aspekt sellega küllaltki hästi kirjeldatav. Kuid nii siintoodud kui ka spetsialistide poolt varem pakutud valemid (Ahmed, Stern 1989) on praktikas kasutatavad vaid eeldusel, et meil õnnestub matemaatiliselt kirjeldada majapidamiste sotsiaalse heaolu funktsioon; millest siis on võimalik leida tuletis. Praktikas üldreeglina osutub see majapidamiste heaolu funktsiooni matemaatilise kirjeldamise ülesande piisava täpsusega lahendamine tihti keeruliseks, s.t. kerkivad needsamad raskused mis Hicksi võtte kasutamisel asendus- ja sissetulekuefekti lahutamisel. Eesti majanduspoliitikas on aga saanud tavaks nende küsimuste lahus vaatlemine;

elarvet aga vaadeldakse eelkõige läbi tema võimaliku mõju ettevõtlusele ja alles teises järjekorras tema sotsiaalse suunitluse prismast lähtudes.

## **Eesti maksusüsteemi struktuur**

Eesti oli oma siirdeperioodi algstaadiumis (nagu ka enamik teisi Ida-Euroopa maid) unikaalses situatsioonis – selline ülimalt oluline majanduspoliitiline instrument kui maksusüsteem sisuliselt puudus ja seda tuli üles ehitama hakata. Ideaalis oleks see tähendanud kaasaja majandusteooria seisukohtadest lähtuva süsteemi üles ehitamist. Kahjuks puudusid sel perioodil (1993-1994) Ida-Euroopa maades vastavad teadmised ja seda nii maksustamise teooria kui ka majandusliku situatsiooni (arengufaasi ja protsesside täpsema määratlemise) kohta.

Eesti maksusüsteemi iseloomulikeks joonteks on olnud suhteliselt madal maksukoormus, lausa primitiivismini ulatuv lihtsus (mis on vähendanud maksude kui automaatse stabilisaatori rolli), kaudsete ja tarbimismaksude suur osakaal. Eesti maksukoormus on alates Eesti astumisest EL olnud vahemikus 33,7-36,3% (<http://www.fin.ee>), mis on madalam EL keskmisest (41-42%). Kuid need arvud pole võrreldavad. Eesti elarvesse kantakse sotsiaalmaks, mis on juba aastaid olnud Eesti riigielarve suurim sissetulekuallikas (vt. tabel 1). Enamikes EL liikmesriikides selline maks üldse puudub või on ta väike. Kui teha andmed võrreldavaks, jääks Eesti maksukoormus kuhugi 26-27% piirimaile.

Majanduskriisi tingimustes on aktualiseerunud maksude struktuuri küsimus. Tabelis 1 on toodud Eesti riigielarvesse laekunud maksud alates 2005 aastast, s. o. Eesti EL astumise järgselt. On selge, et kaudsete maksude alla lähevad neist VAT, aktsiisid ja tollimaks. Kuid kaudsete maksude tunnuseid on ka hasartmängumaksul, kuna sellega ei maksustata majandustegevuse tulemit, vaid see kehtestatakse paušal-maksuna ennetavalt, s.o. enne mänguautomaadi jne käiku andmist. Selle summa kannab hasartmängude korraldaja mingil viisil (näiteks pakutatavate jookide hinna tõstmine jms) üle tema tegelikule kandjale – mängijale, s.o. tarbijale.

Sellisel kujul, kui on Eestis kehtestatud sotsiaalmaks, teda meile teadaolevatel andmetel kuskil mujal ei eksisteeri. Maksu tasub töandja; kuid selle välja arvutamise aluseks on töövõtjale makstav summa. Maks on sihtotstarbeline täites suures osas pensioni- ja tervisekindlustuse funktsioone. Kuna pole selge, kas sellisel kujul on sotsiaalmaks otsene või kaudne maks, siis liigitavad autorid teda meelevaldselt. Eurostat liigitab Eesti selle maksu tööjõumaksude (labor tax) hulka, lugedes teda seega ressursimaksuks. (Eurostat. Taxation), kuid ka see pole päris täpne, kuna sotsiaalmaksu laekumised on ette ära suunatud kindlateks sotsiaalkuludeks.

Ilmselt on mõttekas välja tuua kaudsete maksude osakaal mitmes eri variandis, eelkõige koos sotsiaalmaksuga ja ilma selleta. Esimesel juhul on kaudsete maksude osakaal pärast Eesti astumist EL kõikunud vahemikus 75,3-87,8% riigielarve tuludest, teisel juhul vahemikus 41,1-53,6%. Esimese meetodika järgi on tegu

selgelt suurima kaudsete maksude osakaaluga EL liikmesmaade hulgas; ka teise meetodikaga saadud tulemuse põhjal ületab selgelt EL keskmist.

**Tabel 1.** Maksude laekumine Eesti riigieelarvesse 2005-2010 (milj. kroonides)

	2005	2006	2007	2008	2009	2010 kava
Maksud kokku	53831	55208	67718	70396	63780	61767
Füüsilise isiku tulumaks	4789	3846	4786	4328	2419	3220
Juriidilise isiku tulumaks	2365	3123	4083	4166	4010	2425
VAT	14021	18645	22304	20548	18809	19030
Aktsiisid	6424	7030	8195	8971	9818	9511
tubakaaktsiis	1205	1208	1529	2519	2088	1830
alkoholiaktsiis	1838	2089	2314	2434	2590	2330
kütuseaktsiis	3363	3728	4353	4697	4876	4870
pakendiaktsiis	...	3	...	1	1	1
Hasartmängumaks	292	354	467	484	278	215
Tollimaks	347	401	549	508	307	345
Sotsiaalmaks	18392	21764	27268	31299	28084	26970
Ülejäänud maksud	1079	45	66	92	55	51

Allikas: Autori arvutused Rahandusministeeriumi kodulehekülje alusel.

Tarbimismaksude osakaalu leidmisel kerkib jälle küsimus sotsiaalmaksust.. Kuigi allakirjutanu ei jaga seisukohta, et sotsiaalmaks sellisel kujul nagu ta on kehtestatud Eestis, on tarbimismaks, on otstarbekas pakkuda ka tarbimismaksud 2 variandiskoos sotsiaalmaksuga ja ei. Kindlasti kuuluvad tarbimismaksude hulka VAT ja aktsiisid. Ka tollimaks alkoholiilt, mööbliilt, lihalt jne on pigem tarbimismaks. Ilmselt on õige tarbimismaksude hulka liigitada Eestis kehtestatud kujul ka hasartmängumaks. Sellise käsitluse juures kerkib huvitav paradoks- kaudsed maksud ja tarbimismaksud langevad kokku. Mitte soovides diskuteerida sellise käsitluse põhjendatuse üle, konstateerime, et mistahes lähenemise korral tarbimismaksudele on nende osakaal riigieelarve tuludes suur.

Arvud näitavad ka sotsiaalmaksu kasvavat dominantni Eesti riigieelarve laekumistes 34,2%lt 2004a. 44,4%ni 2008a. 2008 aastal alanud majanduskriisi aga külmutas seoses tööpuuduse suure kasvuga 2009a. palgana välja makstavad summad, mis viis sotsiaalmaksu laekumiste vähenemiseni. Majapidamiste tulude vähenemine viis majapidamiste suure laenukoormuse olukorras aga ka käibemaksu ja aktsiiside laekumise vähenemisele. See viis Eesti 2009 aasta riigieelarve suure löögi alla ja kärpis oluliselt ka 2010 aasta eelarve mahtu. Ilmselt on tarbimismaksudele rajatud

eelarve tuludel suur elastsus perioodidel, kus sissetulekud ja tarbimine suurenevad kiiresti, aga sellisel süsteemil on nõrk ujuvus (vt tabel 2).

**Tabel 2.** Maksulaekumiste, palga ja SKP dünaamika 2007-2009 (protsentides võrreldes eelmise aasta sama kvartaliga)

Periood	2007				2008				2009		
	I	II	III	IV	I	II	III	IV	I	II	III
SKP	9,8	7,6	6,4	4,5	0,4	-1,4	-3,3	-9,9	-15,1	-16,5	-15,6
Maksulaekumised	27,6	28,4	18,6	18,2	10,2	5,7	7,1	-2,8	-10,1	-12,1	-13,6
Keskmine palk	20,1	21,2	12,9	20,2	19,5	15,2	14,8	6,9	-1,5	-4,4	-5,9

Allikas: Rahandusministeeriumi kodulehekül.

Vaatamata maksude tõstmisele kahel viimasel aastal on päevakorrale on kerkinud küsimus maksukoormuse edasise suurendamise vajalikkusest Eestis. See aga aktualiseerib oluliselt küsimust optimaalsest maksude tasemest.

Vaatleme alljärgnevalt Eestis vastu võetud kolme negatiivse lisaelarve mõju eelarve järgnevatel perioodidel laekumistele. Eestis võeti vastu esimene negatiivne lisaelarve 2008 aastal mahus tulude vähenemine 6,1 miljardit krooni ja kulude vähenemine 3,2 miljardit krooni, teise 2009 aastal mahus tulude vähenemine 9,6 miljardit krooni ja tulude vähenemine 6,6 miljardit krooni ja kolmanda (2009 aasta jaoks teise!) mahus tulude vähenemine 3,9 miljardit krooni ja kulude vähenemine 2,6 miljardit krooni. (<http://www.minfin>).

Selleks, et analüüsida, palju selline kärbe vähendab tulevaste perioodide laekumist, tuleb need kulud jagada mitmeks. Maksete vähendamine EL eelarvesse või siis relvastuse ost välismaalt mõjutavad Eesti riigieelarve tulude edasise laekumise praktiliselt mittetunnetatavalt; samal ajal kui kõige vaesematele makstud lisarahade kärpimine, mis oleks kulutatud kiiresti esmatarbekaupade ostuks, oleks andnud eelarvesse käibemaksu, aktsiiside jne näol kiiret tagasilaekumist. Analüüsiks jagasin eelarve kulude kärped algselt neljaks.

Esiteks. Oi lähedase otsese tagasilaekumisega summad (maksed EL eelarvesse, relvade jne ostud välismaalt jms).

Teiseks. Investeeringud jms, mis annavad riigieelarvesse küll tagasilaekumise, kuid kaudselt. Investeeringud, need on millegi ostud, aga ka töötasud nende ostude töökorda saamiseks, mis ehituse palgade korral on mainimisväärsed, kuid seadmete montaažikulude korral märksa väiksema osakaaluga. Siit tulevad tagasilaekumised käibemaksuna (osalt ka aktsiiside ja tollimaksudena) ostudelt, sotsiaalmaksuna palkadelt ning käibemaksu ja aktsiisidena väljamakstud töötasude kasutamisel.

Kolmandaks tulusiirded. Need on väga eriilmelised. Põhiliselt lähevad need omavalitsustele, kus neid kasutatakse mitmesugusteks väga eriilmelisteks välja-

makseteks. Nende hulgas domineerivad tegelikult järgmise, 4 grupi, maksed; kuid väike pole ka investeeringute osa.

Neljandaks. Otsesed väljamaksed majapidamistele. Siin domineerivad need maksed, millest saadud raha inimesed kulutavad dominantelt sisetarbimises (pensionid jms). Siit tulevad tagasilaekumised sotsiaalmaksudena (selle maksuga maksustatavalt osalt väljamaksetest), eelkõige aga käibemaksu ja aktsiisidena väljamakstud raha kulutamisel

Sellise arvutuse läbiviimisel on kaks raskust, mis mõlemad on küll ületatavad, kuid annavad lõpptulemuseks arvestatava veaklassi. Esiteks kulude jaotamine nende 4 klassi vahel. Eriti keeruline on see nende kulukirjete korral, millised kannavad nimesid tegevuskulud, ülekantavad kulud, tegevustoetused jmt. teiseks jäävad möödapääsmatult ligikaudseteks iga grupi tagasilaekumise koefitsiendid. Kuid nagu näitab allpool saadud tulemus, on tendentsid nii ilmselged, et ka maksimaalselt võimalik viga ei saa anda vastupidist tulemust. Pealegi on tagasilaekumise koefitsiendid mudeli kalibreerimisel pigem ala- kui ülehinnatud.

Analüüsiks vajalikud andmed on koondatud tabelisse 3.

**Tabel 3.** Eesti riigieelarve lisaeelarve kulude vähendamine 2008-2009 (miljonites)

Kulu suunitlus	2008	2009 I	2009II
I grupp (tagasilaekumise koefitsient 0)	492,6	993,9	187,4
II grupp (tagasilaekumise koefitsient 0,4)	832,5	980,2	321,9
III grupp (tagasilaekumise koefitsient 0,5 )	497,8	1643,0	628,1
IV grupp (tagasilaekumise koefitsient 0,3 )	1387,4	2957,7	1658,1
Kokku	3210,3	6575,8	2563,5

Allikas: Autori arvutused. RT I 03.07.2008, 29, 188; RT I 28.02.2009, 15, 93; RT I 26. 06. 2009, 35, 233.

Lihne aritmeetika näitab järgmist. II grupist laekuks 2008 aastal tagasi 333 miljonit krooni, III grupist 249 miljonit krooni, ja IV grupist 416 miljonit krooni, seega kokku 998 miljonit krooni. Arvestades raha liikumise keskmist kiirust oleks võimalik seda raha samal aastal välja maksta 2,2 korda. Kui lugeda, et see makstakse välja samas proportsioonis kui seda on negatiivne lisaeelarve, s.t tagastataks seda neile kuludele, võime lugeda, et kärped tekitasid uute laekumiste vähendamisega 2008 aastal täiendava „augu“ eesti riigieelarvesse 2195 miljonit krooni. Analoogiline arvutus 2009 aasta suhtes näitab, et I negatiivse lisaeelarve raha oleks tagasi laekunud 3,9 korda ja II negatiivse lisaeelarve raha 2,3 korda, seega vähenesid laekumised 2009 aastal tänu negatiivsele I lisaeelarvele  $(392+822+887) \times 3,9 = 8429$  miljonit krooni ja tänu teisele negatiivsele lisaeelarvele  $(129+314+497) \times 2,3 = 2163$  miljonit krooni. Kokku kärbiti võimalikke uusi

laekumisi negatiivsete lisaeelarvete tulemusel Eestis 2009 aastal seega vähemalt 10,5 miljardi krooni võrra! Selle summa ulatuses jäid järelikult tegemata ka avaliku sektori kulutused.

### **Järeldused.**

Eeltoodud käsitlusest saab teha järgmised olulisemad järeldused.

1. Kaudsete ja tarbimismaksude osakaalu leidmine kogu maksukoormuses on keeruline, kuna maailmas puudub üldtunnustatud meetodika selleks. Mistahes meetodika kasutamisel kaudsete ja otseste maksude määratlemisel jäävad Eesti riigieelarve laekumistes domineerima kaudsed maksud. Eriti suur, ja seejuures kasvav, on riigieelarve tuludes sotsiaalmaksu osakaal.

2. Eesti riigieelarve tulude struktuur erineb oluliselt EL enamiku liikmesriikide omast. Riigieelarve suurim ja kasvava osakaaluga tuluallikas on omapärase ülesehitusega sotsiaalmaks, mis on raskesti liigitatav nii otseste, kaudsete kui tööjõumaksude alla. Väga suure tarbimismaksude osakaalu tõttu on Eesti maksusüsteemi ujuvus nõrk. 2008 aasta esialgsed kokkuvõtte näitavad selgelt, et majandusliku languse perioodidel on Eesti riigieelarve kergesti haavatav.

3. Riigieelarve väga halb täitumine 2008 ja eriti 2009 aasta algul, mis on sundinud valitsust tegema kuni 10% ulatuvaid eelarvekärpeid, on teravalt tõstatanud küsimuse maksukoormuse suurendamisest Eestis. Arvestades Eesti EL keskmisest märksa madalamat maksukoormust on see võimalik. Kuid siin kerkib teravalt küsimus optimaalsest maksukoormusest. Lähtudes Slutski kompenseeritud nõudluskõvera põhimõttest ja Ramsey maksude optimumi teooriast võib kaudsete maksude optimaalse tasemena vaadelda punkti, kus majapidamiste heaolu vähenemise kõver ja ühiskonna sotsiaalse heaolu kasvu kõver maksude tõstmisest lõikuvad.



## VÕIMALUSED JA SUUNAD MAJANDUSKRIISIST VÄLJUMISEKS NING EDASISE STABIILSUSE SAAVUTAMISEKS EESTIS

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Artikli eesmärgiks on püüda kokkuvõtlikult hinnata Eesti rahvamajanduse käesolevat olukorda (aastad 2009-2010) ning osutada nendele võimalustele (sh regionaalse tasakaalustatud arengu ja haldusterritoriaalse reformi vajalikkusele), mis aitaksid majanduskriisist väljuda. Artiklis tugineb autor oma seisukohtade esitamisel nii ametlikele andmetele-materjalidele ja pikaajalistele isiklikele majandusolukorra hinnangutele kui ka aastatepikkusele tööle paljude üliõpilastega erinevate majanduspoliitika ainete seminarides.

2009. aasta kui käesoleva majanduskriisi esimene täisaasta tõi enesega kaasa olulisi muudatusi, kitsendusi, piiranguid, kokkuhoidu, loobumisi ja muid sunnitud tegevusi ning ümberkorraldusi nii riigi, kohalike omavalitsuste, ettevõtete-organisatsioonide ja paljude inimeste ning nende majapidamiste eksisteerimisel. Sageli oli tegemist nõ „pingutustega ellujäämise nimel”. Paljud ettevõtted lõpetasid oma tegevuse või pankrotistusid. Pankroti olid mõnikord isegi ka füüsilised isikud sunnitud välja kuulutama. Piisavalt selged pole olnud ka Eesti Panga seisukohad ning piisavalt ei kasutatud kõiki võimalusi kommertsbankadele tegevustingimuste seadmisel. Majanduskriisile on Eestis täiendava tõuke andnud ka kasutusel olnud üliliberaalne majanduspoliitika.

Olulisemad nähtused-tegevused, mida võiks 2009. aastal majanduskriisi olukorras Eesti majanduses välja tuua, oleksid järgmised (kuigi kaugeltki mitte ainsad):

- riigieelarve kulusid tuli märkimisväärselt kärpida, kuna tulud kujunesid kavandatud väiksemateks;
- oluliselt suurenes tööpuudus, kuna paljud ettevõtted olid sunnitud oma tegevust vähendama või hoopis lõpetama;
- majanduskasv aeglustus, st tegemist oli olulise majanduslangusega tulenevalt nõudluse langusest;
- järsult vähenesid ettevõtete investeeringud ja eksport (polnud ju võimalust toodangut eksportida kui ka teised riigid vaevlesid majanduskriisis)
- ettevõtlike arendamine oli tugevalt pärssitud (kui Eestis võiks hinnata tuluga tegutsevate ettevõtjate osa ca 2% tööjõust, siis arenenud riikides võib seda ca kümme või rohkem kordi kõrgemaks hinnata)
- valmistatav toodang ja pakutavad teenused osutusid kõrgete tööjõukulude tõttu sageli kalliks (oluliseks põhjuseks ka lubamatult madal tööviljakus)
- kohalikud omavalitsused sattusid finantsraskustesse ja seda sageli seetõttu, et nende kohustused ja rahastamine ei olnud vastavuses, st ei olnud nende eelarvega tagatud; kohalikes omavalitsustes hakati hulgaliselt ka korruptsiooni-juhtumeid kahtlustama;
- väga suurt langust näitas kinnisvaraga seotud tegevus (kinnisvaraga seonduvat võib suuresti ka üheks oluliseks majanduskriisi käivitajaks lugeda).

Eesti riigieelarvet kärbiti 2009. aastal kahel korral, st koostati negatiivsed lisaelarved. 2009. aasta riigieelarves kinnitati Riigikogu poolt algselt tulude mahuks 97,8 miljardit EEK ja kulude mahuks (arvestades ka kavandatavat täiendavat kokkuhoidu) 96,7 miljardit EEK. 2009. aasta esimese negatiivse lisaelarve järel oli kavandatud tuludeks 88,2 miljardit EEK (vähenemine -9,6 miljardit EEK) ning kuludeks 91,9 miljardit EEK (vähenemine -4,8 miljardit EEK). 2009. aasta teise negatiivse lisaelarve mahu vähenemine oli tulude osas -3,9 miljardit EEK ning kulude osas -2,6 miljardit EEK. Seega kujunes 2009. aasta riigieelarveks tulude puhul 84,3 miljardit EEK ning kulude puhul 89,3 miljardit EEK. 2010. aasta riigieelarve tuludeks on kavandatud 84,5 miljardit EEK ning kuludeks 89,7 miljardit EEK.

2009. aastal olid Eesti rahvamajanduses suured langused paljude majandusnäitajate osas. Nii alanes SKP 2009. aastal võrreldes 2008. aastaga 14,1%, tööstustoodang vähenes 26,1% ja ehitustööde maht koguni 34,2%. Uusi sõiduaautosid võeti kasutusele 55,6% vähem kui 2008. aastal (koguni 70,9% vähem kui 2007. aastal). Töötuse määr oli 2009. aastal 13,8%. Vähenes turismi roll: välituriste oli 2009. aastal võrreldes 2008. aastaga 6,5% vähem (2007. aastaga võrreldes koguni 51,6% vähem). Eesti elanikke käis välisreisidel 2009. aastal 28,8% vähem kui 2008. aastal. Eestis asuvad ettevõtted investeerisid 2009. aastal materiaalsesse põhivarasse 27,6% vähem kui aasta varem.

Tuginedes analüüsiandmetele ning taustinformatsioonile (töötuse suurenemine, palkade langus, nõudluse vähenemine, eelarve kärpimine) võib järeldada, et:

- vähenes uus loodud väärtus tööstuses ja teistes rahvamajanduse harudes, kuna tellimused ettevõtetele vähenesid;
- ehitustööde mahud vähenesid, kuna nõudlus uute elamispindade (aga samuti büroo- ja muude pindade) järele oli langenud;
- kuna sissetulekud alanesid, siis suurenes surve pangalaenude tagasimaksmisele; samuti vähenesid võimalused ja huvi uute autode ja paljude kestvustarbekaupade ostmiseks ning reisimiseks;
- tarbe- ja toidukaupade müügiimaht langes, kuna osteti vähem ja hoolsama valikuga, samuti osteti rohkem odavamaid kaupa;
- konkurentsipüsimeks alandati osa kaupade ja teenuste hindu; sageli kasutati kaubanduses ja teeninduses odavaid soodusmüügi ning allahindluse kampaaniaid (sh nii toiduainete, tarbekaupade kui ehitusmaterjalide, majutuse, toitlustamise jms puhul);
- ettevõtted ei olnud suutelised vajalikul määral investeerimise tegema, mistõttu kannatas tootearendus ja tootmisalane innovatsioon;
- ettevõtete võimaluste vähenemise tulemusel langesid nii impordi- kui ekspordimahud.

2009-2010. aastal on Eesti majanduse stabiliseerimise eesmärgil rakendatud hulgaliselt erinevaid vahendeid. Toogem siin esile mõned olulisemad (lisaks eespool nimetatud eelarve ja palgakärbetega seotud tegevused):

- 1. juulil 2009 jõustus uus töölepingu seadus, mille põhimõtteks peaks olema turvaline paindlikkus nii töövõtjatele kui tööandjatele (seni on kartused, et tööandjate võimalused on suuremad ja positsioonid paremad kui töövõtjatel);
- 1. juulist 2009 tõsteti käibemaksumäär enamikele kaupadele ja teenustele 18%-lt 20%-le; käibemaksu soodusmäär tõsteti 9%-le (kehtib nüüd raamatutele, töövihikutele, ajalehetele-ajakirjadele, ravimitele ja majutusteenustele);
- füüsilise ja juriidilise isiku tulumaksumäärad jäid ka 2010. aastal 2009. aasta 21% tasemele (enne kriisi oli kavandatud igal aastal tulumaksumäära vähendamine 1% võrra);
- aktsiisimäärade tõus oli 1. jaanuarist 2010 (mootorikütus, alkohol, tubakatooted) ja 1. märtsist 2010 (elektriaktsiis);
- maamaksu tasumine pingestus: alates 2010. aastast on kaks tähtaega – 31. märts ja 31. oktoober (varem oli kolm tähtaega – 15. aprill, 15. juuli ja 15. oktoober);
- 1. jaanuarist 2010 rakendus 15 %-line omaosalus taastusravis (varem rahastas seda täielikult Haigekassa).

Majanduskriisist väljumiseks on vaja sihikindlalt ja eesmärgipäraselt tegutseda ning vastavaid majanduspoliitilisi otsuseid vastu võtta. Kindel on ka see, et pärast majanduskriisi ei ole rahvamajanduse struktuur endine, ajapikku toimuvad olulised nihked nii majandussektorite kui majandusharude osakaaludes ning sisus. See nõuab kindlasti laiaulatuslikku, üleriiklikku ja intensiivset ning eesmärgipäraselt tööjõu ümberõpet ja täiendõpet, mida peaks riik on institutsioonide kaudu koordineerima ja ergutama. Seni on riik siin küll väga loiult tegutsenud.

Eestis on majanduskriisist väljumiseks vaja tähelepanu pöörata:

- tootmise, sh tööstuse arendamise soodustamisele. Seni ei ole Eestis sellele valdkonnale piisavalt tähelepanu osutatud. Sageli on arvatud, et piisab vahendamisest, transiidist, turismist, kinnisvaraga tegelemisest, infotehnoloogia arendamisest jms. Ka need on kindlasti olulised arengu valdkonnad, kuid tegelikult majanduskasvu on võimalik saavutada ikkagi eeskätt tootvate töökohtade loomisega, seejuures on vaja jõuliselt ka rahvuslikku tööstust arendada;
- tööviljakuse suurendamisele igal tasandil (see eeldab ka kaasaegse tehnika ja tehnoloogia kasutamist, informatsiooni olemasolu jms), oluline on pidevalt jälgida tööviljakuse kasvu ja palgakasvu vahekorda. Oluliseks tuleb siinjuures soodsas investeerimiskliima loomist pidada;
- majanduskeskkonna ja ettevõtluskeskkonna täiustamisele ja igakülgse funktsioneerimise soodustamisele;
- pikaajaliste investeeringute soodustamisele ka kohalikes omavalitsustes (sh laenuvõtmise toetamine erinevate projektide kaalukust arvestades);
- funktsioonide senisest täpsemale määratlemisele riigi ja kohaliku omavalitsuse tasandite vahel, sellest tulenevalt oleks vajalik ka omavalitsuste poolt finantseerimise arvestamine kahes eraldi osas;
- Euroopa Liidu vahendite paremale kasutamisele.

Eeltoodud arengusuunad on paremini ellu viidavad kui lähtutakse regionaalse tasakaalustatuse vajadusest kui ka haldusterritoriaalne reformi läbiviimise vajalikkusest. Täna on Eesti regionaalse arengu seisukohast äärmiselt ebastabiilses olukorras (seda kinnitavad peaaegu kõik Eesti majandusnäitajad regionaalses võrdluses). Selle kõrval on palju diskuteeritud ka Eesti ühiskonnas haridusreformi, haiglate-tervishoiureformi ja mitmete teiste reformide läbiviimise vajadusest (mida käesolevas artiklis aga ei käsitleta).

Majanduskriisist väljumist ja stabiilsuse saavutamist toetaksid kindlasti seni venima jäänud ja palju vaidlusi ning erakondade omavahelist vastasseisu tekitanud reformid. Siin tuleks eeskätt rõhutada Eesti tänast regionaalset tasakaalustamatust ning selliseid olulisi reforme nagu haldusterritoriaalne reform, haridusreform, sotsiaalreform, haiglate reform, lõpuleviimata maareform jmt. Üldistavalt võib öelda, et nimetatud reformid (ja mitte ainult need) on kõik seotud Eesti regionaalse tasakaalustatud arenguga: *arvestades ja rakendades regionaalse tasakaalustatuse põhimõtteid ning viies komplekselt ja samaaegselt läbi haldusterritoriaalse reformi, osutub paremini ka teiste vajalike reformide läbiviimine. See omakorda aitab saavutada stabiilsust ja jätkusuutlikku majanduskasvu majanduskriisist väljumisel ning toetab Eesti rahvamajanduse jätkuvat arengut.*

Paigalseis nimetatud reformide vallas takistab oluliselt Eesti rahvamajanduse arengut ja konkurentsivõimet. Paraku ei ole erakonnad oma tegevuses seni olnud võimalised reformide läbiviimises kokku leppima ega erimeelsusi ületama. Esiplaanil on kahjuks nii erakondlikud kui isiklikud ambitsioonid. Sellise käitumise ja suhtumisega tekitatakse äärmiselt suurt kahju ja kulutusi ka tuleviku jaoks. Põhjus on siin kindlasti nii madalas poliitilises kultuuris, lühinägelikkuses ja kui ka tahtmatuses.

Piirkondlikud erinevused on Eestis vaatamata oma väikesele territooriumile rahvusvahelise mastaabiga võrreldes märkimisväärsed. Iseloomulik on elatustaseme ja konkurentsivõime suur erinevus Tallinna linnapiirkonna (mingil määral ka Tartu linnapiirkonna) ja teiste Eesti regioonide vahel. On oluline, et kõik Eesti regioonid oleksid atraktiivsed paigad nii elamiseks kui äritegevuseks. Nimetatud eesmärgi saavutamine on võimalik ainult koostöös Eesti riigi kui terviku arengut mõjutavate tingimuste parandamisega.

Majanduskriisist väljumiseks on vaja Eestis praegust olukorda adekvaatselt hinnata ning sellest vajalikud järeldused teha, samuti seni kavandatud abinõud võimalikult täielikult rakendada. Kuna Euroopa Liidus on regionaalsetel küsimustel väga oluline tähtsus, siis oleks vajalik otsustusinstitutsioonidel ka Eestis regionaalarengut mitte ainult rääkida ja tegevusi kavandada, vaid need kavandid ka realselt ellu viia.

## KOHALIKE OMAVALITSUSTE TULUAUTONOOMIA PROBLEEMID JA ARENGUVÕIMALUSED EESTIS

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Kolmel viimasel aastakümnel tõstetakse kogu maailmas üha enam esile avaliku sektori haldussüsteemi detsentraliseerimise probleematikat. Euroopa Liidus valitseva subsidiaarsusprintsipi kohaselt tuleb kõik avaliku sektori ülesanded lahendada nii madalal juhtimistasandil kui vähegi võimalik ja nii kõrgel juhtimistasandil kui hädavajalik. Üheltpoolt aitab see otstarbekamalt kaasata kodanikke ja valitsusväliseid organisatsioone ühiskonnaelu korraldamisse. Teiselt poolt on demokraatia tugevdamiseks vaja toetada poliitilise pluralismi ja ideede vaba konkurentsi arengut ühiskonnas. Seetõttu tegelevad paljud riigid – nii arenenud kui ka arengu- ja siirderiigid – kohalike omavalitsuste ja/või regionaalsete haldusastutuste vastutusala määramist ning autonoomia tugevdamist puudutavate küsimuste lahendamiseks. Euroopa riigid lähtuvad seejuures Euroopa kohalike omavalitsuste hartast.

Avaliku sektori haldussüsteemi parima toimimise tagamiseks on vaja esmajoones tasakaalustada selle erinevate tasandite vahel kohustuste ja õiguste jaotus ning määratleda ja kindlustada erinevate tasandite vabaduse ja vastutuse optimaalne suhe. Majanduslikust aspektist kujundab võimutasandite omavaheliste suhete iseloomu neile kohustuseks pandud ülesannete täitmiseks vajalike rahavoogude süsteem. Seadustes deklareeritud haldussüsteemi eri tasandite õigused ja kohustused, vabadus ja vastutus moonduvad paratamatult, kui puudub neid tagav adekvaatne avaliku sektori rahanduslike suhete süsteem. Avaliku sektori rahanduse ühele aspektile – kohalike omavalitsuste tuluautonomiale – ongi käesolev uurimus suunatud. Erilise teravusega tõstatub tuluautonomiaprobleem majandus- ja finantskriisi tingimustes.

Eestis on kohalike omavalitsuste vastutusalas olevate funktsioonide hulk pidevalt suurenenud. Kuni majandus- ja finantskriisi puhkemiseni, eriti viimaste aastate majandusbuuri ajal, kasvas avalikule sektorile laekuvate eelarvevahendite maht kiiresti ja kohalikele omavalitsustele üleantud ülesanded kaeti ilma suuremate probleemideta vajalike vahenditega. Samas moodustavad otseselt kohalike omavalitsuste kontrolli all olevad tulud vaid väikese osa omavalitsuste kogutuludest. Majandus- ja finantskriisi puhkedes ilmnes Eesti kohalike omavalitsuste tuluautonomiia mittetagatus – keskvalitsus jagas parlamendiametusele toetudes eelarvetulude proportsioonid enda kasuks ümber. Väga suur sõltuvus keskvalitsuse poolt kujundatava seadusandlusega määratud ja keskvalitsuse poolt otseselt jagatavatest vahenditest pärsib omavalitsuste tegevusvabadust oma funktsioonide täitmisel ning raskendab pikaajaliste arenguplaanide koostamist ja elluviimist. Selline olukord tekitab poliitilisi pingeid, destabiliseerib ühiskonda, nõrgestab demokraatiat ning vähendab kohalike võimude vastutust oma valijate ees. Kohalike omavalitsuste tuluautonomiaga seotud probleemide lahendamine on seetõttu kujunenud Eesti ühiskonna üheks võtmeprobleemiks.

Käesoleva artikli eesmärgiks on analüüsida Eesti kohalike omavalitsuste tuluautonoomia tagamisega seotud probleeme ning töötada välja ettepanekud omavalitsuste tuluautonoomia suurendamiseks. Eesmärgi saavutamiseks püstitatakse järgmised uurimisülesanded:

- analüüsida kohalike omavalitsuste tuluautonoomia olemust ning põhjendada selle vajadust;
- analüüsida erinevate allikate rakendatavust kohalike eelarvete tulude kujundamisel;
- hinnata Eesti kohalike omavalitsuste tuluautonoomia tagatust seadustes;
- hinnata kohalike omavalitsuste omatulude suhet SKP ja avaliku sektori kogutuludega rahvusvahelises kontekstis ning analüüsida kohalike omavalitsuste omatulude taseme ja struktuuri riigisiseseid erinevusi;
- esitada soovitusel Eesti omavalitsuste tuluautonoomia suurendamiseks.

Traditsioonilise fiskaalse föderalismis teooria kohaselt peaks elanikkonna varustamine avalike teenustega, mille pakkumist riik vajalikuks peab, toimuma vastavuses subsidiaarsusprintsipiga ehk madalaimal võimalikul haldustasandil, kus on tagatud antud teenuse pakkumisega kaasnevate peamiste kasude ja kulude jäämine vastava tasandi haldusüksuse geograafilistesse piiridesse. Arvestades kohaliku omavalitsuse eelseid keskvalitsuse ees elanike soovidele ja vajadustele vastavate avalike teenuste mahu ja struktuuri kindlustamisel, on subsidiaarsusprintsipi rakendamise tulemuseks enamasti avalike hüviste pakkumise ulatuslik detsentraliseerimine.

Et kohalikud omavalitsused saaksid neile seadustega pandud funktsioone efektiivselt ellu viia, peab neil olema selleks vajalikul hulgal tulusid (kas enda kontrolli all olevatest allikatest või kõrgemalt haldustasandilt üle kantud) ning õigus teha otsuseid nende tulude kasutamiseks.

Omavalitsuste vabadus avalike teenuste pakkumist puudutavate otsuste langetamisel sõltub olulisel määral nende tuluallikate iseloomust. Omavalitsuse tulud saab allikate lõikes jagada kolmeks: omatulud, laenatud ressursid ning ülekanded kõrgemalt haldustasandilt. Suurima autonoomia tagavad neist kahtlemata omatulud. Omavalitsuse otsustusõigus laenatud vahendite ja ülekannetena saadud summade kasutamisel sõltub olulisel määral nendega seotud konkreetsetest regulatsioonidest.

Mingi tululiik kuulub kohaliku haldusüksuse omatulude hulka, kui see vastab kolmele tingimusele:

- 1) tuluallikas peab olema omavalitsuste käsutusse antud täies ulatuses, lisatingimusi kehtestamata ja piiramata ajaks;
- 2) tuluallikas peab olema seotud kohaliku majandusbaasiga, nii et majanduskasv kohalikul tasandil suurendaks ka omatuluseid;
- 3) omavalitsustel peab olema vähemalt teatud otsustusõigus tuluallika üle (nt õigus kehtestada maksumäär, kasvõi kõrgemalt poolt määratud piirides).

Kohaliku tuluautoomia olemasolu tähtsaimaks eeltingimuseks on omavalitsuste võimalus määrata kogutavate tulude mahtu, sest see annab neile võimaluse varieerida pakutavate avalike teenuste kogust vastavalt kohalikele eelistustele ja vajadustele. Omavalitsuste omatulude peamisteks liikideks on kohalikud maksud, tasud teenuste eest ning omandilt saadud tulud. Tulenevalt omatulude määratlusest ei saa omavalitsuse omatuludena käsitleda jagatud makse. Jagatud maksude korral saab omavalitsusüksus enda käsutusse kindla osa tema piirides kogutud vastavatest maksutuludest, kuid tal puudub kontroll nii maksubaasi, kehtivate maksumäärade kui ka tulude jaotamise proportsioonide üle. Tuluautoomiast saab aga rääkida olukorras, kus omavalitsustel on seaduslik õigus kehtestada mõnele riiklikule maksule kohalik maksulis, sest see tagab neile võimaluse mõjutada eelarvesse laekuvate tulude mahtu.

Õigus otsustada kujutab endast vastutuse tekkimise eeltingimust. Seega edendab kohalike võimude vastutust valijate ees kõige paremini selge ja otsese seose loomine haldusüksuse funktsioonide täitmise kuluvajaduse ja tema vahetu kontrolli all olevate tulude vahel. Omavalitsuste vastutustundliku käitumise tagamiseks ning kohalike elanike eelistustele vastavate teenuste pakkumise kindlustamiseks on oluline saavutada omatulude suur osakaal nende kogutuludes.

Avalike teenuste kooskõla kohalike elanike eelistuste ja vajadustega saab kõige paremini saavutada teenuste pakkumisega kaasnevaid kulusid katvate tasude kehtestamisega. Need tasud mõjutavad otseselt hüvise nõudlust, sidudes makstava summa selgelt kasutatava teenuse kogusega, ning koormavad ainult neid isikuid, kes teenust ka tegelikult tarbivad. Kohalikke makse ja keskvalitsuse toetusi tuleks traditsioonilise majandusteooria kohaselt kasutada ainult selliste teenuste rahastamiseks, mille pakkumise finantseerimine otseste tasude kaudu ei ole mõne turutõrke esinemise tõttu võimalik.

Kuna kõigi avalike teenuste puhul ei ole kasusaajad selgelt identifitseeritavad, vajavad omavalitsused ka kohalike maksude kehtestamise võimalust. Seejuures peab tulude jagunemine olema proportsionaalne funktsioonide jagunemisega valitsus-sektori erinevate tasandite vahel.

Hea kohaliku maksu olulisemad tunnused on järgnevad:

- 1) kohaliku maksu tulupotentsiaal peaks olema küllaldane, võimaldamaks omavalitsuse kompetentsi antud teenuste pakkumist valijate soovitud tasemel ja mahus;
- 2) maks peaks olema kooskõlas horisontaalse ja vertikaalse õigluse põhimõtetega;
- 3) maksubaas peaks olema geograafilises mõttes ühtlaselt jaotunud;
- 4) maksubaas peaks olema selgelt seostatav ühe konkreetse omavalitsusega, millel tekiks õigus maksu kehtestada ja sellelt tulu saada;
- 5) maks peaks olema nähtav, et maksumaksjad oleksid teadlikud oma maksukoormuse suurusest;
- 6) maksukoormus peaks lasuma omavalitsuse residentidel, see ei tohiks olla lihtsalt eksporditav omavalitsusüksusest väljapoole;
- 7) kohalikul tasandil tuleks maksustada suhteliselt immobiilseid ressursse;

- 8) maksutulude inflatsioonielastsus peaks olema madal, sundimaks omavalitsusi rakendama konservatiivset eelarvepoliitikat;
- 9) omavalitsuste tulud peaksid olema majandustsükli jooksul suhteliselt stabiilsed; samas peaks kohalik maksubaas suurenema kooskõlas omavalitsuse majandusarenguga.

Nimetatud kriteeriumidest lähtuvalt on kohalikul tasandil rakendamiseks sobivaid maksuliike suhteliselt vähe. Ülaltoodud kriteeriumitele vastab kõige paremini kinnisvaramaks, seejuures eelkõige eluasememaks, mitte maks ärilises kasutuses olevale kinnisvarale. Samas on kinnisvaramaksu puhul tegemist administratiivses mõttes keerulise ja kalli maksuliigiga ja hea nähtavuse tõttu on see maks üks poliitiliselt ebapopulaarsemaid.

Käibe- ja müügitulud (sh tolli- ja aktsiisimaksud) seostuvad peamiselt keskvalitsuse funktsioonidega, nende administreerimine kohalikul tasandil on kallis ja keeruline, need pakuvad häid võimalusi maksuekspordiks, kalduvad olema regressiivsed ega ole valijatele piisavalt nähtavad. Seetõttu ei ole käibe- ja müügitulud üldiselt kohalikul tasandil kasutamiseks sobilikud.

Loodusressursside kasutamisega seotud maksud (nt maavarade kaevandamistasud) ei ole kohaliku tasandi tuluallikaks sobilikud eelkõige geograafiliselt ebaühtlase jaotuse tõttu. Samas võib loodusressursside intensiivse kasutamisega kaasneda oluline keskkonnamõju, millega seotud kulud jäävad suuresti vastava omavalitsuse kanda.

Otsestest maksudest ei peeta vastutuse üleandmist kohalikule tasandile mõistlikuks ettevõtte tulumaksu puhul. Selle administreerimine on keeruline, eriti kui ettevõtte tegutseb korraga mitmes omavalitsuses. Kapital on ka üks mobiilsemad tootmistegureid ning maks on valijatele mittenähtav. Tulemuseks on otsese seose kadumine kohalike kulude suurenemise ja elanike maksukoormuse tõusu vahel.

Üksikisiku tulumaks on kohalikul tasandil rakendamiseks sobivam. Isikute mobiilsus omavalitsuste vahel ei ole üldiselt nii suur, et tekitada tõsist maksukonkurentsi, maksubaas on suhteliselt selgelt seostatav kindla omavalitsusega, maks ei ole üldiselt omavalitsusest väljapoole suunatav ning on valijatele hästi nähtav. Samas ei jagune maksubaas omavalitsuste vahel reeglina geograafiliselt ühtlaselt ja maks seonduv eelkõige keskvalitsuse ülesannetega. Seetõttu ei soovitata üldiselt üksikisiku tulumaksu täielikult kohaliku tasandi käsutusse anda. Sobivamaks peetakse lahendust, kus omavalitsustel on õigus kehtestada riiklikule tulumaksule kohalik fikseeritud määraga maksulisa, kuid maksubaas ja maksu administreerimine jäävad keskvalitsuse kontrolli alla. Muude palgafondimaksude jätmist keskvalitsuse kontrolli alla tingib suuresti neist saadavate tulude kasutamine sotsiaal- ja tervishoiuprogrammidele, mis on reeglina kesktasandi kompetentsis.

Seega tekitab maksuliike toodud kriteeriumite alusel valitsustasandite vahel jaotades peamiselt probleeme asjaolu, et madalamate haldustasandite tulud ei ole piisavad nende vastutusalasse antud funktsioonide elluviimiseks. Pea ainsaks kohalikule



tasandile sobilikuks maksuliigiks on kinnisvaramaks eluasememaksu näol, kuid isegi eduka rakendamise korral ei anna see omavalitsustele neile pandud ülesannete täitmiseks küllaldast tulu. Seetõttu võimaldavad paljud riigid omavalitsustel kehtestada mitmesuguseid ettevõtte- või tarbimismakse, mis eelloodud kriteeriumide kohaselt ei sobi kohalikul tasandil kasutamiseks ning tekitavad majanduses moonutusi.

Eestis ei nõua põhiseadus otsesõnu kohalike omavalitsuste tuluautonoomiat. Omavalitsuste olulisimaks tuluallikaks on Eestis teatud osa üksikisiku tulumaksust. Kuna nii üksikisiku tulumaksu baasi, määra kui kohalikele omavalitsustele laekuva osa tuludest otsustab Eestis ainuisikuliselt keskvalitsus, ei ole aga tegemist omavalitsuste autonoomse tuluallikaga. Omavalitsustel puudub võimalus maksu-määra või maksubaasi muutmise abil saadavate tulude ja seega ka pakutavate avalike teenuste mahtu mõjutada. Samuti on raskendatud eelarve planeerimine, sest keskvalitsus võib omavalitsustele üksikisiku tulumaksust laekuva osa suurust ootamatult muuta, nagu juhtus 2009. aastal. Samuti ei saa omavalitsuste omatuluks lugeda maardlate kaevandamisõiguse tasu ning laekumisi vee erikasutusest, sest omavalitsustel puudub võimalus nende suurust mõjutada.

Kohalike omavalitsuste omatulude hulka võib Eestis lugeda maamaksu, sest omavalitsustel on õigus kehtestada maamaksuäär (seadusega lubatud piirides). Samuti kuuluvad omatulude kategooriasse kohalikud maksud, kasutustasud ning varade majandamisest saadavad tulud. Ka tulud varade müügist on omatulud, kuna otsuse müügi kohta teeb omavalitsus, kuid nimetatud tulude ühekordsuse tõttu ei saa nende kasutamist jooksvate kulude katmiseks õigustatuks pidada.

Euroopa Liidu liikmesriikides ulatuvad kohalike omavalitsuste kulud SKP-st vähem kui ühest protsendist Maltal rohkem kui 30%-ni Taanis, Eesti on vähem kui 10%-ga veidi allpool EL keskmist taset. Ka kohalike omavalitsuste kulude osakaal üldvalitsuse kogukuludest on väga erinev – 1,5%-st Maltal ligi 65%-ni Taanis, Eesti oma 28%-ga ületab mõnevõrra EL keskmist taset. Kõige detsentraliseeritumad on Põhjala riigid (eelkõige Taani ja Rootsi, aga ka Soome), Eesti võib Euroopa Liidu kontekstis lugeda keskmiselt detsentraliseeritud riigiks.

Kohalike omavalitsuste kulude jaotus valdkondade lõikes on Euroopa Liidus riigiti väga erinev. Eesti puhul torkab silma hariduskulude domineerimine teiste valdkondadega võrreldes (41% kogukuludest). EL-s keskmiselt on kulude jaotus tunduvalt ühtlasem – esikohal sotsiaalkaitse (22%), sellele järgnemas haridus (20%), üldised avalikud teenused (15%), tervishoid (13%) ning majandus (12%).

Kohalike omavalitsuste rahastamine on EL-s riikide lõikes väga erineva struktuuriga. Pea kõigis liikmesriikides saavad omavalitsused vähemalt mingi osa oma tuludest kinnisvaramaksust, kuid enamasti jäävad need ühe protsendi piiresse SKP-st. Väga levinud on ka mitmesuguste tulumaksude kasutamine kohalikul tasandil. Rootsis, Soomes, Eestis, Lätis ja Slovakkias annavad tulumaksud üle 40% omavalitsuste kogutuludest (EL keskmine on alla 18%). Maksutulud moodustavad enam kui poole omavalitsuste kogutuludest siiski ainult Rootsis, Austrias, Lätis,

Hispaanias ja Slovakkias (EL keskmine 36%). Seejuures ei ole aga teada, kas tegemist on omavalitsuste kontrolli all olevate või jagatud maksudega, sest selles osas arvestust ei peeta. Kohalike omavalitsuste tuluautonoomiat Euroopas analüüsinud OECD on jõudnud järeldusele, et omavalitsuste maksuautonoomia on eriti väike Kesk- ja Ida-Euroopa riikides. Suures osas toetub omavalitsuste rahastamine EL liikmesriikides siiski mittemaksulistele tuludele, mille hulgas domineerivad keskvalitsuse toetused.

Eesti kohalike omavalitsuste omatuludest annab selgelt suurima osa kaupade ja teenuste müük, maamaksust saadavad tulud moodustavad nende suhtes ca kolmandiku. Kokku annavad omatulud Eesti omavalitsustele keskmiselt vaid ca 15% kogutuludest. Seega on Eesti omavalitsused pea täielikult sõltuvad keskvalitsuse otsestest või kaudsetest (jagatud maksud) rahaeraldistest.

Omavalitsuste lõikes on erinevused omatulude osakaalus siiski märkimisväärsed. Perioodil 2003-2008 oli omatulude osatähtsuse erinevus esimese ja viienda kvintiili omavalitsuste vahel ca 3-kordne, erinevate omatulude komponentide lõikes on erinevused osatähtsuses aga oluliselt suuremad. Viendasse kvintiili kuuluvatele omavalitsustele on maamaks andnud kogutuludest keskmiselt kümme korda suurema osa kui esimesse kvintiili kuuluvatele omavalitsustele. Kohalikke makse kasutatakse Eestis äärmiselt vähe – 2008. aastal sai neist mingitki tulu veerand omavalitsustest, kuid enamiku puhul jäi kohalike maksude osakaal alla 0,1% kogutuludest. Kõige rohkem on vaatlusalustel aastatel kohalikest maksudest tulu saanud Tallinn – 1,7-2,3% kogutuludest.

Erinevus kaupade ja teenuste müügist saadavate tulude osakaalus kogutuludest on viendasse ja esimesse kvintiili kuuluvate omavalitsuste vahel olnud aastate lõikes suhteliselt stabiilne – keskmiselt 4,5-kordne. 2008. aastal sai kaupade ja teenuste müügist suhteliselt kõige rohkem tulu Käru vald (ligi 30% kogutuludest), kõige vähem aga Kohtla vald (vaid 1,1%).

Tulud varalt jäävad ka kõrgeimasse (viendasse) kvintiili kuuluvates omavalitsustes ühe protsendi piiresse kogutuludest, esimese kvintiili keskmine on aga sisuliselt 0%, sest paljud sinna kuuluvad omavalitsused ei saa varalt üldse tulu või on saadav tulu väga väike. Enim õnnestus 2008. aastal oma varalt tulu teenida Rae vallal (5% kogutuludest).

Väga suuri erinevusi esineb ka materiaalse ja immateriaalse vara müügist saadavates tuludes. Esimese kvintiili omavalitsuste keskmine on ka siin 0% kogutuludest, kõrgeimas kvintiilis on varade müük andnud keskmiselt 2-8% kogutuludest. Enim saadi varade müügist tulu 2006. aastal, 2008. aastaks tõi majanduskonjunktuuri halvenemine kaasa aga varade müügi osakaalu olulise vähenemise.

Kuna Eesti omavalitsusüksused on enamjaolt väga väikesed, on omavalitsuste ühendamises nähtud lahendust mitmetele kohaliku tasandi probleemidele. Omavalitsuste omatulude osakaalu suurenemisele omavalitsuste liitmine aga kaasa ei aitaks, sest korrelatsioon omatulude osatähtsuse ja omavalitsuse elanike arvu

vahel sisuliselt puudub (nt 2008. aastal oli vastav korrelatsioonikoefitsient 0,099). Kõige lihtsamalt rakendatavaks omavalitsuste omatulude suurendamise võimaluseks oleks neile tulumaksust laekuva osa asendamine õigusega kehtestada üksikisiku tulumaksule kohalik maksulisa. Tegemist oleks põhimõttelise muudatusega, sest Eesti omavalitsustel tekiks kontroll suure osa üle oma tuludest. Aastatel 2003-2008 moodustas tulumaks keskmiselt 42-50% omavalitsuste kogutuludest, omatulud koos tulumaksulaekumistega andsid aga koguni 56-65% kogutuludest. Võimaldades omavalitsustel tulumaksulisa kehtestamise abil praeguste laekumistega samas mahus tulusid hankida, suureneks Eesti omavalitsuste tuluautonoomia Taaniga võrreldava tasemeni. Omavalitsuste vahelised tuluerinevused jääksid siiski endiselt väga suureks. Seega säiliks ka tulumaksu kohaliku lisa kehtestamisel vajadus horisontaalse tulude taseme (elaniku kohta) võrdsemaks muutmise järele keskvalitsuse toetuste abil.

## NÕUDLUSPOOLSED INNOVATSIOONIPOLIITIKAD EUROOPA LIIDU VÄIKESE LIIKMESRIIGI KONTEKSTIS

Tõnu Roolaht  
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Traditsiooniliselt kalduvad innovatsioonipoliitikad keskenduma pakkumispoolsetele meetmetele. Nende hulka kuuluvad näiteks rahalised toetused riikliku riskikapitali vormis, ettevõtete tulumaksu vähendamised, teadusuuringute rahastamine, koolituse toetamine ja muud meetmed. Lisaks sellele pakuvad avaliku sektori tugiorganisatsioonid mitmesuguseid informatsiooni- ja maakleriteenuseid ning samuti võrgustike soodustamise teenuseid edendades nõnda piirkondlikke ja riiklikke innovatsioonisüsteeme.

Kuigi pakkumise meetmed on innovatsioonisüsteemi kaasatud organisatsioonide innovatsioonipotentsiaali tõstmiseks väga olulised, soodustavad innovatsioonide levikut ning selle soovitava kaasnähtusena tootlikkuse kasvu veelgi enam nõudluspoolsed innovatsioonipoliitikad. Siiski on samas oluline rõhutada, et nõudluspoolseid poliitikaid ei tuleks käsitleda pakkumispoolsete meetmete asendajatena.

Seega on nõudluspoolsed innovatsioonipoliitikad pigem traditsioonilisemate pakkumispoolsete poliitikate väärtuslikuks täienduseks. Nõudluspoolseid abinõusid võidakse võtta kasutusele täiendavate regulatsioonide, riigihangete, eranduluse subsideerimise ja muus vormis. Selliste poliitikate põhiideeks ja sihiks on innovatsioonile juhtiva turu (*lead market*) või vähemalt sellise turu tekkimise soodustamine. Seepärast peaksid nõudluspõhised innovatsioonipoliitikad võimaldama soodustada eluliselt oluliste ja samas jätkusuutlikke seoste tekkimist innovaatiliste lahendite ja nende potentsiaalsete turgude vahel.

Ebapiisava institutsionaalse raamistiku ja väheste poliitikakogemuste puhul võivad seesugused abinõud aga hoopis kaasa aidata uute turutõrgete ja erainitsiatiivi väljatõrjumise efektide tekkele. Sellisel juhul ei tarvitse nad suuta tagada innovatsioonide või tootlikkuse taseme jätkusuutlikku kasvu. Halvimal juhul võib tulemuseks olla üksnes konjunktuurse ajutise huvi tekitamine teatud innovaatiliste tegevuste vastu, mis lakkab peatselt pärast vastava poliitikaabinõu lõpetamist. Teisisõnu, poliitikad soodustavad vaid kunstlikku nõudlust, mis ei arene edasi iseseisvalt erasektoris toimivaks innovaatiliste lahendite turuks. Riigi poliitika võib niisviisi isegi kahjustada erahuvi arenemise evolutsioonilist protsessi vähendades eraõiguslike riskikapitalistide tegutsemishuvisid.

Eelöeldu ei tähenda aga sugugi seda, et nõudluspoolseid innovatsioonipoliitikaid ei tohiks kasutada. Seesugune kriitiline vaatenurk on vajalik hoopis selleks, et asjakohaselt määratleda niisuguste poliitikate võimalikud riskid ja vastuargumendid. See peaks võimaldama välja tuua ühiskonna innovaatilisuse taset tõepoolest kasvavate jätkusuutlike mõjude saavutamise kriteeriumid

Käesoleva artikli eesmärgiks on pakkuda välja soovitusi eeltingimuste ja poliitikate tunnuste kohta, mis peaksid aitama vältida nõudluspoolsete meetmete väärkasutust ja soodustama soovitud ühiskonnamuutuste jätkusuutlikkust. Selliste poliitikate katalüütiline mõju või hoopis lühiajalise ja valesti panustatud tõukeefekti ilmumine sõltub mitmetest erinevatest aspektidest, millega tuleks arvestada koordineeritult.

Muutused innovatsioonipoliitikas on tihedalt seotud innovatsiooniteooria ja mudelite arenguga. Kaasaegne süsteemne vaade toetab arusaama, et innovaatilise kasvu üheks peamiseks tõukejõuks on innovatsioonisüsteemi liikmete vahelised tihedad suhted. Seega innovatsioonisüsteemid hõlmavad nii innovatsioonivõimekuste loomist pakkumise poolelt kui ka turgude tekitamist innovatsioonidele nõudluse poolelt. Need kaks poolt on omavahel seotud tootja-kasutaja suhete kaudu mida mõjutavad omakorda mitmesugused innovatsioonipoliitika meetmed. Pakkumise poole ja nõudluse poole eristamine ei ole innovatsioonipoliitikale ainuomane nähtus, vaid majanduspoliitika ja –teooria valdkonnas üldkasutatav lähenemisviis.

Mõningad nõudluspoolsed innovatsioonipoliitika meetmed, nagu näiteks innovaatiliste lahendite riigihanked ei ole iseenesest uued, sest nende üle on kirjanduses diskuteeritud juba aastakümneid. Nõudluspoolsete poliitikate kaasaegsed lähenemised lisavad väärtust peamiselt terviklikuma ja meetmete vastastikkuseid seoseid arvestava lähenemisnurga abil. Nõudluspoolsed innovatsioonipoliitikad aitavad ületada turu- ja süsteemitõrkeid, saavutada ühiskondlike eesmärgi, kaasajastada majandust ning luua juhtiva turu tekkepotsentsiaali. Need poliitikad on samas aga kontekstispetsiifilised, mistõttu neid tuleks teistest riikidest saadud kogemuste baasil endale sobivaks kohandada mitte lihtsalt järele teha.

Euroopa Liidu tasandil süttis uuenenud huvi nõudluspoolsete poliitikate vastu Soome eesistumisperioodi ajal 2006. aastal, kui niinimetatud Aho raportis toodi esile sammud innovatsiooninõudluse soodustamiseks Euroopa Liidus. Erinevad nõudluspoolsed poliitikad on olulised ka Rootsi paradoksina tuntuks saanud situatsioonidest hoidumiseks, kus innovatsiooni siisendpanused ei too kaasa loodetavas mahus turustatavaid väljundtulemusi.

Põhjamaadest ongi nõudluspoolsed poliitikad kõige selgemalt innovatsioonide strateegiasse ja poliitikasse lülitatud Soomes, kus nõudlus- ja kasutajaorientatsioon on üheks võtmelemendiks. Teised juhtivad riigid innovatsioonipoliitika arendamise alal on näiteks Austraalia ja USA. Mitmetes ülejäänud riikides on nõudluspoolsed innovatsioonipoliitikad kas oluliselt vähemlevinud või varjatumalt esindatud. Enamikes Kesk- ja Ida-Euroopa siirderiikides on innovatsioonipoliitika arengutase endiselt pakkumispoole meetmete domineerimise faasis. Nõudluspoole poliitikad on omandamas suuremat olulisust eeskätt just vastastikkuses seoses keskkonnaalaste poliitikate ja niinimetatud ökoinnovatsioonidega, kui teisteski harudes ilmneb nõudluse poolt juhitud arenguperioode. Nõudluspoolse innovatsiooni teoreetilised kontseptsioonid ja praktilised kogemused toovad esile regionaalsete, riiklike ja rahvusüleste innovatsioonisüsteemide arengute vastastikkused seosed.

Euroopa Liidu väikese liikmesriigi nõudluspoolsed innovatsioonipoliitikad peaksid hõlmama ka sissetulevaid ja väljapoole tehtavaid otseseid välisinvesteeringuid ning nende seoseid, Euroopa Liidu finantseerimisskeeme, osalemist ühises uurimis- ja arendustöös ja teisi rahvusvahelisi mõõtmeid. Kuid sellele vaatamata peaks nende nõudluspoolsete meetmete peamine idee seostuma kodumaiste innovatsioonide ja innovaatiliste teadmiste absorbeerimisvõimekuse soodustamisega. Innovatsioonide nõudluse määratlemine peaks toimuma küll rahvusvahelises kontekstis, kuid samas võimaldama riigi ettevõtetel nendesse innovaatilistesse lahendustesse võtmepanuste tegemise kaudu kasu saada. Väikese riigi poliitikasüsteemid on üldjuhul paindlikud, kuid samas ressursinappusest tingitud piirangutega.

Pärast Euroopa Liiduga ühinemist on Eesti innovatsioonistrateegia ja vastavad poliitikad oma arengujõulisust mõneti kaotanud, sest nii-öelda jätkustrateegia aastateks 2007-2013 ei paku kuigi palju uudseid poliitikaideid, vaid kujutab endast paljuski varasemate initsiatiivide jätkumist. Innovatsioonipoliitika elluviimine toimub Eestis peamiselt kahe suurema haru kaudu – Eesti Majandus- ja Kommunikatsiooniministeerium koos oma sihtasutustega, nagu EAS ja Eesti Haridus- ja Teadusministeerium (samuti koos mitmete sihtasutustega).

Eesti innovatsioonipoliitika ja eriti nõudluspoolsete aspektide laiapõhjaline vaade aitab meil sõnastada järgnevad soovitusel:

- Isegi pakkumispoolseid innovatsioonipoliitika meetmeid tuleks eeskätt võimaldada neile kasutajatele ja sektoritele kes võivad soodustada nõudlust innovatsioonidele otsides ja luues uusi turuvõimalusi;
- Pakkumise poole ja nõudluse poole vastastikkuseid seoseid saab tugevdada inimkapitali arendamisele ja arendustöötajate palkamisele orienteeritud tugi-meetmete kaudu (hõive toetamine ja maksusoodustused);
- Teadusasutustele suunatud inimkapitali arendamise meetmed peaksid olema suunatud kommertsialiseerimise ekspertide palkamise toetamisele, sest see paistab olema teadussektori nõrgim külge;
- Innovatsiooniprojektide madal kasumikkus ehk teisisõnu innovatsioonide vähene tootlus viitab suunatud riigihangete initsiatiivide vajadusele, mille võib hiljem ümber kujundada katalüütilisteks riigiinitsiatiivideks;
- Riigihanked kui oluline nõudluspoolne innovatsioonipoliitika meede tuleks integreerida teiste innovatsioonipoliitika abinõudega vältimaks ohtu, et hanke-tegevuse eraldatud haldamine toob kaasa kahjulikke kõrvalmõjusid;
- Eesti turu väiksus tingib vajaduse soodustada regionaalset ja Euroopa Liidu ülest nõudlust (Eesti päritoluga) innovatsioonidele olles kaasatud laialdasse ja laiapõhjalisesse regioonisisese ja regioonidevahelisse tööstuskoostöösse (riiklik toetus seesuguste klastrite ja nõudluse arengule);
- Nõudluspoolseid innovatsioonipoliitikaid (hankeid, regulatsioone, standardeid, intellektuaalomandi alaseid arenguid, teadlikkuse tõstmise projekte jne.) ei tohiks kasutusele võtta poliitika nihkena nõudluse suunas, vaid kaalutletud lisandustena pakkumispoolsetele meetmetele arvestades innovatsioonide tegemise võimekuste arengut;

- Regulaatiivse ja standardeid kehtestava võimu kasutamine peaks olema senisest sisulisem innovatsioonipoliitika meetmete kogumi osa, kuid see peaks tuginema pigem harupõhiste uuringutele, ümarlaudade tulemustele ning regionaalse klasterdumisega seotud kaalutlustele kui lihtsalt poliitilistele eelistustele;
- Innovatsioonipoliitika läbipaistvuse ja paindlikkuse tasakaalu saavutamiseks võiks luua haruspetsiifilised taotluste hindamiskomisjonid;
- Sektoraaalsed innovatsioonipoliitikad peaksid pöörama rohkem tähelepanu rakendusuuringute alaste pingutuste ja investeeringute kasutajapoolsele suunamisele, et inkubeerida teaduse-tööstuse seoseid turusignaalide põhjal;
- Enam tähelepanu oleks tarvis pöörata madala ja keskmise tehnoloogilise tasemega harudele, sest need sektorid on siin suuremad ja nende potentsiaalne võimekus erasektori innovatsiooninõudluse toetamiseks suurem kui kõrg-tehnoloogilistes valdkondades, mille kohalik turg sisuliselt puudub;
- Kõrgtehnoloogilisi sektoreid puudutavad poliitikad peaksid muutuma valdavalt pakkumispoolsetest meetmetest, nagu infrastruktuuri arendamine, turgude otsimist soodustavateks poliitikateks;
- Euroopa Liidu Struktuurifondide vahendite kasutamine peab olema oluline, kuid samas kooskõlas nõudluspoolsete võimekuste arenguga, et muuta see kasutus korraga nii laialdaseks kui efektiivseks.

Eesti innovatsioonipoliitika areng on praeguseks jõudnud seisundisse, kus jätkates pakkumispoolset arenguteed koos riiklike ja erasektori rahaliste panuste kasvuga võime jõuda struktuurse tasakaalustamatuse ja üleinvesteeringu tendentsideni. Nõudluspoolseid poliitikaid on vaja tõmbamaks senisest enam tähelepanu turgude arendamisele ja kommersialiseerimisele. Viimase kümnendi jooksul on avaldunud märkimisväärne edasiminek pakkumispoolse poliitika arengus. Nüüd on käes aeg täiendada neid meetmeid nõudluspoolsete innovatsioonipoliitikatega. Samas tuleb seda teha ettevaatlikult vältimaks erasektori turgude asendamist riiklikult reguleeritutele just siis kui eraettevõtete konkurents on tekkimas.

Käesoleva poliitikaartikli tulemuste puhul on oluliseks piiranguks nõudluspoolsetele innovatsioonipoliitikatele keskendatud uuringu puudumine. Olemasolevad hindamisraportid ja muud allikad ei tarvitse haarata nõudluspoolsete vajaduste kogu keerukust. Raportid ja uurimistulemused toovad küll välja esmased üldistused, kuid nõudluspoolsete meetmete tegelik koostoime ja mõju seondub sageli konkreetse majandussektori, regiooni ja poliitikaeesmärkide kontekstiga.

Käesoleva analüüsi järeldused teoreetilisele kontekstile seonduvad vajadusega täiendada innovatsioonisüsteemide teooriaid dünaamilisema lähenemise suunas, mis peegeldaks muutusi pakkumispoolsetes võimekuste arendamise ja nõudluspoolsetes turu ehitamise rollides läbi aja ja erinevate kontekstide.

Juhid saavad käesolevast uuringust kasu hakates osutama enam tähelepanu innovatsioonide nõudluspoolsetele teguritele ja mõistes innovatsioonipoliitika arenguloogikat oma konkreetse ärivaldkonna vaatenurgast. Juhtide kaasatus

nõudluspoolseid innovatsioonipoliitika meetmeid puudutavasse avalikku arutellusse on riigi ja erasektori sünergiate saavutamiseks samuti ülioluline.

Tulevased uuringud võiksid keskenduda nõudluspoolsete innovatsioonipoliitika meetmete rakendamise riskide ja tõkendite detailsemale analüüsile. Üks võimalik uurimissuund seondub nõudluspoolsete innovatsiooni tugimeetmete efektiivsusega väikese avatud majanduse tingimustes. Mitmete nõudluspoolsete poliitikameetmete sisseviimisega tingitavad muutused erinevate tugiorganisatsioonide rollides väärivad samuti senisest enam uurimistähelepanu.



# TÖÖJÕU JA KAPITALI MAKSUSTAMISE ERINEVUSTEL PÕHINEVATE MAKSUDE PLANEERIMISE SKEEMIDE KASUTAMINE EESTIS

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## Sissejuhatus

Õeldakse, et maailmas pole midagi kindlat peale surma ja maksude, kuid tegelikult vastab tõele vaid selle väite esimene pool. Teadlik maksumaksja saab sageli ise otsustada kui palju, millal ja kus ta makse maksab. Maksuaspektidega arvestamine (sh ka maksude planeerimine) investeerimis-, finantseerimis- ja teiste majandusotsuste langetamisel on igati lubatud ja mitme seadusega kooskõlas oleva tegevusviisi vahel valides võib maksumaksja eelistada seda, millega kaasneb madalaim maksukoormus. Mõnikord püüavad maksumaksjad oma maksukoormust vähendada aga maksudest kõrvale hoides (näit. tulude varjamine, teeseldud tehingud jms). Selline tegevus pole mitte üksnes illegaalne vaid enamasti ka ebaeetiline ning ausat konkurentsikeskkonda kahjustav. Maksuseadused ei suuda kahjuks detailselt käsitleda igat võimalikku nüanssi majanduselus ning seetõttu eksisteerib mitmeid situatsioone, kus maksumaksja tegevus võib küll olla kooskõlas seaduse sätetega kui mitte seaduse mõttega.

Käesolevas artiklis käsitletaksegi üht sellist situatsiooni – nimelt töötasu/juhutuse liikme tasu osalist või täielikku asendamist dividendidega. Autori arvates on tegemist teemaga, mis ulatub väljapoole rahandusteadust pakkudes diskussiooninainet nii ärireeetika kui ka ettevõtete ühiskondliku vastutuse valdkondade raames.

## Maksude planeerimise vormid ja põhiprintsiibid

Moodsa rahandusteooria nurgakiviks on väärtuse maksimeerimise printsiip. Iga juhtimisotsus peaks olema suunatud väärtuse kasvatamisele. Väärtuse määravad ära tulevikus tekkivad oodatavad rahavood – nende suurus, tekkemoment ja riskitase. Tavalist maksumaksjat huvitavad eelkõige maksudejärgsed rahavood ning seetõttu on ta valmis kulutama ajalisi ja rahalisi ressursse maksude planeerimisalaseks tegevuseks. Efektiivne maksude planeerimine seisneb aga mitte maksude minimeerimises vaid maksudejärgsete rahavoogude väärtuse maksimeerimises. See tähendab, et arvesse tuleb võtta mitte üksnes tehinguga seotud maksuaspektid vaid ka kõik mittemaksulised näitajad, maksude planeerimisel tuleb arvestada kõigi tehingu osapooltega ning võimalike maksuriskidega.

Maksude planeerimise osas võib eristada kolme põhivormi: üht liiki tulu muutmine teist liiki tuluks (1); tulu ülekandmine ühelt isikult teisele (2) ning tulu ülekandmine ühelt ajahetkel teisele (3). Sageli maksustavad riigid erinevat liiki tulusid erinevalt. Nii on üpriski tüüpiline, et „aktiivset tulu“ (näit. palgatulu) maksustatakse kõrgemalt kui „passiivset tulu“ (näit. kasu vara võõrandamisest). Juhul kui need maksu-erinevused on suured üritavad ratsionaalsed maksumaksjad muuta erinevate

tehingute ja instrumentidega kõrgemalt maksustatavad tulud madalamalt maksustatavaks tuludeks.

Sageli maksustavad riigid erineva juriidilise staatusega isikuid erinevalt. Kui need erinevused on piisavalt suured on see maksumaksjale ajendiks otsimaks võimalusi, et tulu teeniks eelkõige see leibkonna liige või kontserni kuuluv ettevõtte, kelle piirmaksumäär on madalaim. Siinjuures tasuks eristada riigisiseseid ja piiriüleseid võimalusi. Viimased on eelkõige aktuaalsed rahvusvaheliste ettevõtete maksude planeerimise alases tegevuses.

Raha ajaväärtuskontseptsiooni põhiselt saab väita, et mida kaugemasse tuleviku õnnestub maksumaksjal maksude tasumine lükata, seda väiksem on nende maksude tegelik mõju maksumaksjale. Mõnikord (näit. enne suurt maksutõusu) osutub aga just vastupidine käitumine majanduslikult kasulikuks.

Nii mõnedki maksude optimeerimise skeemid hõlmavad mitut ülalmainitud tegevust. Käesolevas artiklis uuritav töötasu asendamine dividendidega hõlmab samuti lisaks üht liiki tulu muutmisele teist liiki tuluks ka võimalikku maksukohustuse edasilükkamist. Nimelt toimub alates 2000. aastast Eestis ettevõtete kasumi jaotamine alles selle jaotamisel.

### **Töõjõu ja kapitali maksustamine Eestis**

Eestis, sarnaselt paljudes teistes riikidega, maksustatakse kapitali madalamalt kui tööjõudu. Tulu kapitalist jaguneb jooksvaks tuluks (nt. intressid, dividendid, rendimaksud) ning kapitali kasutuluks (kasu vara võõrandamiselt). Kõige nende tululiikide puhul (üksikute eranditega) on tulumaksumääraks 21%. Muid makse üldjuhul kapitaliga ei seondu (v.a. maamaks maaomandilt). 1990-ndate esimesest poolest alates on kapitali maksustamine muutunud üha soodsamaks. 1994. aasta tulumaksureformiga asendati progresseeruv maksusüsteem proportsionaalsega. 2000. aasta tulumaksureformiga lükati ettevõtete kasumi maksustamise moment selle teenimise hetkest edasi kasumi jaotamise hetkeni. 2005. aastal alandati tulumaksumäära 26%-lt 24%-ni, ning edasised maksualandused aastatel 2006-2008 tõid kaasa maksumäära alanemise 21%-ni. Samuti on Eesti viinud oma maksuseadustesse sisse mitmeid muudatusi elimineerimaks tulude (eelkõige dividenditulude) topeltmaksustamist ning sõlmitud on üle 40 topeltmaksustamise vältimise lepingu välisriikidega. Alates 2000. aastast ei maksuta Eesti üldreeglina enam mitteresidentide Eestis teenitud väärtpaberitulu.

Ka kompensatsioon tööjõu kasutamise eest võib esineda erinevates vormides, millest tüüpilisemateks on töötasu, erisoodustused ja juhatuse liikme tasu. Kui maailmas 1990-ndatel hoogustunud maksukonkurents on mobiilse kapitali maksukoormust tuntavalt alandanud, siis tööjõu maksustamise osas pole vähemalt Eestis sellist tendentsi võimalik täheldada. Kompensatsioon tööjõu kasutamise eest on üldreeglina maksustatud lisaks tulumaksule ka sotsiaalmaksuga (33% 2010. aastal) ning töötasu täiendavalt veel töötuskindlustusmaksuga (2010 aasta maksumäär töövõtjale 2,8% ja töödandjale 1,4%).

Otsustusprotsessis on tavaliselt olulised eelkõige piirmaksumäärad. Arvestades Eestis kehtivat maksuvaba miinimumi (ca 1726 EUR aastas) ning kehtivaid maksustamisreegleid on piirmaksumäärad tööjõu puhul ca kaks korda kõrgemad kui piirmaksumäärad kapitali puhul (vt. tabel 1).

**Tabel 1.** Otsesed piirmaksumäärad Eestis (2010. aastal)

Tululiik	Maksumaksja aastane tulu	
	< € 1726	> € 1726
Töötasu	27,7%	42,9%
Juhatuse liikme tasu	24,8%	40,6%
Erihoodustused	40,6%	40,6%
Dividendid	21,0%	21,0%
Intressi- ja rendimaksud	0,0%	21,0%

Kui 1990-ndate algul polnud tööjõu odavuse tõttu sellega kaasnevad kõrged maksumäärad Eesti ettevõtetele eriliseks probleemiks, siis tööjõu kiire kallinemine (ajavahemikus 1992-2008 kasvas keskmine palk ligikaudu 24 korda) on muutnud tööjõuga seonduva maksukoormuse üheks võtmeprobleemiks Eesti arenguteel.

### **Töötasu asendamine dividendidega Eesti ettevõtetes**

Tööjõu kõrge maksukoormus ning võrreldes dividendidega kahekordne erinevus piirmaksumäärades on ajendanud Eesti ettevõtjaid otsima võimalusi töötasu asendamiseks madalamalt maksustatava tululiikidega. Kuigi efektiivseks maksude planeerimiseks tuleks arvestada ka mittemaksuliste aspektidega, on nende arvesse võtmine sageli raskendatud. Tööjõuga seotud maksude tasumine pakub töötajatele mitmesuguseid sotsiaaltagatise nagu näiteks ravikindlustus, riiklik vanaduspension ning töötuskindlustus, kuid nendega seotud hüvede suurus on vaid osaliselt seotud tasutud maksude suurusega (solidaarsusprintsip); need hüved on enamasti tingimuslikud ning osa neist realiseerub alles kauges tulevikus. Seetõttu on ka nende hüvede väärtust maksumaksja jaoks raske hinnata.

Asjaolu, et Eesti Ärieadustik võimaldab, kuid ei kohusta, ettevõtte juhatuse liikmetele tasu maksta, andiski ettevõtjatele võimaluse oma maksukoormust vähendada asendades juhatuse liikme tasu omanikutuluga (dividendid). Aastatega on nende ettevõtjate ring, kes sellist skeemi kasutavad üha laienenud (vt. tabel 2)

Eestis on ligikaudu 6000 juhatuse liiget, kellele pole alates 2005 aastast mingit tasu maksud ning ca 3000 pensionärist juhatuse liiget kelle ainuke ametlik sissetulek on riiklik vanaduspension.

**Table 2.** Juhatuse liikme tasu osaline või täielik asendamine dividendidega Eestis aastatel 2005-2009

	Aasta			
	2005	2006	2007	2008
Eeldatav aastane juhatuse liikme tasu (eurodes)	12 383	14 430	17 389	19 806
Juhatuse liikmete arv, kelle juhatuse liikme tasu on alla eeldatava ning dividenditulu üle € 6387	1924	2592	3974	4407
Juhatuse liikmete arv, kellele juhatuse liikme tasu ei maksta ning kelle dividenditulu on üle € 6387	106	156	211	251
Sotsiaalmaksu eeldatav alalaekumine seoses töötasu osalise või täieliku asendamisega dividendidega (miljonit eurot)	4,05	6,75	12,22	15,67

Maksukorralduse seadus (§ 84) lubab maksuhalduril vajaduse korral lähtuda tehingu majanduslikust sisust ignoreerides selle vormi. Ka käesolevas artiklis vaatluse all oleva maksude planeerimise skeemi puhul on seda seadusesätet kasutatud. Ringkonnakohtu seisukoht selles küsimuses oli, et dividende on küll võimalik maksuhalduril ümber kvalifitseerida töötasuks ja maksustada vastavalt, kuid üksnes juhul kui ettevõtte juhtimises osaleval omanikul on teada selged reeglid kuidas töötasu ja dividende eristada. Selliste reeglite väljatöötamise kohustus on hetkel pandud maksuhaldurile, kuigi palju mõistlikum oleks see küsimus lahendada seaduste tasandil.

### Järeldused

Eraisikute ja ettevõtete finantsjuhtimise probleemvaldkondade hulka kuulub maksude planeerimine. Maksude planeerimisega seotud tegevuste eesmärgiks ei ole siiski tasumiseks kuuluvate maksude minimeerimine, vaid maksujärgse tulu maksimeerimine. Samas kui eksisteerivad selgelt ebaseaduslikud maksudest kõrvalehoidmise meetodid, on olemas ka nn. hallid alad, kus piir maksude optimeerimise ja maksudest kõrvalehoidmise vahel on sageli hägune.

Käesolevas artiklis käsitletakse sellist skeemi, nagu töötasude asendamine dividendidega. Taoline skeem on populaarne eriti Eestis, kuna töötasu on maksustatav nii tulumaksu, sotsiaalmaksu kui ka töötuskindlustusmaksuga, samas kui dividendid on maksustatavad vaid tulumaksuga.

Algeine statistiline analüüs näitab, et Eestis 2008. aastal enamikes majandussektorites oli keskmine juhatuse liikme tasu madalam riigi keskmisest kuupalgast, ligikaudu 20% juhtudest olid juhatuse liikmete sissetulekud madalamad isegi vastava aasta elatusmiinimumi tasemest. Maksu- ja Tolliameti (MTA) poolt läbiviidud analüüsi kohaselt ligikaudu 5% firmaomanikest, kes täidavad juhatuse liikme kohustusi, kasutavad eeldatavasti töötasu osalist või täielikku asendamist dividendidega. Sellise skeemi tegelik ulatus võib autorite arvamusel kohaselt olla isegi märkimisväärssem.

Kuigi maksuhaldur lubab ignoreerida tehingu õigusliku vormi, kui vorm ei vasta tehingu sisule, tuleks tal kõigepealt anda selgeid suuniseid maksumaksjatele kuidas määrata piisav hüvitus juhtidele. Samas, nende suuniste iseloom on selgelt soovituslik ning Maksu- ja Tolliametil puuduvad volitused nõuda maksumaksjatel nende suuniste järgmist. Tundub, et muutust praeguses situatsioonis võib oodata vaid pärast vastavatesse õigusaktidesse muudatuste sisseviimist.

Käsitletavat teemat on võimalik arendada mitmeti. Üheks võimaluseks oleks selgitada töötasude asendamise dividendidega negatiivseid mõjusid erainvestori seisukohast. Samuti oleks huvitav selgitada omanik-juhtide ning ettevõttes osalust mitteomavate juhtide tasude erinevust ja selle dünaamikat viimastel aastatel. Huvitavaid tulemusi võiks anda empiiriline uurimus selle kohta, kuivõrd firma-omanikud kasutavad oma ettevõtteid rahaliste vahendite soodsama hoiustamise eesmärkidel.

## REISIJATEVEO RIIKLIKU KORRALDUSE PROBLEEMID JA VÕIMALUSED EESTI BUSSITRASPORDI NÄITEL

Jüri Sepp, Eve Tomson  
Tartu Ülikool

Transpordisüsteemi ja eriti ühistranspordi esmane ülesanne on tagada kõikidele inimestele ja ettevõtetele juurdepääs nende igapäevategevuseks vajalikele objektidele. Eestis on põhiliseks ühistranspordi liigiks bussitransport. Artikli eesmärgiks ongi näidata just bussitranspordi riikliku korraldamise vajadust ja võimalusi Eestis. Selle eesmärgi saavutamiseks on vajalik uurida reisijateveo korraldamise rahvusvahelisi kogemusi ja Eesti arenguid, majandusteoreetilisi iseärasusi ning siit tulenevaid erimeetmeid.

Efektiivne transpordisüsteem on majandus- ja sotsiaalarengu üheks oluliseks eeltingimuseks, mis tähendab ühelt poolt korrasolevaid ja rahvusvahelistele normidele vastavaid teid, ummikuteta ja ohutut liikluskorraldust, kiireid ja efektiivseid transpordivahendeid, tarbijasõbralikku ühistranspordikorraldust, turvalist liikluskeskonda ja paljut muud. Transpordisektorile on tehtud Euroopa ühtses konkurentsipoliitikas, sh riigiabi andmisel pikka aega osalisi või täielikke erandeid. Sõitjate veo puhul lisandub siin teistele põhjustele selle käsitlemine avaliku universaalteenusena, mida ka artiklis lähemalt selgitatakse.<sup>1</sup> Muud riikliku sekkumise ajendid jäävad antud töös tahaplaanile.

Avaliku transpordi missioon on kindlustada igapäevasele liikumisele ühest punktist teise, suurendades sellega elukvaliteeti. See on riigi sotsiaalpoliitika ja regionaalpoliitika osa. Osaliselt on aga ühistransport jäetud turu reguleerida, mistõttu erinevad institutsionaalsed mehhanismid siin kombineeruvad. Euroopa Liidu suurte linnade ühistranspordi toetused ulatuvad keskmiselt 55%-ni teenuse maksumusest. Linnade lõikes on toetuste osatähtsus suuresti varieeruv.

Riigi roll võib avalduda erinevates vormides. Iirimaa, Taani ja Suurbritannia ühistransport on vabastatud käibemaksust ja ettevõtja saab tagasi kütuste pealt makstud aktsiisimaksu. Kreekas ja Itaalias on rakendatud ühistransporditeenustele tavalist käibemaksumäära. Soomes, Rootsis, Prantsusmaal, Austrias, Saksamaal, Hollandis, Luksemburgis, Hispaanias ja Belgias on rakendatud alandatud käibemaksumäära. Taanis on Eestiga sarnane administratiivne struktuur, riigi pindala, saarte olemasolu jne., mistõttu on autorid valinud ühistranspordi korralduse uurimisel Eestiga lähemaks võrdlemiseks just Taani.

Bussitransport on Taanis korraldatud munitsipaalomandis ühistranspordiettevõtete baasil, kes vastutavad ka ühistransporditeenuse korraldamise eest. Bussiteenuse osutamine on antud üle erafirmadele. Firmad töötavad lepingute alusel, mis on

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<sup>1</sup> Universaalteenuse kui üldiselt ja soodsalt ligipääsetava teenuse mõistet kasutatakse küll valdavalt posti ja telekommunikatsiooni valdkonnas, kuid sisuliselt on see avaliku huvi aluseks ka ühistranspordis.

sõlmitud ühistransporti korraldavate ettevõtete ja või otse munitsipaalsete asutustega. Toetused avalikule bussitranspordile tehakse Taanis maakondade või omavalitsuste poolt. Riiklikud toetused üldjuhul puuduvad. Kopenhaageni piirkonnas on bussidel ja linnalähisraudteel ühtne tariifisüsteem. Defitsiit kaetakse toetustega ja jagatakse Kopenhaageni regionaalsete omavalitsuste vahel tulumaksu alusel. Riigi teistes osades kaetakse defitsiit sarnaselt maakondade ja omavalitsuste poolt, kes bussiteenuste ostmises osalevad Iseesivad ühistransporti korraldavad ettevõtted otsustavad Taanis ka pensionäride piletihinna suuruse, sest riigipoolset toetust neile ei anta. Osades piirkondades on pensionäridel võimalik kasutada nn. pensionäri kaarti, mille hind moodustab 15% täiskaardi maksumusest, kuid kehtib üksnes väljapool tippunde. Toetuste määr varieerub Taanis piirkonniti 8%-st kuni 55%-ni ühistranspordi kogumaksumusest.

Eestis on bussitransport peamiseks ühistranspordi liigiks. Tallinn koos lähiehitistega on ainus piirkond, kus busside kõrval on kasutusel ka trammid, trollid ja elektrirongid. Eestis tervikuna tehakse 2/3 ühissõidukisõitudest bussiga, ligi 30% linna elektritranspordiga ja vaid 2% rongiga. Linnades moodustab ühistranspordi osakaal 30-40% sõitude koguarvust. Väljaspool linna piire ületab liiklemises erasõidukitega sooritatud sõitjakilomeetrite arv aga ühistranspordi näitaja kahekordselt.

Sõitjate vedu bussidega jaguneb Eestis mitmeks haruks lähtuvalt veo iseloomust ja finantseerimise põhimõtetest. Veo iseloomust lähtuvalt jagatakse bussivedu juhuvedudeks ja liinivedudeks. Juhuveedu on tellija või vedaja algatusel ühise eesmärgi (turism, kontserdi- ja teatrikülastused jm.) nimel eelnevalt moodustatud sõitjaterühma vedu, mida teostatakse ühekordse tellimuse või tellija ning vedaja vahelise lepingu alusel. Liiniveoks loetakse kindlal liikumisteel ja sõiduplaani alusel korraldatavat regulaarset sõitjatevedu, kus sõitjad saavad sõidukisse siseneda ja sealt väljuda sõiduplaaniga määratud peatustes. Liinivedude teostamiseks peab vedajal olema liiniluba. Liinivedu jagunevad valla-, linna-, maakonna-, kaug- ja rahvusvahelisteks liinideks. Kohalik liinivedu on sõitjate vedu valla-, linna- või maakonnaliinil, mille liikumistee ning selle alg- ja lõpp-punkt asuvad sama valla, linna või maakonna haldusterritooriumil. Teenust osutatakse riigi või omavalitsusüksuse poolt tellitud mahus ja tingimustel. Avaliku teenindamise liine teenindatakse vastavalt tellija poolt kehtestatud sõiduplaanile olenemata sõitjate arvust. Kaugliinivedu teeliikluses on sõitjate vedu liinil, mille liikumistee asub eri maakondades.

Majanduspoliitika üldiseks aluseks turumajanduses on konkurentsi käsitlemine vahendina rahvamajandusliku heaolu maksimeerimiseks. Loomulikult pole seda lihtne tagada kõigi huviste jaoks. Turgu võivad mõjutada erinevad jõud, mis takistavad konkurentsimehhanismi efektiivset toimimist ja teevad tegusa konkurentsi jõudmise võimatuks. Sel juhul räägitakse turutõrgetest.

Ka bussitranspordis toimuv on keerukam kui nn. tavaturgudel, kus kohtuvad täpselt defineeritud eratoodete pakkumine ja nõudlus. Bussitranspordi turul ilmnevad lisaks erahuvidele ka avalikud huvid. Seal toodetakse erahuviste kõrval ka avalikke hüviseid. Et infrastruktuur on kallis ja bussitransport peab olema kättesaadav laiaadele rahvahulkadele, on vajalikud valitsuse meetmed ja avalik-õiguslik

transpordipoliitika. Seetõttu on sagedased valitsuse interventsioonid. Transpordi arenguks vajalikud meetmed tagatakse seadustega, riigikogu otsustega, vabariigi valitsuse määrustega, riikidevaheliste autoveo kokkulepetega ja rahvusvaheliste konventsioonide ja kokkulepetega, millega Eesti on ühinenud ning muude õigusaktidega, mida on maakonna planeeringu koostamisel arvestatud.

Riigi sekkumise peamiseks majandusteoreetiliseks aluseks peetakse siin asjaolu, et ühistranspordi puhul on osaliselt tegemist avalike ehk üldkasutatavate hüviste pakkumisega. Siiski vajab see üldlevinud seisukoht autorite arvates vähemalt täpsustamist. Avalik hüvis on hüvis, mida iseloomustab kaks põhitunnust: mitterivaalsus ja välistamatus tarbimises. Esimese tunnuse tõttu pole neid otstarbekas üksikisikutele eraldi turu kaudu müüa, sest ühe inimese tarbimine ei vähenda teistele tarbimiseks jäävat kogust. Avalike hüviste peamiseks tunnuseks on siiski nende tarbimise välistamatus, mistõttu neile ei kujune turuhinda ning vastavalt puudub ka motivatsioon erapakkumiseks turul.

Kui me vaatame konkreetset transporditeenust, siis selle tarbimise välistamine mittemaksjaile pole ei põhimõtteliselt ega tehniliselt mingi eriline probleem. Avalik hüvis ja turutõrge pole siin seega seotud mitte niivõrd konkreetse sõiduteenusega, vaid selle üldise kättesaadavusega valdavale osale elanikkonnast. Just seda asjaolu kui hüvist ei pruugi turg ise tagada. Olukord on siin analoogiline universaalteenusega posti- ja telekommunikatsiooniteenuste turul.

Alternatiivina vaadeldav vaba turg võib siin viia olulise hinnadiferentseerumiseni ning teatud turusegmentide alavarustatuseni. On arusaadav, et suuremaid keskusi ühendavatel liinidel pole pakkumise puudust karta ning ka hind kujuneb vabas konkurentsis suhteliselt madalaks. Seevastu ääremaade varustamine sõiduteenustega eeldab piiratud nõudluse ja lisakulude tõttu kõrgemaid hindu, mis võivad osutada tarbijatele ülejõukäivaks ning viia turu kadumiseni.

Majanduspoliitika teooria pakub siin kaks lahendust:

- 1) ühtede liinide ristsubsideerimine teiste arvel, mis eeldab muidugi nn rosina-nokkimise või kooreriisumise tõkestamist piirkondlike monopolide loomise ja neile eriõiguste väljaandmisega;
- 2) kui ristsubsideerimine ei suuda tagada piisavalt laia juurdepääsu reisijateveole (universaalteenuse „mahtu“), tuleb lisada selle doteerimine.

Kui tavaliselt räägitakse eriõiguste väljaandmisel enampakkumise rakendamise kohta monopolse kasumi koondamiseks *ex ante* ühiskonna kätte koos selle hilisema kasutamise näiteks riskigruppide kaitseks, siis reisijateveo puhul on pigem levinud nn vähempakkumine. Konkursiga selgitatakse, missugune bussifirma oleks valmis piirduma kokkulepitud liinivõrgu teenindamisega minimaalse dotatsiooniga. Mõlemal juhul asendatakse siiski konkurents turul konkurentsiga turu pärast.

Dotatsioon peaks kindlustama teenuse efektiivse ja piisava pakkumise. Loomulikult sõltub dotatsiooni vajadus ka kommerts- ja toetatavate liinide vahekorras (proportsioonist). Ei tohiks unustada, et mida rohkem kommertsliine, seda vähem



jääb võimalusi ristsubsideerimiseks monopoolsete avalike liinikomplektide raames ning seda enam on vaja otseseid subsiidiume.

Väiksema asustustihedusega piirkonnas on võtmeküsimus toetuste abil elanikele minimaalsete liikumisvõimaluste tagamine, tihedalt asustatud piirkonnas on vajalik tagada optimaalne veomaht erinevate transpordiliikide, kommertsliinide ja toetatavate liinide kooslusega, mis praegusel hetkel on puudulik Kommertsalustel töötavate ja toetatavate liinide koordineerimatuse ja mõningate toetatavate liinide ebaotstarbekuse tõttu on suurenenud vajadus toetuste suurendamiseks tiheda kommertsliinivõrgu olemasolu juures. Massilise kommertsliinide avamisega võib kaasneda oluline piletitulu kaotus avaliku teenindamise lepingu alusel teenindavatel liinidel, mis toob kaasa toetuse vajaduse kasvu. Selle probleemi leevendamine nõuaks spetsiaalset metoodikat ja vastavaid uuringuid.

Avalikku liinivedu teostatakse Eestis vedaja ja pädeva ametiasutuse, kelleks on kohaliku või piirkondliku omavalitsuse üksus või muu avaliku sektori struktuuriüksus (näiteks ühistranspordikeskus), vahel sõlmitud tähtajalise avaliku teenindamise lepingu alusel. Maavalitsus või kohalik omavalitsus sõlmib lepingu konkursi alusel prima pakkumise teinud vedajaga. Tulenevalt lepingust tekib vedajal avaliku teenindamise kohustus, mille täitmiseks nähakse riigi- või kohaliku omavalitsuse eelarvest ette sihtotstarbelist toetust. Seda osa nimetatakse ka dotatsiooniks või subsiidiumiks ja neid liine vastavalt doteeritavateks liinideks.

Dotatsioonide konkreetse vajaduse hindamiseks on vaja analüüsida toetatavate liinide rolli erinevates piirkondades sõltuvalt piirkonna eripärast ja toetuste kasutamise sihipärasust. Paraku ei luba ühtse tulu- ja kulumetoodika puudumine seni adekvaatselt hinnata erisusi liinikilomeetri maksumuste osas maakondade lõikes. Küsimusi tekitavad eelkõige suurima ja väikseima liinikilomeetri maksumuse märgatavad erinevused ning nende põhjused maakondade vahel.

Eesti Vabariigi Majandus- ja Kommunikatsiooniministeerium on välja pakkunud metoodika maakondlike toetuste jagamise kohta, mille ellurakendamisel on kaks etappi. Esimeses etapis arvatatakse kindla perioodi kohta indikaatorid, mille põhjal toetused jagatakse. Teises etapis tuuakse juurde dünaamika komponent, kus indikaatoritega seostatakse täiendav toetus. MKM rõhutab, et indikaatoreid ei kasutata karistamiseks – nende paranemise eest maakondadelt raha ära ei võeta.

Ühistranspordile toetuste jagamise uus metoodika lähtub põhimõttest, et sõitjatel oleks võrdne võimalus ühistranspordi teenuseid kasutades jõuda igapäeva elus neile vajalike asutusteni ja tööle. Võrdse võimaluse all mõeldakse nii rahalist kättesaadavust elanike sissetulekuid arvestades kui ka piisava liinivõrgu olemasolu ning lähedust. Kasutatavad indikaatorid on: bussipeatuse kaugus, lähim ratsionaalne pood, lähim kool, lähim linna- või vallavalitsus.

Kokkuvõttes on enamuse ühistranspordiliikide korral siiski täheldatav taandareng. Probleemiks on nii erinevate omandi- ja organisatsioonivormide sobitamine üheks tervikuks kui ka erinevate transpordiliikide vahekorra optimeerimine, sh reisijate-

veol. Eesti ühistranspordi arendamise üks seni saavutamata eesmärk on kujundada bussitranspordist atraktiivne ja jätkusuutlik alternatiiv sõiduautodele inimeste liikumisvajaduste rahuldamisel. See teema jääb aga antud artikli vaateväljast kõrvale ja vajab spetsiaalseid uuringuid. Samas võib öelda, et ühistranspordisektori (sh. bussitranspordi) arengu üheks piduriks on olnud muidugi ressursside vähesus. Ühistranspordiseaduse kohaselt peaks riik küll omavalitsusüksuse taotlusel katma riigieelarvest maakonna bussiliinil avaliku liiniveo teenuse maksumusest puudujääva osa kas täielikult või osaliselt, kui omavalitsusüksuse eelarve tulubaas ei ole piisav. Kahjuks on avaliku sektori vahendid piiratud ja seetõttu ei ole riigil olnud võimalik seni piisavalt investeerida ühistranspordi olukorra parandamisse, mis kõige üldisemalt kajastub reisijateveo mahtude vähenemises, aga ka kasutatava bussipargi vananemises.

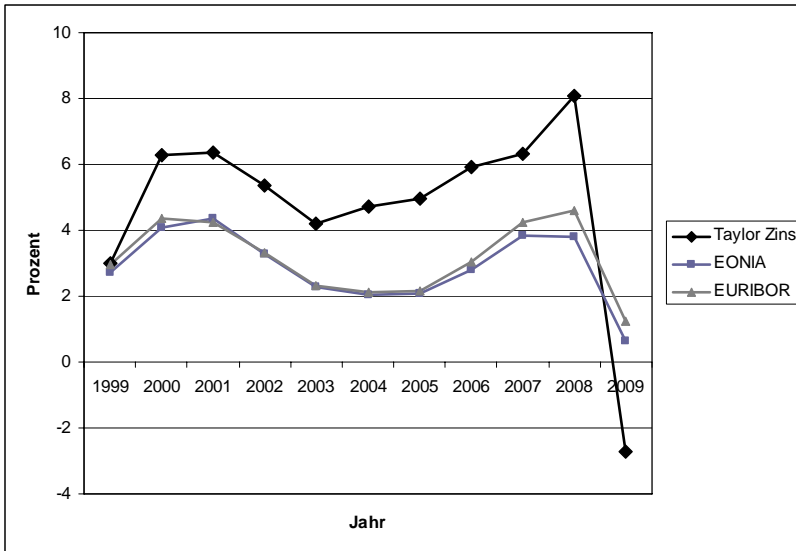
## **SOME SHORT REMARKS ABOUT THE EUROPEAN INTEREST RATE POLICY**

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In modern monetary policy nearly every central bank has an output driven task to fulfil. This could be price stability or the attainment of a stable inflation rate. But the achievement of such goals can not be 100 percent guaranteed due to factors as shocks or political influence. In order to establish whether the monetary policy has reached its goals, it is possible to use monetary rules ex post as a benchmark. A rule which could be used for this purpose is the Taylor rule from which the Taylor interest rate can be calculated. The Taylor Rule was first proposed by the U.S. economist John B. Taylor in 1993. Since this date the Taylor rule is a monetary-policy rule that stipulates how much the central bank should change the nominal interest rate in response to divergences of actual inflation rates from target inflation rates and of actual Gross Domestic Product (GDP) from potential GDP. The Taylor rule and its interest rate are also often used for the analysis and description of the American and European interest rate policy. The reason for the frequent usage is the simplicity of the application and interpretation of the Taylor interest rate.

Some critique concerning the Taylor rule and its interest rate still exists however. The first point is a lack of theoretical background. This means that the rule is based on abstract assumptions and ad hoc conclusions. Another point of criticism is interest rate calculated using this rule. Here it is possible to use different methods and parameters for the determination of inflation and GDP. Depending on which are chosen the Taylor interest rate will vary heavily.

Besides these facts we will use the Taylor rule and interest rate to describe the European interest rate policy from 1999 to 2009. In order to get a good benchmark for the description we calculated a Taylor interest rate based on data from the European Central Bank, OECD and the German "Sachverständigenrat zur Begutachtung der gesamtwirtschaftlichen Entwicklung". Afterwards the results are compared with the EONIA and EURIBOR to get some insights into the interest rate policy. The reason for using the EONIA and the EURIBOR is their good property as proxy for the real interest rate policy conducted by the European Central bank and their character as benchmark for a possible prospective interest rate policy. The following figure shows the comparison of EONIA, EURIBOR and Taylor interest rate from 1999 to 2009.



The figure clearly illustrates nearly a same process of all three interest rates. But it also shows that from 2000 till 2008 the Taylor interest rate is much higher than EONIA and EURIBOR. One can state that a neutral Taylor interest was exited only in year 1999 since all the interest rates were at the same level. Furthermore it is clear that this was the only year in which the European interest rate policy was not neither too expensive nor too restrictive. From 2000 till 2008 the Taylor interest lies above EONIA and EURIBOR which means that during this period the European interest rate policy was too expansive. For the year 2009 the opposite situation emerged. Here were EONIA and EURIBOR above the Taylor interest rate which was in fact negative. In this case the European interest rate policy can be interpreted as too restrictive. Summarizing the most important information shown in the graph it is evident that the European interest rate policy missed its Taylor interest rate benchmark every time except 1999. Therefore it is not possible to claim that the European Central Bank conducted a neutral interest rate policy concerning its inflation goal or the economic development in the Euro Area.

# INTRESSIMÄÄRADE MÕJU INVESTEERIMISOTSUSTE LE EESTI ETTEVÕTETE NÄIDETEL

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## Sissejuhatus ja ülevaade kirjandusest

Käesoleva artikli eesmärgiks on analüüsida erinevate mõjuritite olulisust ettevõtete investeerimisotsuste kujundamisel. Erinevatest mõjuritest on põhjalikumalt käsitletud intressimäärade mõju ettevõtete investeerimisotsustele. Kuna intressimäärad on rahapoliitika kujundamisel üks olulisemaid instrumente on intressimäärade mõju uurimine monetaarpoliitika mõjususe hindamisel olulise tähtsusega.

Neoklassikalise investeerimismudeli kohaselt ettevõtted investeerivad seni kuni investeerimisprojekti oodatav tulunorm on suurem või võrdne ettevõtte kaasatud kapitali hinnaga. Moonutusteta kapitalituru korral ettevõtete investeeringute maht on määratud üheselt kapitali hinnaga, mis on tihedalt seotud intressimääradega (Miller, Modigliani 1958). Samas intressimäärade mõju ettevõtete investeerimisotsustele võib olla mitmetähenduslik mõjutades nii kapitali hinda kui ka üldist nõudlust (Stiglitz 1973). Seetõttu on kapitali hinna mõjude uurimisel kasutatud erinevaid lähendusi. Erinevates varasemates uuringutes on kasutatud kapitali hinna lähenduses näiteks inflatsiooni ja inflatsiooniootusi (Huizinga 1993; Dewald 1998). Samuti on kasutatud lähendusena ettevõtete tulumaksu (Stiglitz 1973) või uuritud maksusoodustuste mõju investeerimisotsustele (Tanzi *et al.* 2000; Canh *et al.* 2004).

Olulise edasiarendusena eeltoodud käsitlusele on ettevõtete investeerimiskäitumine mittetäielike kapitaliturgude olukorras. Erinevatest asjaoludest tingituna (kõrged tehingukulud, informatsiooni asümmeetria kapitalituru osapoolte vahel vms) on ettevõtetele likviidsuspiirangud, mis omakorda mõjutavad oluliselt ettevõtete investeerimiskäitumist. Likviidsuspiirangute olemasolu ja mõju ettevõtete investeeringutele on uuritud läbi rahavoogude mõju investeeringutele, dividendide mõju investeeringutele, üldise finantskäitumise mõju investeeringutele (Fazzari *et al.* 1988; Love 2001; Cleary *et al.* 2007; Bopkin *et al.* 2009; Heshmati 2001).

Täiendavalt on leitud, et erinevates tööstusharudes on investeerimisotsuste mõjurititel erinev kaal (Wilkes *et al.* 2002; Ogawa *et al.* 2000). Samuti on olulised mõjuritite määramisel ettevõtete suurus (Love 2001; Fathi *et al.* 2007) ja omanike struktuur (Coergen *et al.* 2001; Fathi *et al.* 2007).

Erinevalt paljudest varajasematest uuringutest kasutatakse artiklis uurimismeetodina ettevõtete küsitlust. 200-le suuremale Eesti ettevõttele (v.a. finantsasutused) saadeti küsimustikud millele vastas 43 ettevõtet. Küsimustiku koostamise aluseks võeti J. M. Pinegar ja L. Wilbricht (1989) poolt koostatud sarnane küsimustik, mida kohandati Eesti oludele. Kuna suurematel ettevõtetele on paremad võimalused ja teadmised erinevatest kapitali kaasamise meetoditest ja investeeringute hindamise

metoodikatest, siis saadud tulemuste interpreteerimisel ja üldistamisel Eesti ettevõtetele tervikuna tuleb nimetatud asjaolusid rangelt silmas pidada.

### Uuringu tulemused

Uuring koosnes kolmest osast, milles esimeses paluti uuringus osalejatel hinnata nimetatud investeerimisotsuste finantseerimist mõjutavaid tegureid Likerti 5-pallisel skaalal. Saadud tulemused on toodud järgnevas tabelis.

**Tabel 1.** Investeerimisotsuseid mõjutavate tegurite ja printsiipide suhteline olulisus Eesti suuremates ettevõtetes

Tegurid ja printsiibid tähtsuse järjekorras	Mediaan <sup>a</sup>
Oodatav investeerimisprojekti rahavoog	4,74
Ettevõtte pikaajaline eksistentsi tagamine	4,67
Finantspaindlikkuse tagamine	4,33
Investeerimisprojekti riskantsus	4,28
Investeerimisprojekti suurus	4,02
Finantsilise sõltumuse säilitamine	3,95
Enamusosaluse säilitamine	3,70
Ettevõtte kasvudünaamika tagamine	3,56
Aktsionäride struktuuri säilitamine	3,37
Maksukaalutlused	3,16
Aktsiahinna maksimeerimine	3,12
Inflatsiooniootustega arvestamine	2,98
Amortisatsioon	2,70
Konkurentide finantsseisu arvestamine	2,58
Pankrotikulud	2,05

<sup>a</sup>Mediaan on arvutatud vastusevariantide põhjal, mis varieerusid 1<sup>st</sup> 5ni.

Tabelis toodud erinevate indikaatorite paremaks üldistamiseks on erinevad mõjurid grupeeritud. Grupeeritud tulemustest ilmneb, et olulisemad ettevõtete investeerimist mõjutavad tegurid on investeerimisprojekti üldine riskantsus, likviidsuspiirangutega seotud probleemistik ja üldine ettevõtjate/ettevõtete majandusosaldu. Kapitali hinnaga seotud mõjurid nimetatud mõjurite kontekstis ei domineeri. Kapitali hinna vähene olulisus ettevõtete investeringute kujundamisel teiste mõjurite hulgas on ilmnenu ka teistes varajases empiirilistes uuringutes (Bopkin *et al.* 2009; Kjellman *et al.* 1995; Pinear *et al.* 1989; Wilkes *et al.* 1996). Eraldi vääriks märkimist ettevõtete majandusosaldu olulisus investeerimisotsuste kujundamisel, mis võiks monetaarpoliitika mõjukanalite uurimisel Eestis olla tõsiselt arvestatud.

Uurimuse teine osa käsitleb põhjalikumalt intressimäärade mõju ettevõtete investeringutele ja juhtimisele. Põhjalikumalt on uuritud, kuidas ettevõtted käsitlevad intressiriske. Uuringust selgus, et 41 ettevõtet 44-st näevad intresside mõju läbi kasvavate finantskulude ja seeläbi ka mõjuna ettevõtte puhaskasumile. Vaid 3 ettevõtet käsitlesid intressiriske läbi mõju ettevõtte kapitali hinnale.

Samalaadne tulemus saadi ka ettevõtete intressiriskide juhtimise eesmärkide kohta, kus enamust vastanud ettevõtetest märkisid intressijuhtimise eesmärgina madalamaid finantskulusid või suuremat kasumit.

Passiivne kapitali hinna jälgimine ja kujundamine ilmneb ka teistes varajasemates empiirilistes uuringutes, mis kasutavad uurimustes küsitlusmeetodit (Dewald 1998; Love 2001; Wilkes 2002). Ilmneb, et ettevõtteid kasutavad investeerimisprojektide hindamisel kapitali hinda pikema aja jooksul ning muudatusi sellesse tehakse oluliselt harvem, kui finantskäitumise teooria seda eeldaks. Uuringus osalenud Eesti ettevõtete puhul tuleb veel arvestada, et 27% ettevõtetest olid olulises osas väliskapitaliga ettevõtteid ning 32% ettevõtetest kuulusid riigile või kohalikele omavalitsustele.

Uurimuse kolmas osa käsitleb likviidsuspiirangute olulisust ettevõtete juhtimises. Siin on palutud vastajatel märkida finantseerimisallikate eelistused vastavalt etteantud valikutele. Likviidsuspiirangute olemasolul peaksid finantseerimisallikates domineerima ettevõttesisesed finantseerimisallikad. Küsitluse tulemused on toodud järgnevas tabelis.

**Tabel 2.** Olulisemad finantseerimisallikad Eesti ettevõtetes tähtsuse järjekorras

Finantseerimise allikas	Mediaan
ettevõtte sisemised finantsallikad	6,79
pangalaenu	6,16
võlakirjade emissioon	5,00
aktsiaemissioon suunatud praegustele aktsionäridele	4,53
aktsiaemissioon suunatud strateegilistele partneritele	3,16
Konverteeritavad võlakirjad	3,05
Avalik aktsiate emissioon	2,26
Eelisaktsiate emiteerimine	2,21

Tabelis toodule võib lisada, et 65% vastanutest seadis esimeseks valikuks ettevõtte omad vahendid ja 16% vaid pangalaenu. Toodud tulemuste põhjal võib väita, et uuringus osalenud ettevõtteid on finantspiirangutega, mis omakorda mõjutavad oluliselt ettevõtete finantskäitumist ja investeerimisotsuseid.

Tugevaid finantspiiranguid on seostatud nii nõrgaltarenenud finantsüsteemiga ja kõrgete tehingukuludega (Cahn *et al.* 2004; Mickiewicz *et al.* 2004) kui ka erinevate ettevõtte enda arenguetappidega (Valderrama 2002). Tüüpilise näitena on kiirelt arenevad kõrge lisandväärtusega ettevõtteid, mis toote rakendusfaasis vajavad suuri investeringuid, mis omakorda põrkuvad sageli ettevõtte finantspiirangutele.

## Kokkuvõte

44 Eesti suurima ettevõtte (v. a. finantsasutused) investeerimiskäitumist ja sellega seonduvat finantskäitumist uurides saab väita, et investeerimist mõjutavad investeerimisprojekti üldise riskantsuse kõrval ettevõtete likviidsus ja üldine

majandusosaldu. Ettevõtte kapitali hinnal (intressimääradel sealhulgas) on investeringute tegemisele marginaalne roll.

Intressimäärade ettevõtete üldises juhtimises on üldse pigem ebaolulised küsimused. Intressimäärade juhtimise all peetakse silmas eelkõige intressimäärade mõju finantskuludele ja seeläbi ettevõtte kasumile. Intressimäärade mõju ettevõtte kapitali hinnale arvestavad üksikud ettevõtted.

Likviidsuspiirangud samas omavad Eesti ettevõtete finantskäitumisele (dividendimaksud jms) ja investeringutele suurt mõju. Suur osa ettevõtetest eelistavad investeringutel kasutada sisemisi finantseerimisallikaid. Likviidsuspiirangute olulist rolli ettevõtete finantskäitumises on varajasemates empiirilistes uuringutes käsitletud nii nõrgaltarenenud finantsüsteemiga kui ka erinevate ettevõtte enda arenguetappidega. Eesti ettevõtete likviidsuspiirangute põhjuslikkus ja edasine dünaamika vajab edaspidiselt põhjalikumaid uuringuid.



## TEADMUSSIIRE ÜLIKOOLOIDE JA MAJANDUSPRAKTIKA SUHETE ABIL: MÕNED ORGANISATSIOONIKULTUURILISED ASPEKTID

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Tartu Ülikool

Traditsiooniliselt on õpetamist loetud ülikooli rolliks juba keskajast. Teadustegevus sai ülikooli õigustatud funktsiooniks 19. sajandi lõpul ja 20. sajandi alguses. Seda muutust on nimetatud esimeseks akadeemiliseks revolutsiooniks. Nüüd, 100 aastat hiljem, on senistele ülikooli missioonidele – õppe- ja teadustegevusele – lisandunud kolmas – ühiskonna majandusliku ja sotsiaalse arengu toetamine. Viimast on nimetatud teiseks akadeemiliseks revolutsiooniks. Teise maailmasõja järgne intensiivne majanduslik ja sotsiaalne areng lõi ülikoolide, valitsuste ja ettevõtete vahelised alliansid „kasulike teadmiste“ tootmiseks, tõrjumaks välja traditsioonilist seisukohta, millele vastavalt teadlased olid autonoomsed looma teadmust „lõputult kasvavast heaolust“. Jõuti tõdemusele, et ülikoolid peaksid võtma pro-aktiivse rolli tänapäeva ühiskonna teadmussiirde protsessides. Näiteks, võrgustiku, raha ja talentide ühendamine Stanfordi teadusmootori ümber kujundas „Silicon Valley palaviku“ ning seda arengut peetakse üheks teadmussiirde väljapaistvaks juhtumiks.

Tänu süsteemsele muutusele üleminekul käsumajanduselt turumajandusele said ülikoolid uue rolli, eriti olukorras, kus ka Eesti ettevõtjad vajavad professionaalset abi innovaatiliste toodete ja innovaatiliste organisatsioonide arendamiseks. Kuna ülikoolidel oli Nõukogude Liidus peamiselt koolitaja roll, võib vastav kultuur domineerida nendes organisatsioonides ka tänases päevas. Kultuuri kujundamisel ja juhtimisel on suur mõju kogu organisatsiooni efektiivsusele (sh teadmussiirde osas) ja seetõttu on hakatud organisatsioonikultuuri tähtsustama ka paljude praktikute ja juhtide poolt. Seega on vajalik välja selgitada organisatsioonikultuuri aspektid, mis võivad mõjutada majanduspraktikale suunatud teadmussiirde protsesse ning seeläbi on võimalik tõhusamalt juhtida teadmussiirde mitmetahulist protsessi.

Ülikoolide ja teiste kõrgkoolide rolli teadmussiirdes siirderiikides on uuritud väga vähesel määral, eriti seoses väikeriikide tingimustes. Käesolev artikkel keskendub organisatsioonikultuuri aspektidele, mis omavad olulist rolli ülikooli teadustöö kommertsialiseerimises ülikoolide teadmussiirde ja teadmistepõhise ühiskonna raames Eestis. Teadmusvahetus ja kommertsialiseerumine sõltub organisatsioonikultuuri kui organisatsiooni sisekeskkonna elemendi iseloomust. Kahte Eesti suurimat ülikooli – Tartu Ülikooli (TÜ) ja Tallinna Tehnikaülikool (TTÜ) analüüsi teadmussiiret mõjutavate tegurite kaudu, kasutades dokumendialüüsi ja intervjuusid.

Nimetatud ülikoolid, mis asuvad regionaalsete klassifikatsioonide alusel Eesti eri piirkondades, omavad palju sarnasusi teadmussiirde või kõrgkooliteaduse kommertsialiseerumise eelduste olemasolu osas. Seetõttu uuringud nende ülikoolide teaduse kommertsialiseerumise valdkonnas tõstatavad laiemaid küsimusi ülikoolide kolmanda missiooni kohta väikeses postsovetlikus riigis. Need küsimused on ühised ka naaberriikide ülikoolidele, võttes arvesse nende sarnast ajalooline taust. Koostöö

kõrgkoolide ja majanduspraktika vahel on sageli mõjutatud välistest teguritest, nagu sotsiaalsest nõudlusest, õiguslikust raamistikust, piisavast teaduse rahastamisest jne. Kuid ka rida organisatsioonisiseseid tegureid, sealhulgas organisatsiooni ja juhtimise kultuur, akadeemilise töö olemus, mõjutavad teadmussiiret.

Miks on oluline uurida organisatsioonikultuuri parandamiseks teadmuse juhtimise ja vahetuse tõhusust? Käesolevas uurimuses näitab, et teadmussiire hõlmab erinevaid aspekte ja eriti pehmetes valdkondades (individuaalne meelelaad ja organisatsiooni väärtused) võib ülikoolides esineda olulisi erinevusi.

Esiteks, kui organisatsioonikultuur/organisatsiooni väärtused on hästi mõistetavad, siis saame edukamalt kaasa aidata teadlikkuse tõstmiseks organisatsioonis olemasoleva teadmuse kohta. Organisatsioonikultuuri tajumise erinevuste mõistmine võib üsna tõenäoliselt anda parema ülevaate ebarahuldava teadmusvahetuse põhjustest.

Teiseks, teadmusvahetus on oluliselt tõhusam kui inimeste erinevusi on mõistetud ja arvesse võetud, ning kolmandaks, organisatsioonikultuur levib organisatsioonis nii teadlikult ja alateadlikult näiteks organisatsiooni liikmete vahelise suhtlemise kaudu. Seega võime järeldada, et organisatsioonikultuuri eri aspektid võivad mängida olulist rolli ettevõtetele ja ühiskonnale suunatud teadmussiirde protsessides.

Dokumentide analüüsi alusel võib öelda, et mõlemal ülikoolil on rahvusvaheliselt konkurentsivõimeline teadustegevuse tase ja oluline koht Eesti teaduses. Lisaks näitasid tulemused, et olulised eeltingimused ülikooli teadustegevuse edukaks kommertsialiseerimiseks on mõlemal juhul täidetud ning sellele mõjutavate tegurite uurimine on seega võimalik.

Viisime läbi empiirilise analüüsi, et võrrelda arusaamu ülikooli teadustegevuse kommertsialiseerimise ja selle mõjutegurite osas. Meie uuring tõi välja järgmised olulisemad aspektid.

Esiteks, väikeriigi ülikoolid ei eristu teadusuuringute kommertsialiseerimisel geograafilise asukoha alusel. Küll aga märgiti infrastruktuuri tähtsust – kuna TÜ asub ca 200 km kaugusel rahvusvahelistest lennujaamadest võib see kujuneda teatud takistuseks rahvusvahelisele koostööle.

Teiseks, peamised erinevused ülikoolides on seotud organisatsiooni väärtuste ja traditsioonidega. Võrdlemaks TÜ ja TTÜ väärtusi ja tavasid, on läbi viidud erinevaid uuringuid. Näiteks Jaakson (2008) uuris üliõpilaste arvamusi organisatsiooni väärtustest. Kuna üliõpilased on oluliseks ülikoolide sidusrühmaks, andis see uuring hea pildi organisatsiooni väärtustest. TTÜ üliõpilased märkisid, et innovatiivsus ning sellest tulenevalt kaasaegsed rakendused, uudsed lahendused ja algatusvõime on nende ülikooli kõige olulisemad väärtused. TÜ osas kujutasid kaks gruppi – traditsioonid ja järjepidevus ning akadeemiline atmosfäär – väärtusi, mis eristab TÜd teistest ülikoolidest ja eriti TTÜst.

Kolmandaks, ülikoolide ja ettevõtete koostöö tegureid uuriti intervjuude kaudu, kus küsitleti nii ülikoolide kui ka kahe äriühingu, millel on koostöösuhted mõlema ülikooliga, juhtivaid spetsialiste. Analüüsi tulemusena jõudsimme järeldusele, et organisatsiooni sisekeskkond (organisatsioonikultuur) on ülikooli-praktika vahelise koostöö puhul olulisem tegurgrupp kui väliskeskond. Meie analüüs näitas, et firmad teevad TÜga enamasti koostööd alusuuringute (ideede genereerimine) vallas, samas kui TTÜga tehakse koostööd peamiselt rakendusuuringute valdkonnas. See aspekt võib tunduda ebaolulisena, aga kui paneme selle organisatsiooni väärtuste konteksti, saab seda tõlgendada nii organisatsioonikultuur kui väärtuste erinevusena. Eelpool toodu näitas, et Tartu Ülikool on suunatud rohkem traditsioonidele, samal ajal kui TTÜ enam praktilistele aspektidele. Seega võime järeldada, et töökultuuri ning inimsuhted ja kommunikatsioon võivad mängida teadmussiirde protsessis olulist rolli. Nende arvestamine võib anda märkimisväärset tulemit, sest asjakohased suhted võivad julgustada tihedale ja usaldusväärsele koostööle.

Neljandaks on vajalik välja töötada infosüsteem, mis annab kõikse ülevaate teostatud rakendusuuringutest (ülikooli – ettevõtete ühiste teadustegevuste ja -projektide kohta). Rakendusuuringute seisukohalt sobiva teabesüsteemi puudumine ei võimalda ressursse tõhusalt rakendada, sest informatsiooni vaeguse tõttu esineb tegevuste dubleerimist.

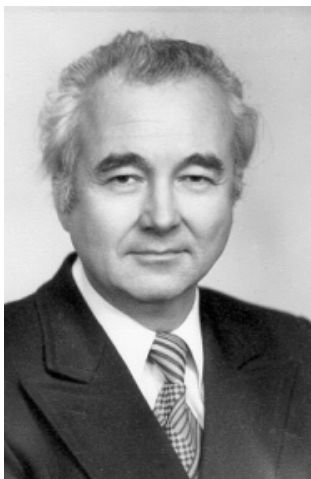
Meie uuringud näitasid, et ühelt poolt, väärtused ja uskumused, mis rakendati pikaajalise arengustrateegia osana mõjutavad ülikoolide-sisest mõistmist, ent teisest küljest kujundavad ülikoolide reputatsiooni ja mainet organisatsioonides ja ühiskonnas väljaspool ülikooli. Seega võivad üheks kommertsialiseerimise barjäärriks olla stereotüüpsed hoiakud akadeemilise elu suhtes. Ülikooli tegevuste ja ülikooli – ettevõtete teadmussiirde aspektide ning tegurite analüüs võimaldab meil arendada soovitusi, kuidas ülikoolid saaksid arendada teadmussiirde protsesse nii kvantiteedis kui ka kvaliteedis.

**KROONIKA**

**CHRONIK**

**CHRONICLE**

**AKADEEMIK, PROFESSOR UNO MERESTE**  
**(27.05.1928–06.12.2009)**  
**IN MEMORIAM**



Prof. **UNO MERESTE** on läbi aegade üks kuulsamaid majandusteadlasi – suurkuju, kes peale majandusteaduse on jätnud sügava jälje ka õigusloomesse, geograafiasse, eesti keelde, sotsiaalteadustesse, rahvastiku demograafiasse, rahandusse, pangandusse, riigijuhtimisse jm. Iga uuringuga kaasnesid tema artiklid, brošüürid või raamatud, kus probleemid said lahti räägitud ja väljapakutud lahendused korralikult argumenteeritud. Iga lahenduse juurde pöördus ta tagasi seni, kuni tundis oponente end mõistvat. Pärandina jättis ta endast maha suurepärase kirjutiste kogu, mille poole igäiks meist vajaduse korral alati võib pöörduda.

Uno Mereste laialdaste teadmiste põhipagas pärineb järgmistest allikatest:

**1936-1942** Tallinna Linna Poeglaste I Algkool;

**1942-1946** Tallinna Poeglaste Kaubandus- ja Kommertsikool, mille kaks viimast klassi lõpetas ta ühe aastaga ajal, mil see kool nimetati ümber Tallinna Rahandustehnikumiks;

**1942-1944** õhtuti Kutsekogude Keskliidu Tallinna Rahvaülikool, kus ta kuulus Johannes Aaviku ja Karl Mihkla loenguid eesti keelest ja kirjandusest ning dr. Kirschbaumi loenguid psühhoanalüüsist;

**1946** Tartu Ülikooli ajaloo-keeleteaduskond (üks aasta õpinguid);

**1946-1950** Tallinna Polütehnilise Instituudi majandusteaduskond, mille lõpetas rahanduse erialal;

**1951-1954** mittestatsionaarselt Tartu Ülikooli matemaatika-loodusteaduskond füüsilist geograafiat õppides. Samal ajal ja ka hiljem õpetas ta ise Tallinna Rahandustehnikumis rahanduslikke eriaineid ja seejärel Tartu Ülikooli majandusteaduskonnas kaubandusökonomika kateedris majandusanalüüsi, keskendudes majandusanalüüsi probleemide formaliseeritud käsitlemisele, sealhulgas matemaatiliste meetodite rakendamisele. Õpetada tuli ka raamatupidamist ja mitmesuguseid statistikakursusi;

**1957-1958** õpingud Moskva Rahvamajandusinstituudi aastases aspirantuuris lääne-meelse juhendaja prof. N. Družinini juures;

**1961** kandidaaditöö kaitsmine teemal: „**Nähtuse absoluutse juurdekasvu tegurite vahel jaotamise probleem ja selle lahendamine majandusstatistikas**“.

Jälgides tema õpingute loetelu, on kerge vastata küsimusele, kust küll pärinevad Uno Mereste erakordselt lai silmaring, huvid, teadmised ja eruditsioon. Tema enda vastus on tagasihoidlik: „Raamatutest, eks ikka raamatutest!“

1964 asus Uno Mereste põhikohaga tööle TPI statistika ja raamatupidamise kateedrisse, „pärides“ selle juhatamise prof. Juhan Vaabelilt, kes samal aastal oli siirdunud Eesti TA asepresidendi kohale. U. Mereste 11 valitsemisaasta jooksul:

- Korraldati sisuliselt ümber õppeplan;
- Kujundati uus, kõrgema kvalifikatsiooniga raamatupidamise õppejõudude kaader, kus tähelepanuväärsemate värvatute hulka kuulusid nn „kolm elevanti“: **Frank Grüner** – entsüklopeediliste teadmiste ja legendaarse ametialase karjääriga raamatupidamise praktik, imetlusväärne lektor. **Ain Ruuvel** – TÜ üks paremaid raamatupidamise asjatundjaid, legendaarne ülinõudlik õppejõud, kelle nime meenutavad siiani rahulolevate lõpetajate anekdoodid. **Erik Linnaks** – juba 1962. a majandusteaduste kandidaat. Tööle asus ta kohe dotsendina, ning valmistus doktorikraadi kaitsmiseks – esimene tulevane raamatupidamise doktor Eestis. Lisaks noorendati kateedrit oluliselt õpiahimuliste eriala lõpetajatega, keda sai suunata Moskvasse ja mujale kraadiõppesse või siis täiendõppesse.
- Raamatupidamises võeti kasutusele uus süstematiseeritud ja skematiseeritud õpetamise meetodika ja alustati aktiivselt raamatupidamisalase teaduslik-meetodilise uurimistööga.

Ilma Uno Mereste tulemusriikka õppejõudude koosseisude revolutsioonita oleks raamatupidamise eriala õpetamine TPIs kardetavasti kauaks virelema jäänud, kui mitte päris „kokku kuivanud“.

Paralleelselt tööga kateedris, süvenes Uno Mereste teaduslikesse probleemidesse, mis töötasid viia doktorikraadini. Doktoritöö teemaks kujunes: „**Indeksmeetodi rakendamine majandusanalüüsis. Teoreetilis-metoodiline uurimus**“. Teema originaalsust põhjendas Uno Mereste vajadusega käsitleda teaduses järgmisi probleeme:

- Luua teooria tegurindeksite duaaltõlgendusele, st tõlgendada neid kahes eri tähenduses: üldistavas ja analüütilises;
- Lahendada nähtuste absoluutse juurdekasvu tegurite koosmõjul tekkiva täiendava osajuurdekasvu jaotamise probleem proportsionaalselt nende isoleeritud mõjuulatusega, mis annab hoopis teisi tulemusi kui seni selleks otstarbeks kasutatud ahelasendusmeetod;
- Uurida keerulise struktuuriga mitmetasandiliste nähtuste struktuuri ja nendes toimuvate nihete mõju mõõtmist. Töötada välja superindeksite teooria.

**Doktoritöö kirjutamisele eelnesid 8 temaatilisi monograafiat** statistika (indeksteooria) ja majandusanalüüsi kohta mahus ca 903 lk ja 23 artiklit teaduslikes kogumikes kokku mahus ca 520 lehekülge, mis kõik olid seotud dissertatsiooni temaatikaga. sh:

- Majandusliku analüüsi mõisteid ja meetodeid. Tallinn: Eesti Raamat, 1965, 96 lk;
- Keskmised ja variatsiooninäitarvud. Tartu: TRÜ, 1965, 142 lk;
- Võrkanalüüs majandusettevõtete juhtimises. Tallinn: Eesti Raamat, 1967, 164 lk;
- Statistika üldteooria. I, II ja III osa. Tallinn: TPI, TRÜ, 1967, 367 lk;
- Täiendavaid peatükke majandusliku analüüsi kursusele. Tallinn: TPI, 1969, 108 lk;

- Kaubandusstatistika I ja II osa. (Kaasautorid S. Straž ja V. Volt), TRÜ, 1972-1973, 356 lk;
- Statistika üldteooria. (Kõrgkooliõpik) Tallinn: Eesti Raamat, 1975, 496 lk.

Hiljem, 1978, sai viimane neist raamatutest, Statistika üldteooria (kõrgkooliõpik 1975), ENSV Teaduste Akadeemia ja Eesti Teaduslik-Tehnilise Ühingu Nõukogu (ETTÜNi) A. Veimeri preemia ning jäi aastateks majandusteaduskondade üliõpilastele põhiliseks statistika õppevahendiks.

**1959-1977** aastate Uno Mereste teaduslike tööde loetelu sisaldab 29 monograafiat ning 81 artiklit, mis on avaldatud vabariiklikes ja üleliidulistes väljaannetes. Teaduslike tööde maht oli sel perioodil ca 340 autoripögnat. Mitmeid neist autasustati auhindadega.

**1969.** a valmis Uno Mereste doktoritöö ja 15.veebruari 1970 kaitses ta seda ENSV Teaduste Akadeemias. 28. aprillil 1972. omistati talle NSVL Kõrgema ja Keskerihariduse Ministeeriumi Kõrgemas Atesteerimiskomisjonis **majandusdoktori teaduskraad ning 1973. a ka professori kutse.**

**Ühiskondliku töö korras** täitis prof. U. Mereste järgmisi, nii instituudi siseseid kui ka väliseid kohustusi olles:

- TPI nõukogu liige ja TPI Majandusteaduskonna nõukogu liige;
- ETTÜN ökonomika komitee esimees ning hiljem, pärast selle reorganiseerimist Majandusteaduste Seltsiks 1982-1987 seltsi esimees;
- ENSV TA Majanduse Instituudi nõukogu liige;
- ENSV TA Ühiskonnateaduste osakonna majandus- ja õigusteaduste nõukogu liige;
- ENSV MN Statistika Keskvalitsuse ekspertiisinõukogu liige;
- Ajakirja Horisont toimetuskolleegiumi liige;
- Eesti Raadio Majandusklubi nõukogu liige; Eesti Teadus- ja Tehnikaühingute Nõukogu Ökonomika Komitee esimees;
- ENSV Riikliku Plaanikomitee MPTUL-i teadusliku nõukogu liige;
- ENSV Kõrgema ja Keskerihariduse Ministeeriumi Teaduse ja Tehnika Nõukogu kõrgkoolide sektsiooni liige;
- ENSV Kõrgkoolide Rektorite Nõukogu asjaajamise lihtsustamise komisjoni esimees;
- Valimiste ringkonnakomisjoni liige;
- Aastaraamatu: Majandusteadus ja rahvamajandus toimetuse kolleegiumi esimees;
- ÜTÜ Vabariikliku Nõukogu liige;
- ENSV KKHMTN kõrgkooli probleemide sektsiooni ja vabariikliku kogumiku Kõrgkoolipedagoogika probleemid kolleegiumi liige;
- Kõrgkoolidevahelise statistikaalase teaduslike tööde kogumiku toimetuskolleegiumi esimees;
- ENSV Ühingu Teadus välissidemete teadusliku metoodikanõukogu liige.

Uno Mereste jätkas statistika ja raamatupidamise kateedri juhatajana kuni 1975. aastani, kokku 11 aastat. Juunis 1975 poolitati statistika ja raamatupidamise kateeder statistika kateedriks ja raamatupidamise kateedriks. Prof. Uno Mereste valiti vastmoodustatud statistika kateedri juhatajaks, kus ta jätkas pidevalt kuni emeriteerumiseni 1997. Tänu talle oli raamatupidamise eriala TPis uuele elule päästetud. Iseseisvat Raamatupidamise kateedrit asus juhtima värske majandus-teaduste kandidaat Kaido Kallas.

**1994** sai prof. Uno Merestest **Eesti Teaduste Akadeemia akadeemik (humanitaar- ja sotsiaalteadused)**.

**Uno Mereste on alati leidnud aega riigiprobleemidega tegelemiseks:**

- **1988-1989** oli ta Eesti Rahvavolikogu liige ja Rahvarinde I Kongressi üks juhatajaid;
- **1989-1992** oli ta nõunikuks Eesti NSV Riiklikus Plaanikomitees ja EV Majandusministeeriumis majandusreformide ettevalmistamisel ja hiljem käivitamisel;
- **1991-1997** Eesti Panga Nõukogu liikmena ning esimehena võttis ta osa Eesti rahastusteemi taasloomisest ja rahapoliitika kujundamisest, eriti pangandust reguleerivate seaduseelnõude, sh Eesti Panga seaduseelnõu kujundamisest;
- **1992-2003**, kolmel valimisperioodil oli ta Eesti Riigikogu liige, sh 1996-1999 Tallinna Linnavolikogu liige.

**Prof. Uno Mereste originaalsete teaduslike uurimistulemuste koondloetus** on paljud saavutused rakendatavad mitte ainult majandus- vaid ka tehnilistes- ja humanitaarteadustes.

Koondandmed TTÜ Teoreetilise ja metodoloogia instituudi teadusliku uurimistöö aruandest räägivad järgmistest saavutustest:

- **Kogumite struktuuri ühtluse kordaja konstrueerimine**, mis võimaldab numbriliselt mõõta mistahes kogumi struktuuri erinevust ideaalselt ühtlasest struktuurist (1967).
- **Nähtuste absoluutse juurdekasvu rohkem, kui kahe teguri vahel jaotamise meetodi loomine**, milles tegurite üheaegsel koosmõjul tekkinud täiendav osajuurdekasv jaotatakse proportsionaalselt nende isoleeritud osajuurdekasvudega (1983). Kasutatakse toodangu ja muude majanduslike resultaatnähtuste mahus tekkinud muutuste põhjuste analüüsimisel. Võimaldab vältida mõningaid varasematele meetoditele iseloomulikke vastuolusid.
- **Multiplikatiivsetest teguritest koosnevate tegurisüsteemide loomise ja teisendamise ning nende alusel paljuteguriliste analüütiliste indeksite tuletamise meetodika väljatöötamine (1961)**. Võimaldab tavaliselt kahe teguri läbilõikes tehtavat indeksanalüüsi avardada piiramatult arvu tegurite üheaegse mõju uurimiseni.
- **Agregaatindeksite duaaltõlgendamine**, nende üldistava ja analüütilise tähenduse eristamine ja indeksite neis tähendustes kasutamise võimaluste piiritlemine, mis võimaldab konkretiseerida analüüsitulemuste tõlgendusi ja vältida eksimusi järelduste tegemisel.



- **V. V. Novožilovi dilemma lahendamine.** Indeksiteooria arengut pikemat aega häirinud vastuolu eri liikide indeksite definitsioonide, nendega uuritavate objektide ja tegeliku kasutuse vahel. See osutus lahendatavaks kogumite senisest erineva klassifitseerimise teel lähtudes nende sisestruktuurist.
- **Superindeksite teooria loomine.** Teooria indeksitest, mis võimaldavad uurida (numbriliselt mõõta) nähtuste struktuuris toimunud muutuste mõju korraga mistahes arvu struktuuritasanditel ja tagada saadavate tulemuste omavahelise võrreldavuse. Varasemad struktuurinihete indeksid võimaldasid mõõta struktuurinihete mõju ainult ühel nihketasandil. Superindeksite teooriat on oma doktoritöödes ja mõnedes muudes publikatsioonides arendanud edasi prof. V. Vensel ja prof. S. Straž.
- **Teoreetiliste aluste loomine kvalitatiivsete kompleksnähtuste modelleerimiseks multiplikatiivsetest elementidest koosnevate maatriksmodelite vahendusel.** Korrutatavatest elementidest koosnevate maatriksmodelite esmakordne kasutuselevõtt eriti raskesti hõlmatavate kvalitatiivsete liitnähtuste (nt. majanduslik efektiivsus ja integraaltööviljakus jt.) modelleerimisel ja analüüsimisel. Multiplikatiivsetest elementidest maatriksmodelite teooria ja selle kasutamise kohta avaldatud tööde täielik bibliograafia hõlmab ca 150 nimetust.
- **Efektiivsusvälja teooria loomine.** See on teooria majanduslikust efektiivsusest kui kvantitatiivsete majandustulemuste vaheliste proportsioonide täissüsteemsest hulgast, mis eitab traditsioonilist käsitlust, nagu tuleks efektiivsust mõista ainult kahe suuruse – efekti ja kulude või investeeringute suhtena.
- **Teadusliku näitarvuteooria loomine.** Näitaja mõiste sidumine kaasaegse mudeliteooriaga, mille puhul näitajat e. näitarvu käsitatakse nähtuse üheparameetrilise mõõtmismudelina.
- **Käsituse põhjendamine statistikast, kui ühiskonna ja loodusteaduste vahelisest integratsiooniteadusest.** Nõukogude võimu perioodil levitatud nn. marksistlik-leninlikku käsituse, mille kohaselt statistikat peeti puhtalt ühiskonnateaduseks, eitav kontseptsioon. Selle seisukoha vastu alustati NSVL ajakirjas Vestnik statistiki 1975. aastal diskussioon, mis kestis kaks aastat. Mõttevahetus lõppes traditsioonilise nõukoguliku arusaama ainuõigeks kuulutamisega.
- **Kahekontsentrilise paljutasandilise teadusmodeli väljatöötamine** ja rakendamine mõnede teaduste, s.h. statistika, geograafia, demograafia jt. aktuaalsete metodoloogiliste probleemide lahendamisel.
- **Süsteemse rahvastikumodeli loomine.** Rahvastiku polüstruktuursuse printsiibist lähtuv käsitlusmudel, mis võimaldab kaasaegse süsteemiteooria rakendustele toetudes lahendada mitmeid varem kas lahendamatuena või väga keerulistena tundunud teoreetilisi küsimusi.
- **Geosüsteemi mõiste edasiarendamine süsteemiteooria alusel** ning selle universaalse rakendamise põhjendamine mitte ainult loodus- vaid ka ühiskonna-geograafias.
- **Teoreetilise ja matemaatilise geograafia koha ja ülesannete määramine geograafias, kui ühtse teaduse süsteemis.**
- **Sotsiaalgeograafia mõiste ja rolli määramine ühiskonnageograafia süsteemis.**

- **Keeledemograafia aluste rajamine.** Demograafia ja keeleteaduse kokkupuutealal paiknevat probleemide seostatud käsitlemine. Keeledemograafia mõiste kasutuselevõtt ning rahvaloendustel keeleoskuse ja rahvuse kohta kogutud andmetel keeledemograafilise rahvastikumudeli esitamine.
- **Teaduslike terminite loomisest rakendatava ületuspõhimõtte formuleerimine.**
- **Ajalooliste aegridade rekonstrueerimise meetodi kasutuselevõtmine.** Originaalne meetod ajalooliste protsesside tõenäolise kulu (kulgemise) taastamiseks aegridade näol, mille koostamiseks on arhiivides säilinud ainult lünklikke andmeid. Selle meetodi – ajalooliste aegridade rõhhtaastamise – ehk lühemalt ART-meetodil on taastatud Tallinna elanike arvu muutumine 18. sajandil.
- **Rahvamajanduse kolmemõõtmelise mudeli ja territoriaalse isemajandamise teooria loomine.** Teoreetiliste üldistuste süsteem, mis võimaldas väita, et nõukogude majandussüsteem, milles peeti oluliseks ainult kaht – rahvamajanduse sotsiaalset ja ametkondlikku parameetrit – oli puudulik ega võimaldanud majandusel optimaalselt areneda, sest selles ei arvestatud iseseisvat ja mitmeti määravat tähtsust omavat kolmandat – majanduse territoriaalset parameetrit. Loodud teooria võimaldas argumenteerida majandusliku iseseisvuse taotlusi ja osutus seega kasulikuks Eesti täieliku iseseisvumise eest peetavas võitluses.
- **Omandiõiguse järjepidevuse ja eraomandi taastamise ning omandikaotuste hüvitamise süsteemi loomine.** Põhimõtete kogum, mida rakendada turumajandusele üleminekuks vajalike omandisuhete kujundamisel ning nendele vastav meetmestik.
- **Eesti rahasüsteemi taastamise metodoloogiliste aluste ja meetmestiku loomine.** Eesti Vabariigi rahareformi kontseptsiooni valjatöötamiseks moodustatud valitsuskomisjoni tööst osavõtu käigus kujundatud põhimõtete ja abinõude süsteem, millest osa leidis tegelikku rakendamist Eesti krooni käibeelaskmisel.
- **Eesti keele, kui tunnetusvahendi rolli selgitamine teaduslikus (eriti sotsiaalteaduste alases) uurimistöös ja eesti oskuskeele teadusliku tõhususe suurendamine.** Uuringuid rahvuskeele missioonist maailmateaduses ja detailkäsitlusi eesti teaduskeele tunnetusliku rolli tõstmisest ning semiootika ja süsteemiteooria rakendamisest sel eesmärgil.

Prof. Uno Mereste on alati sügavat huvi tundnud kõige inimlikumate probleemide vastu ja püüdnud neid lahendada kasutades ära oma laia silmaringi ja õpetatust. 1994-1998 arvukad publitseeritud artiklid aastatel puudutavad:

- **Eesti rahvastiku ja selle püsijäämise probleeme.** Ta on defineerinud rahvastikuteaduse aine ja struktuuri ning määranud ajaloolise demograafia koha teaduste süsteemis; visanud pilgu rahvastikuteaduse nüüdisseisundile ning Eesti rahva vanuselisele struktuurile, mis näitab ilmseid vananemise tendentse.
- **Eesti keeleprobleeme: keelelist assimilatsiooni ning muutusi eesti keele valdajaskonnas.** Ta uurib semiootiliste tasandite kasutamist majandusteaduste käsitlemisel. Kõrgendatud tähelepanu all on tema artiklites seadusloome keel, mis U. Mereste järgi ootab kultuuriavalikkuse mõjusat sekkumist – seadus olgu selges eesti keeles. Ta püstitab seaduste sõnastamisele minimaalsusnõuded;

seadust nimetab ta mitte lihtsalt juriidiliseks dokumendiks, vaid keele kaudu kultuuriilminguks, seaduse tõlgendamisel eeldab ta aga eelkõige teksti mõistmist.

- **Geograafiat ja selle ühtsuse probleeme teaduste üldise integratsiooni taustal:** geograafia aine süsteemkontseptsiooni kujunemise küsimusi; metageograafia, matemaatilise geograafia ja teoreetilise geograafia perspektiive ja edasise arengu piire; rahvastikugeograafiat kaasaegses teadustesüsteemis; ühiskonnageograafia süsteemkontseptsiooni.
- **Rahasüsteemi ja pangandust pärast Eesti Panga seaduse vastuvõtmist.** Ta kinnitab, et Keskpangal peab olema mõnesuguseid eridõigusi – see on kogu rahva huvides; samas selgitab ta Keskpanga ja panga Nõukogu rolli Eesti rahapoliitikas; tema poolt on koostatud ka üks Eesti Vabariigi rahareformi kontseptsioonidest kogumikku „Oma rahale ülemineku kontseptsioonid“.
- **Erastamise, maareformi ja omaniku kaotuste hüvitamise põhimõtteid ning võõrandatud omandi kompenseerimise metodoloogilisi printsiipe.** Tema seisukoht on, et taaserastamine eeldab arukat sotsiaalpoliitikat ning ajalookogemuste arvestamist erastamise korraldamisel. Hoiatavalt suhtub ta haldusreformi, mis tema sõnul ei tohiks maareformi varjutada. Kriitiliselt suhtub ta maapoliitikutesse, kelle jalga on tema sõnul maaelu piduril jpm.

**Akadeemik, prof. Uno Merestele omistatud arvukatest tunnustustest tähtsamad on:**

- ENSV Teaduste Akadeemia ja Eesti Teaduslik-Tehniliste Ühingute Nõukogu A. Veimeri preemia 1978;
- NSV Liidu Rahvamajandussaaduste Näituse pronksmedal 1978;
- Eesti NSV riiklik preemia tootmise majandusliku tõhususe maatriksmodelleerimisel põhineva kompleksanalüüsi automatiseeritud süsteemi väljatöötamise ja rakendamise eest 1987;
- „Majandusmõtte“ rändauhind 1988;
- Soome J. V. Snellmani medal 1998;
- Eesti Vabariigi Valgetähe III klassi teenetemärk 1997;
- Eesti Teaduste Akadeemia medal 1998;
- TTÜ suur teenetemedal MENTE ET MANU nr 4, 1998;
- EBS-i audoktor 1998;
- Akadeemik F. J. Wiedemanni nim. eesti keele auhind 1999;
- Piritä linnaosa Aasta inimene 2002;
- Eesti Geograafia Seltsi auliige 2003;
- Püha Brigitta teenetemärk 2003.

*Prof. U. Mereste publikatsioonide ja suuliste esinemiste keelekasutus ja teadustööde vormistus olid meeldejäädvalt eeskujulikud. Samas tegi ta tähelepanuväärselt palju selleks, et ka üliõpilased ja teised õppejõud nendest eesmärkidest juhinduksid. Ta avaldas mitmeid üliõpilastööde vormistamise juhendeid. Märkigem siinkohal 1969. aastal juba kolmanda trükina ilmunud 152-leheküljelist „Üliõpilastööde koostamise meetodidest“. 1985. aastal avaldas ta sama mahuka „Teadustöö alused: valitud küsimusi teaduse teooriast ja metodoloogias üliõpilastele“. Koos kolleeg Maimu Saareperaga koostas ta õigupoolest kõikide teadusharude tarbeks hindamatu*

käsiraamatu „Arvjoonised“, mis ilmus 1983. aastal kirjastuses „Valgus“. Vaadates tänastes üliõpilastöodes arvjooniste kasutamise vähesust ja üheülbalisust (üksnes joon-, tulp- või sektordiagrammid) ning sedagi, et selgelt tabelina vormistatud tekstiosa pealkirjas kasutatakse hoopis tunnussõnana joonist, siis tõded paratamatult – viimane raamat tuleks uuesti välja anda.

Prof U. Mereste huvid ei piirunud üksnes teadusega ja ülikoolieluga. Noorpõlves harrastas ta (eriti koos sõber Hans Jalastoga) purjetamist. Muuhulgas toimetas ta 1980. aastal kirjastuses „Valgus“ ilmunud Arvet Tetsmanni kolmes (eesti, inglise, saksa) keeles koostatud „Purjetaja sõnaraamatu“. Palju aega ja energiat jagus tal oma Merivälja kodumaja ja -aia hooldamiseks.

Huvitavad ja arendavad olid temaga koosveedetud tunnid mõnes kohvikus või nt tol ajal populaarses Inseneride Majas. Prof U. Merestega suhelnud inimestele ei saanud jääda märkamatuks tema suur lugemus. See oli hämmastav, kuidas ta venivatel koosolekutel jm sellistel üritustel aega ratsionaalselt kasutades istus ja mõnda (enamasti teistele isegi kaanepildi järgi tundmatut) raamatut luges. Sageli tegi ta väikestele paberilehekestele oma mõtetegevusest märkmeid, mida aforismide kogumikena avaldanud kirjastus SE&JS nagu „Herilaspesa: mõttekilde ja kildmõtteid“ (2005) või „Vihmapisad: kildmõtteid ja mõttekilde: 1975-1990“ (2009).<sup>1</sup>

Prof. U. Mereste elulooline tegevus vajaks palju enam kirjamahtu, kui seda käesolev artikkel võimaldab. Ta lõi oma koolkonna. Tema arvukate publikatsioonidega (ca 1 500 üksust) on võimalik tutvuda internetis raamatukogudevaheliste andmebaaside ESTER ja PUBL vahendusel. Tema hoiatused ja targad ideed saadavad ja abistavad meid veel paljude aastate jooksul. Täname prof. Uno Merestet kaasteeliseks olemise eest paljude aastate vältel. Eesti rahvale on Uno Mereste lahkumine suureks kaotuseks.

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Veebruar 2010

Inga Lõokene  
(Tallinna Tehnikaülikool)

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<sup>1</sup> Kaldkirjas tekst on täiendavalt kirjutatud Sulev Mäeltsemehe poolt.

**AKADEMIKER PROF. UNO MERESTE**  
**(27.05.1928–06.12.2009)**  
**IN MEMORIAM**

Prof. Uno Mereste war ein herausragender Wirtschaftswissenschaftler und Entwickler der Wissenschaft. Er wird zu den bekanntesten Autoren in Baltikum und auch außerhalb gezählt wegen seiner universellen Matrixmodellkonzeption, die er in den Jahren 1980-1990 für die Finanzanalyse der Volkswirtschaft und Unternehmen erstellt hat. In dem Artikel werden noch 22 originelle wissenschaftliche Leistungen von Uno Mereste aufgezählt und beschrieben, die alle nicht nur in der Wirtschaft, sondern auch in technischen und Geisteswissenschaften einsetzbar sind.

Prof. Uno Mereste beendete 1950 das Polytechnische Institut Tallinn als Ökonomist mit dem Finanzeinschlag und arbeitete als Lehrer auf dem gelernten Fachgebiet im Finanztechnikum Tallinn und danach, 1954 als der Oberlektor an Tartuer Staatlichen Universität, wo er den Studenten die Vorlesungen der Wirtschaftsanalyse hielt. Dabei konzentrierte er sich auf das formalisierte Behandeln von Problemen, darunter auf das Benutzen von mathematischen Methoden. Lehren musste er auch Buchhaltung und verschiedene Statistikkurse.

1957-1958 setzte er sein eigenes Studium in Form einer der einjährigen Aspirantur in dem Institut für Volkswirtschaft Moskau fort. Das Studium bei dem westlich orientierten Prof. N. Druzinin führten zu der Verteidigung der Kandidatendissertation zum Thema „Probleme der Verteilung der absoluten Zuwachs zwischen den Erscheinungsfaktoren und die Lösungsmöglichkeiten in der Wirtschaftsstatistik“. Im Jahre 1962 hat er in Wissenschaftsakademie der ESSR die Dissertation verteidigt und ihm wurde der wissenschaftlichen Grad des Kandidaten der Wirtschaftswissenschaften verliehen.

1964 begann er seine Arbeit im Polytechnischen Institut Tallinn (TPI) als Leiter der Lehrstuhl für Statistik und Buchhaltung. Später, nur als Leiter der Lehrstuhl für Statistik, beschäftigte er sich bis zum Emeritieren im Jahre 1997. Somit hat er 33 Jahre in TPI gearbeitet. 1969 war die Doktordissertation von U. Mereste zum Thema „Indexmethode in der Wirtschaftsanalyse. Eine theoretisch-methodische Studie“ fertiggestellt. Die Verteidigung brachte ihm 1972 den wissenschaftlichen Grad des Wirtschaftsdoktors und 1973 auch die Berufung zum Professor. 1994 wurde Prof. U. Mereste Akademiker der Estnischen Wissenschaftsakademie.

Prof. Uno Mereste hatte eine große Rolle in der Wiederherstellung der Unabhängigkeit von Estland. In den Jahren 1988-1989 war er Mitglied der Estnischen Volksabgeordnetenversammlung und einer der Leiter des I. Kongress der Volksfront. 1989-1992 war er Berater in der Staatlichen Planungskomitee der ESSR und in dem Wirtschaftsministerium der Estnischen Republik bei der Vorbereitung und Anlassung der Wirtschaftsreformen. 1991-1992 nahm er als Mitglied des Kollegiums der Estnischen Bank und 1992-1997 als Vorsitzender des Kollegiums an der Wiedererschaffung des estnischen Geldsystems, an der Bildung der Finanzpolitik und an der Bildung der Gesetzesvorlage der Estnischen Bank teil.

1992-2003, während drei Wahlperioden, war er Mitglied der Estnischen Reichstag, darunter 1996-1999 Mitglied der Tallinner Stadtrat.

Akademiker Prof. Uno Mereste schuf in der Wissenschaft seine eigene Schule und vererbte zahlreiche wissenschaftliche Publikationen und sein Tod ist ein großer Verlust für das estnische Volk.

Februar 2010

Inga Lõokene  
(Technische Universität Tallinn)

**ACADEMICIAN, PROFESSOR UNO MERESTE**  
**(27.05.1928–06.12.2009)**  
**IN MEMORIAM**

Professor **UNO MERESTE** was an outstanding scholar of economics and promoter of science. He is considered to be one of the most famous authors in the Baltics and elsewhere for his universal concept of matrix model that he developed in 1980-1990 for the financial analysis of public economy and business enterprises. This article introduces and describes in addition 22 original scientific achievements of Uno Mereste that are all applicable not only in economics but also in technical and social sciences.

After graduating in 1950 from Tallinn Institute of Polytechnics as an economist specialising in finance Professor Uno Mereste started first practising as a lecturer in his field of study in Tallinn Technical School of Finance and thereafter in 1954 at Tartu State University as a senior lecturer of economic analysis. In his lectures he concentrated on the formalised approach to subjects and application of mathematical methods. He also taught financial accounting and several courses of statistical analysis.

In 1957-1958 he continued his studies in Moscow Institute of Public Economy in a one-year post-graduate program. Studies under the guidance of western-minded professor N. Druzinin led to defending his Candidate's Thesis on the topic "Issues concerning Absolute Increment Distribution of the Phenomenon between Factors and its Solution in Economic Statistics". In 1962 he defended his thesis in Academy of Science of the ESSR and was awarded the scientific degree of the Candidate of Economics.

In 1964 he became the Head in the Chair of Statistics and Financial Accounting (later Statistics) in Tallinn Polytechnic Institute where he worked until becoming Professor Emeritus in 1997. Altogether he worked 33 years in Tallinn Polytechnic Institute. In 1969 Uno Mereste completed his doctor thesis "Application of the Index Method in Economic Analysis. Theoretical and Methodological Study". He defended the thesis in 1972 and obtained his Doctor's Degree in economics and in 1973 Professorship. In 1994 professor Uno Mereste became an academician of the Estonian Academy of Science.

Professor Uno Mereste played an important role in restoring Estonian independence. In 1988-1989 he was a member of Estonian National Council and one of the leaders of the I Congress of National Front. In 1989-1992 he held the office of Counsellor for the Planning Committee of the ESSR and Ministry of Economic Affairs of Estonian Republic preparing and implementing economic reforms. He participated in the re-establishment process of the Estonian monetary system and formation of the monetary policy as well as preparation of the draft Bank of Estonian Act as a member of Estonian Bank supervisory board in 1991-1992 and chairman of the supervisory board in 1992-1997. In 1992-2003 he was a member of Estonian

Parliament for three election periods and a member of Tallinn Town Council in 1996-1999.

Academician, professor Uno Mereste developed his own School in economic research and wrote numerous scientific publications. His departure is a great loss for the Estonian society.

February 2010

Inga Lõokene  
(Tallinn University of Technology)



## PROFESSOR HEIKI MÜÜR (1932-1996) – UUE SUUNA RAJAJA NÕUKOGUDEAEGSETE MAJANDUSTEADLASTE KOOLITAMISEL



Heiki Määr oli majandusteadlane, kelle erialane tegevus jäi põhisosaks nõukogude perioodi. Tema akadeemilist karjääri saab nii tollaegsete kui ka tänapäevaste hindamiskriteeriumide alusel lugeda igati edukaks. Teadlasena jõudis ta kandidaadi- ja doktorikraadini, õppejõuna sai professori kutse ning organisaatorina töötas pikki aastaid kateedrijuhataja ning dekaani ja prodekaani rollis. Aga ennekõike tuleb teda meenutada oma koolkonna loojana täiesti uue mõtteviisiga noorte majandusteadlaste kujundamisel. Majandusküberneetika eriala lõpetanud olid nõukogudeaegse stagnatsiooni tingimustes saanud hariduse, mis võimaldas neil mitte ainult vastu pidada, vaid olla ka innovatiivsed ja arenemisvõimelised väga põhjapanevate muutustega olukordades.

Heiki Määr sündis 1932. aastal Tallinnas. 1954. aastal, pisut noorema kui 22 aastase noormehena oli tal taskus Tallinna Polütehnilise Instituudi (nüüdne Tallinna Tehnikaülikool) diplom, mis kinnitas, et tegemist oli tollaegsete õppekavadele vastava hea majandusspetsialistiga. Saadud haridus võimaldas tal edukalt jätkata majandusõpinguid tollaegses parimas rahvusvahelises keskkonnas, nimelt Moskvas Plehhanovi-nimelises Rahvamajanduse Instituudis aspirantuuris (praeguses mõistes doktorantuuris). Nelja-aastaseid õpinguid aspirantuuris päädis edu ning 1960. aasta mais tuli Moskva Kõrgemalt Atestatsioonikomisjonilt (VAK) kinnitus, et 1959. aastal kaitstud kandidaaditöö põhjal on Heiki Määrile omistatud teaduskraad: majandusteaduste kandidaat, mida tänapäeval tõlgendatakse rahvusvahelise doktorikraadina (PhD). Järgmine teaduskraad ehk majandusdoktori kraad omistati talle 1976. aastal. Selle akadeemilise kraadi saamise aluseks oli 1971. aastal ilmunud eestikeelne originaalõpik „Rahvamajanduse planeerimine“, mille põhjal sai eesti keeles majandusalaseid alusteadmisi omandada terve põlvkond nõukogudeaegseid majandusteadlasi. Lisaks nimetatule on Heiki Määrilt on ilmunud veel mitmeid majandusalaseid raamatuid, milledest on sellele ajale omaseid vajalikke teadmisi saanud nii tudengid kui majanduspraktikud: Rahvamajanduse juhtimine ja planeerimine (1964); Bilansimeetod ja planeerimine (1965); Hinnad ja majandusreform (1970); Rahvamajanduse planeerimine (1971); Majandusteadus ja rahvamajandus 1972-1974 (1975, toim.); Rahvamajandusbilans ja planeerimine (1987, koos Valve Kirsipuuga).

Õppejõutööd alustas Heiki Määr Tartu Ülikoolis (tol ajal TRÜs ehk Tartu Riiklikus Ülikoolis) juba 1956. aastal, olles vaid kahekümne nelja aastane ning jätkates samal ajal õpinguid Moskvas aspirantuuris. Kuus aastat hiljem (aastast 1962) juhtis ta juba oma esimest akadeemilist struktuuriüksust TRÜs – raamatupidamise kateedrit.

Sellest ajast alates oligi Heiki Müüri teine tegevus põhiliselt seotud akadeemiliste struktuuriüksuste juhtimise ja nende tegevuse korraldamisega. Lisaks kateedrijuhatajale on ta töötanud prodekaani (1965-1968 – TRÜ Õigusteaduste osakonna prodekaan dekaani kohustes), dekaanina (1974-1977) ning instituudi juhatajana. Aastatel 1981-1986 töötas Heiki Müür ENSV Riikliku Plaanikomitee Majanduse ja Planeerimise Teadusliku Uurimise Instituudi direktorina. 1992. aastal pärast Tartu Ülikooli majandusteaduskonna tegevuse olulist ümberkorraldamist töötas ta rahvamajanduse professorina ning TÜ majanduspoliitika ja riigimajanduse instituudi juhatajana.

Kogu oma akadeemilise karjääri vältel on ta üles näidanud väga häid organisatorivõimeid, suurt vastuvõtlikkust kõigele uuele ning oskust ja entusiasmi kaasata sobivaid inimesi tema poolt püstitatud eesmärkide täitmisele. Ta näitas üles suurt paindlikkust ja võimekust ka kaasalöömisel turumajandusliku majandussüsteemi nõuetele vastavate majandushariduse õppekavade väljatöötamisel ja elluviimisel ning neid toetava teadustöö korraldamisel Tartu Ülikooli majandusteaduskonnas. Majandusprofessor Uno Mereste kirjutas 1992. aastal oma iseloomustuses Heiki Müüri kohta järgmist: „... ta on kujundanud uued loengukursused ja seostanud need turumajandusele ülemineku konkreetsete eritingimustega Eesti oludes. Tuleb kõigiti heaks kiita majandusteaduse aluste õpetamist arstidele, pedagoogidele jt. eesmärgiga avada makroökonomilisi seoseid“. Seega olid professor Müüri lisaks innovatiivsusele olemas ka vajalikud ideed ja oskused interdistsiplinaarse mõtteviisi arendamiseks.

Professor Heiki Müüri teisest eluteest ülevaate tegemisel kerkivad meile, tema akadeemilistele õpilastele, esiplaanile eelkõige sõnad „majandusküberneetika“ ja „majandusküberneetikud“. Majandusküberneetikuid hakati Tartu Riiklikus Ülikoolis süsteemikindlalt koolitama 1967. aasta sügisel, mil taasiseseisvunud majandusteaduskonnas alustas õpinguid 25 majandusküberneetika eriala värsket tudengit. Nendest 12 said 1972. aasta kevadel TRÜ diplomi, millel oli lõpetaja erialaks märgitud majandusteadlane-küberneetik. Kokku on majandusküberneetika eriala lõpetanud 25 lendu 462 lõpetajaga. Majandusküberneetika eriala oli Eestis seni suhteliselt tundmatu, puudus nii eestikeelne terminoloogia kui ka vastav erialakirjandus. Tegelikult oli eriala uus ja innovatiivne kogu Nõukogude Liidu kõrgharidussüsteemis, sest selle õpetamisega tegeldi vaid üheksas ülikoolis.

Aastatel 1971-1992 koordineeris majandusküberneetikute koolitamist TRÜs majandusküberneetika ja statistika kateeder, mille esimeseks ja pikaajaliseks juhatajaks oli professor Heiki Müür. Tema juhtis kateedrit aastatel 1971-1981. See oli oluline aeg, kus loodi tugev alus uue õppesuuna arenguks Eestis. Muu kõrval mahtus selle tegevuse alla ka kontseptuaalsete arusaamade loomine selle kohta, mis on majandusküberneetika ning milline on majandusküberneetika ja majandusküberneetikute roll majandusteaduses ja praktilises majandusel. Sel ajal kujundati ka uue majanduseriala hea maine ning seeläbi toodi Tartu Ülikooli majandusteaduskonda hulgaliselt noori võimekaid õppureid.

Ja kuigi mõiste „majandusküberneetika“ ja sellega haakuvate majanduserialade nimi on aja jooksul muutunud, on majandusprotsesside kvantitatiivse analüüsi ja modelleerimise ning infotöötuse oskused majandusteadlastele igihaljalt vajalikud. Ka rahvusvaheliselt on need teadmised tunnustatud oluliseks osaks akadeemilises, aga ka rakendusliku suunitlusega majandushariduses. See on see osa majandusharidusest, mis peab vastu ka poliitilistes tõmbetuultes ning annab majandusteadlastele võime kiiresti ja kompetentselt kohaneda muutuvate sotsiaal-majanduslike ja poliitiliste olukordadega ning siit tulenevate uute nõuetega õppe- ja teadustöös.

Professor Heiki Müüri õpilastena on meil nüüd üle mitme aastakümne ikka veel tunnustavalt meeles, kui palju aega ja energiat ta kulutas selleks, et majandusküberneetika eriala esimeste lendude lõpetajad jääksid majandusteaduskonna juurde tööle ning et neil oleks selles töös arenguperspektiivi ja ka toetavaid materiaalseid tingimusi. Ta motiveeris noori teadustööga tegelema ning otsis neile sobivaid uurimisteemasid ettevõtete ja ministeeriumidega sõlmitud lepinguliste tööde näol. Selle tegevuse tulemusena hakkas kujunema noorte majandusteadlaste järelkasv, kes püüdsid majandusprotsesside lahtimõtestamisel kasutada matemaatilist aparatuuri ning selleaegse arvutustehnika võimalusi. Majandusteaduskonna juures tekkisid mitmed uurimisgrupid, kes tegelesid ettevõtete ja ministeeriumide poolt tellitud rakenduslike uurimistööde täitmisega. Näiteks kujunes tugev töögrupp uurimaks töötingimuste seost töötajate haigestumise ja ajutise töövõimetusega ning sellest tulenevaid majanduslikke tagajärgi. Just professor Heiki Müüri eestvedamisel käivitusid Tartu ülikooli juures esimesed tervishoiuökonomika ja tervishoiu alased interdistsiplinaarse suunitlusega uurimistööd. Mitmeid uurimistöid tehti ka majandusmatemaatilise modelleerimise võimaluste kasutamise kohta kaubandusprotsesside analüüsimisel ning kaubakäibe planeerimisel.

Professor Müüri näol oli tegemist väga võimeka teadusorganisaatoriga, kes oskas näha arenguperspektiive, tundis inimesi ja nende võimeid, suutis inimesi suunata neile sobivatele tegevustele ja neilt võimetekohaseid tulemusi nõuda. Tuginedes tugevale organiseerimisvõimele ja headele läbirääkimisoskustele, suutis ta luua kateedri juurde noorte arengut võimaldavaid uusi töökohti (näiteks stažöör-uurija töökoht) ning leida huvipakkuvaid rakendusliku suunitlusega uurimisteemasid, milledega tegelemine võimaldas noortel lisaks nende erialasele arengule saada ka arenguks vajalikku materiaalselt motivatsiooni. Head tööalased suhted loodi ka kolleegidega Lätist ja Leedust ja osa neist toimivad tänaseni.

Professor Heiki Müüri eestvedamisel loodud uurimisgruppide ja nende baasil kasvanud noorte majandusteadlaste tööd leidsid sel ajal head rahvusvahelist kõlapinda. Paraku piirdus rahvusvahelistumine Tartu majandusteadlaste nõukogude aja tingimustes eelkõige vaid koostöövõimaluste arendamisega tolleaegsete teaduskeskustega Nõukogude Liidus. Tartu noored majandusteadlased esinesid edukalt ettekannetega heatasemelistel teaduskonverentsidel Moskvas, Leningradis (praegune Sankt-Peterburg) ja Novosibirskis. Nad olid konkurentsi-võimelised kandideerimisel oma õpingute jätkamiseks aspirantuuris (praeguses käsitluses doktorantuuris) Moskva Riikliku Ülikooli juures, kaitsesid edukalt

väitekirju ning said teaduskraade ja teadmisi, mis võimaldasid hiljem tulemuslikult osaleda majandushariduse ja teadustöö ümberkorraldamisel Eestis 1990-ndatel aastatel ja ka praegu.

Selleaegse heatasemelise majandusteadusliku uurimistöö üheks väljundiks oli Tartu Ülikooli majandusküberneetika ja statistika kateedri organiseerimisel 1980. aastal Tallinnas üleliiduline majandusmatemaatiliste meetodite alane konverentsi toimumine. Konverentsil esinesid Eesti majandusteadlaste kõrval ettekannetega enamus selleaegseid tunnustatuid majandusmatemaatiliste meetodiga tegelevaid majandusteadlasi, paraku küll vaid Nõukogude Liidust, mitte väljastpoolt selle piire. Ettekandega esines ka professor L.V. Kantorovitš, kes ainsana endise Nõukogude Liidu majandusteadlastest oli 1975. aastal saanud Nobeli mälestuspreemia majandusuuringute vallas. Tema olulisemad tööd olid seotud optimeerimismeetodite arendamisega ning neid meetodeid õpetati ja kasutati ka Tartu majandusteadlaste poolt.

Siinjuures on oluline märkida, et majandusküberneetika eriala andis sotsialistliku majandussüsteemi ideoloogiast suhteliselt sõltumatu ning headele matemaatikaalastele teadmistele tugineva majandushariduse, mis võimaldas lõpetanutel edukalt toime tulla ka oluliste muudatuste tingimustes. Seega professor Heiki Müüri roll ei ole sugugi väike selles, et Tartu ülikooli majandusteaduskond on praeguseks kujunenud majandusteaduse ja -hariduse arvestatavaks liidriks Eestis. Majandusküberneetika vilistlastest on TÜ majandusteaduskonna dekaani rollis olnud professorid Janno Reiljan (1993-1996), Jüri Sepp (1996-2005) ning Toomas Haldma (alates 2005). Prodekaanide rolli on erinevatel aegadel täitnud majandusküberneetika vilistlased Helje Kaldaru, Urmas Varblane, Jüri Sepp, Janno Reiljan, Kaia Philips ja Tiiu Paas. Majandusteaduskonna üheksa õppetooli eesotsas olevatest professoritest on praegu (2010) viis Tartu ülikooli majandusküberneetika eriala vilistlased. Paljudel professor Heiki Müüri õpilastel on olnud ja on ka praegu kindel ja märkimist vääriv roll TÜ majandusteaduskonna arengus ning selle omanäolisuse ja võimekuse kujunemises. Tundub, et professor Heiki Müüri akadeemilised õpilased on püüdnud läbi aastate kanda endas oma õpetajalt (mitte küll sõnades, vaid tegudes) saadud sõnumit „Õpetamine – see on eelkõige õppimine“. See õpetus on osutunud Tartu ülikooli majandusteaduskonnas elujõuliseks läbi erinevate põlvkondade ja majandussüsteemide.

Meile, Heiki Müüri õpilastele, kes võib-olla iseenesegi jaoks ootamatult osutusi ühtäkki tema nooremateks kolleegideks, on ta jäänud meelde väga austusväärse isikuna, kes oskas olla ühtaegu nii nõudlik kui ka toetav, nii kontrolliv kui ka õpetav, ja seda nii sõnades kui ka tegudes. Tema nõudlikkus oli meile enesestmõistetav, sest eelkõige oli ta nõudlik iseenese vastu. Samas oskas ta igapähele leida jõukohase ülesande ja kontrollis siis selle täitmist. Kui miski ei olnud tehtud piisavalt hästi, võis ta anda üsnagi otsekohe hävitava kommentaari, aga kui mitte tookord, siis täna näeme selle õpetavat sisu. Samas asus ta alati oma kolleegide (aga ka üliõpilaste) kaitseks välja juhul, kui seda vaja oli. Meenutamist väärib tema oskus siduda kollektiivi. Igal semestril toimusid kateedri laiendatud koosolekud, kuhu olid kutsutud ka üliõpilaste esindajad (kursusevanemad) rääkima oma

probleemidest. Samuti pidid kõik õppejõud aru andma selle kohta, kuidas nende õpetatavates ainetes eksamisessioonile vastu minnakse. Nii mõnigi valus probleem leidis lahenduse ja noortel oli alati võimalik midagi oma vanemate kolleegide kogemustest õppida.

Tänapäeval, mil elu on muutunud kiireks ja individuaalsele saavutusoskusele rajanevaks, on hea meenutada ka Heiki Müüri oskust kollektiivi luua. Ta oli alatine innustaja majandusteaduskonna spordipäevadel, kus kõigile jätkus jõukohast ja huvipakkuvat tegevust. Kavas oli nii tõsistele harrastajatele mõeldud viimase mehe jooks kui ka mitmeid pigem lõbusat kaasaelamist pakkuvaid „jõu ja ilu numbreid“. Ka vilistlaste elu jälgimise ja nendega tihedate suhete looja rollis oli Tartu Ülikooli majandusteaduskonnas prof. Heiki Müür. Tema algatatud iga-aastase Küberite Päeva traditsioonist on tänaseks välja kasvanud majandusteadusteaduskonna vilistlasorganisatsioon „Hermes“.

Lisaks ülikoolitööle pühendunud õppejõule ja teadlasele oli Heiki Müüri näol tegemist ka hea pereisa ja mitmekülgsede huvidega inimesega. Ta tundis huvi koduuringute vastu ning oli Tartu Linna kodu-uurimise toimkonna liige. Tema eakaaslased mäletavad Heiki Müüri kui innukat tennisemängijat, kes tegeles ka tenniseseksiiooni tegevuse korraldamisega, olles Tartu linna tenniseseksiiooni presiidiumi liige.

Veebruar-märts 2010

Tiiu Paas  
Helje Kaldaru  
Juta Sikk  
(H. Müüri õpilased ja kolleegid)

**PROFESSOR HEIKI MÜÜR (1932-1996) –  
GRÜNDER EINER NEUEN RICHTUNG FÜR DIE AUSBILDUNG VON  
WIRTSCHAFTSWISSENSCHAFTLERN IN DER ZEIT DER  
SOWJETREPUBLIK ESTLAND**

Professor Heiki Müür übte seine erfolgreiche fachliche Tätigkeit hauptsächlich während der Sowjetzeit aus. Heiki Müür wurde 1932 in Tallinn geboren. Schon mit 22 erwarb er 1954 nach dem erfolgreichen Studium das Diplom an der Technischen Universität Tallinn. Danach setzte er sein Studium als Nachwuchswissenschaftler am Volkswirtschaftsinstitut in Moskau fort. 1959 wurde er wissenschaftlicher Kandidat und 1976 PhD. Seine akademische Laufbahn begann 1956 an der Tartuer Staatlichen Universität, zuerst als Lektor, später als Dozent und Professor. Er schrieb viele Fachbücher, die unter Studenten und Praktikern sehr populär waren, z.B. Management und Planung der Volkswirtschaft, 1964; Preise und Wirtschaftsreform, 1970; Planung der Volkswirtschaft, 1971; Wirtschaftswissenschaft und Volkswirtschaft, 1972-1974 (als Redakteur einer Serie von Büchern); Volkswirtschaftsbilanz und Planung (1987, Mitautor).

Während seiner akademischen Laufbahn zeichnete sich Professor Heiki Müür als begabte Führungskraft aus, er war als Prodekan, als Dekan und als Leiter des Instituts für Betriebswirtschaftslehre an der Wirtschaftswissenschaftlichen Fakultät der Universität Tartu tätig. 1981-1986 war Professor Heiki Müür Direktor des Forschungsinstituts, das als staatliche Einrichtung für wissenschaftliche Forschung auf dem Gebiet der Planung und Wirtschaft funktionierte. Gleichzeitig setzte er seine Arbeit als Teilzeitprofessor an der Universität fort. Sein Verdienst war es, dass 1967 an der Tartuer Universität die neue Fachrichtung "Wirtschafts kybernetik" eröffnet wurde. Als Lehrstuhlleiter Wirtschafts kybernetik und Statistik investierte er viel Zeit und Energie, damit junge Fachkräfte innovative Kenntnisse über die Methoden der angewandten Mathematik und Statistik in der Wirtschaftsanalyse einsetzen konnten. Dieses Gebiet war in Estland relativ unbekannt und ziemlich neu in der ganzen Sowjetunion.

In Zusammenarbeit mit jungen angehenden Wirtschaftswissenschaftlern begann Professor Müür mathematische und statistische Methoden bei der Lösung der wirtschaftlichen Prozesse anzuwenden. Es entstand eine Arbeitsgruppe, die sich mit dem Zusammenhang zwischen den Arbeitsbedingungen und den Erkrankungen und den daraus resultierenden wirtschaftlichen Ergebnissen befasste. Es ist seiner Initiative zu verdanken, dass die Ergebnisse wissenschaftlicher Forschungsarbeit publiziert wurden. 1981 fand in Tallinn eine Konferenz über die Anwendung wirtschaftsmathematischer Methoden statt, an der L. Kantorovič (der bekannte sowjetische Wirtschaftswissenschaftler und Nobelpreisträger 1975, sein Forschungsgebiet war mit der Entwicklung der Optimierungsmethoden verbunden) teilnahm. Nach der Wiedererlangung der Unabhängigkeit Estlands begann Professor Müür sich mit der Ausarbeitung der neuen Lehrprogramme und -pläne zu beschäftigen. Er konzipierte und hielt ferner neue Vorlesungsreihen in Marktwirtschaft sowohl für die Studenten als auch für die Praktiker. Viele, die ihr Studium mit dem Diplom des Wirtschafts kybernetikers abschlossen, sind heute

anerkannte estnische Wirtschaftswissenschaftler, die das Werk von Professor Heiki Mür fortsetzen und ihm für seine Leistungen auf dem Gebiet der wirtschaftswissenschaftlichen Ausbildung in Estland dankbar sind.

Februar-März 2010

Tii Paas  
Helje Kaldaru  
Juta Sikk

**PROFESSOR HEIKI MÜÜR (1932 -1996) –  
THE FOUNDER OF THE NEW DIRECTION IN EDUCATION OF  
ECONOMISTS IN SOVIET ESTONIA**

Professor Heiki Müür had his successful professional career mainly during the soviet period. Heiki Müür was born in 1932 in Tallinn. In 1954, at the age of 22, he received the diploma from the Tallinn Technical University, honouring him as a good specialist in socialist economy. This educational background allowed him to continue the post-graduate studies in the Moscow Institute of Economics. In 1959, he defended PhD thesis (candidate in economics), and in 1976, was approved as the habilitated doctor in Economics. Heiki Müür started his academic career at the Tartu State University in 1956, working initially as a lector and later as a docent and a professor. He published several books in Estonian that were actively used by the students as well as practitioners: Management and Planning, 1964; Prices and Economic Reform, 1971; Economic Planning, 1971; Economics and National Economy (editor of the series of books, 1972-1974; National Balance and Planning (1987, co-author).

During his academic career, professor Heiki Müür demonstrated good abilities for leadership working as a vice dean and the dean at Tartu State University, and after 1990s, as a head of the institute of the Faculty of Economics and Business Administration at the University of Tartu. During the years 1981-1986, he was the director of the Research Institute, which worked for the Soviet Estonian government in Tallinn; during these years, he also continued to work as a part-time professor at the university. We, as his students of the field of “economic cybernetics” (mathematical economics) and successors, appreciate particularly highly his activities and success in establishing and promoting education in mathematical economics at the Faculty of Economics of the Tartu State University. The new specialisation in the soviet economic education with the name “economic cybernetics” was opened at the Tartu State University in 1967.

Professor Heiki Müür devoted lots of his energy, time and knowledge to create the school of young economists who have good knowledge in applying mathematical and statistical methods for analysing economic problems in Estonia. The knowledge in economics and research methodology of these graduates was not heavily related to the soviet rules of the economic mechanism. In collaboration with the young post-graduates, professor Müür started to develop applied research for the soviet firms examining the relationship between the working conditions and economic outcomes and implementing modern mathematical and statistical methods by conducting economic analysis. He was one of the initiators and organisers of the high scientific level economic conference on applying modern methods for analysing economic processes in Tallinn in 1981. L. Kantorovič, the only soviet economist who got Nobel Prize (1975) in relation to elaborating and developing linear programming methods, was among the participants of the conference. Professor Heiki Müür was innovative and flexible in starting to restructure the curricula and study process at the University of Tartu after Estonia regains its independence. He was the initiator of offering new study courses in market economy not only for the students of the



Faculty of Economics, but also for students from other faculties as well as for practitioners. The graduates, who obtained diploma in “economic cybernetics” and belonged to the school of the Estonian economists established by the significant contribution of professor Heiki Müür continued his work being the initiators and developers of the new economic curricula and of restructuring economic education and research in compliance with high level international requirements.

February-March 2010

Tiiu Paas  
Helje Kaldaru  
Juta Sikk

## JUUBELIAASTAD 2009-2010 MAJANDUSPOLIITIKA TEADUSKONVERENTSIDE KORRALDAMISEL JA ARTIKLITE PUBLITSEERIMISEL EESTIS

2009. aastal möödus **25 aastat esimesest majanduspoliitika alase teaduskonverentsi korraldamisest Eestis**. Nimelt toimus esimene majanduspoliitika konverents 1984. aasta maikuu lõpul Tartus-Värskas (nn laevakonverents).<sup>1</sup> Tõsi, seda küll nüüd tagantjärele vaadates, sest ega esimese konverentsi toimumise ajal ei osanud vist keegi ennustada, et sellest traditsioon kujuneb.<sup>2</sup> Pealegi hakati Eesti kõrgkoolides majanduspoliitika aineid õpetama ja teadlikult majanduspoliitikale suunatud uurimistöid tegema siiski alles 1990-ndate aastate esimesel poolel.<sup>3</sup> Pärast kümne aastast vaheaega toimus juba eesmärgipäraselt teine majanduspoliitika alane konverents Tartus-Värskas 1994. aasta maikuu lõpul.

Ka 2010. aasta on juubelihõnguline nii majanduspoliitika konverentside korraldamise kui teadusartiklite publitseerimise seisukohalt. Nimelt täitub 2010. aastal **15 aastat esimesest rahvusvahelisest majanduspoliitika teaduskonverentsist Eestis**. Esimene teiste riikide majandusteadlaste osavõtuga teaduskonverents toimus 1996. aastal, olles konverentside järjekorras siiski juba neljas kokkusaamine. 2010. aasta on märgiline ka selle poolest, et täitub **kümme aastat** (alates aastast 2001) *koostööst Saksa teaduskirjastustega*. Nimelt algas koostöö teaduskirjastusega „Berlin-Verlag Arno Spitz“, mille järglaseks sai 2003. aastast „Berliner Wissenschafts-Verlag“. Aastatel 1994-2000 oli ainukirjastajaks eesti kirjastaja Mattimar ning aastast 2001 on toimunud tihe, sisukas ja tulemuslik kahepoolne koostöö nimetatud saksa ja eesti kirjastuste vahel. Koostöö vajaduse tingis täiendav tegevus publikatsioonide kvaliteedi tõstmisel ja levitamisel.

Konverentside temaatika on aastate vältel peamiselt järgmistes valdkondades olnud:

1. Ettevõtluspoliitika ja ettevõtte strateegia
2. Fiskaal- ja rahapoliitika
3. Keskkonnapoliitika
4. Regionaal- ja kohaliku omavalitsuse poliitika
5. Sektoraalne (rahvamajandusharude) majanduspoliitika
6. Sotsiaalpoliitika
7. Töö- ja sissetulekute poliitika

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<sup>1</sup> Vt ka: Raudjärvi, Matti. Majanduspoliitika teaduskonverentside traditsiooni kujunemine Eestis/ Die Tradition der wissenschaftlichen Konferenzen über Wirtschaftspolitik in Estland/ Development of the Tradition of Conferences on Economic Policy in Estonia. – Eesti majanduspoliitilised väitlused/ Estnische Gespräche über Wirtschaftspolitik/ Discussions on Estonian Economic Policy. Berlin, Tallinn: BWV, Mattimar, 2008, nr. 16, lk. 119-139 (eesti, saksa ja inglise keeles).

<sup>2</sup> Käesoleva, 2010. aasta 1.-3. juulil toimub Värskas XVIII konverents.

<sup>3</sup> Esimene majanduspoliitika õppetool Eestis asutati Tallinna Tehnikaülikooli majandusteaduskonnas allakirjutanu poolt 1992. aastal. Aasta hiljem asutati majanduspoliitika õppetool ka Tartu Ülikooli majandusteaduskonnas.

Lisaks on paljud üksikud artiklid kirjutatud ka mitmetes teistes majanduspoliitika valdkondades.

Ettevõtetmajanduse alastele kirjutistele tuginevaid teaduskonferentse viidi läbi aastatel 2003-2006, st neljal aastal jaanuarikuuks Pärnus. Seda tehti seetõttu, et paljudel ettevõtetmajanduse uurimisega tegelevatel autoritel ei õnnestunud oma artiklit piisavalt majanduspoliitikaga siduda. Võimalik, et seda (st ettevõtetmajanduse alaste konverentside korraldamine Pärnus või mujal) jätkatakse edaspidi ja sillutatakse nii teed järgmise traditsiooni kujundamiseks.

Tänaseks on kujunenud olukord kus majanduspoliitika alase teaduskonferentsi korraldamine on üks ning majanduspoliitika alaste artiklite avaldamine („Eesti majanduspoliitilised väitlused”<sup>4</sup>) aga teine tegevus. Need tegevused on küll omavahel seotud, kuna paljude artiklite autorid esinevad samateemaliste ettekannetega konverentsil, kuid samas on ka konverentsil selliseid ettekandjaid kes artiklit avaldamiseks ei esita. Oleme jõudnud olukorrani, kus nimetatud väljaande artiklid on avaldatud rahvusvahelistes andmebaasides EBSCO (EBSCO Publishing, Ipswich, Massachusetts, USA) ja ECONIS (Kieli Ülikooli juures asuv Kieli Maailmamajanduse Instituut, Kiel, Schleswig-Holstein, Saksamaa LV). Kogumikul on rahvusvaheline toimetuskolleegium, artiklid on anonüümselt eelretsenseeritavad eeskätt välismaiste, aga samuti eesti ekspertide poolt ning avaldamine on avatud laiale autorite ringile.

Nimetatud väljaanne on alates 2007. aastast uues formaadis<sup>5</sup> (ning eeltoodud nime all), st täismahulised artiklid (üldjuhul inglise ja saksa keeles) avaldatakse CD-l ning artiklite teisekeelsed kokkuvõtted (autorite valikul eesti, saksa või inglise keeles) on paber kandjal (CD kuulub väljaande juurde). Lisaks on publikatsioonis avaldatud kroonika osa, kus avaldatakse Eestist pärit väljapaistvate majandusteadlaste tegevuse kohta kirjutatud lühikaristikud ning muud teavet, nii konverentside korraldamise kui artiklite publitseerimise kohta puutuvat informatsiooni. Praegu on väljaande ilmumine kavandatud aastas kuni kahe-numbriksena – üks number on pühendatud eeskätt rahvamajanduse teemalistele artiklitele ja teine võiks edaspidi ilmuda eeskätt ettevõtetmajanduse valdkondade (kuid ikkagi seotult ka majanduspoliitikaga) kirjutistele tuginedes.

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<sup>4</sup> EBSCO andmebaasides on nimetatud kogumik fikseeritud kui teadusajakiri, ECONISE andmebaasides kui aastaraamat-kogumik/ajakiri. ECONISE andmebaasides on publikatsioon avaldatud alates 2000. aastate algusest, EBSCOga on kirjastajal Mattimar koostööleping väljaande avaldamiseks allkirjastatud 2008. aastal. Eesti Teadusinfosüsteemi (ETIS) publikatsioonide klassifikaatoris on väljaandes „Eesti majanduspoliitilised väitlused” avaldatud artiklid liigitatavad jaotuste 1.2 ja 3.1 alla.

<sup>5</sup> „Eesti majanduspoliitilised väitlused/ Estnische Gespräche über Wirtschaftspolitik/ Discussions on Estonian Economic Policy”, ilmunud aastast 2007 selle nimetusega ning olles käesoleval, 2010. aastal juba järjekorras 18. number, on ühtlasi ajavahemikul 1984-2006 ilmunud majanduspoliitika kogumike järjeks (kuid siiski oluliselt muutunud ja edasiarendatud kujul).

Asjaosalistega on arutatud võimalust, et näiteks kuna igal aastal mais-juunis ilmub publikatsioon (nn nr 1) senise traditsioonilise, eeskätt rahvamajandusliku suunitlusega (ja oleks valdavalt seotud Värskas toimuva rahvusvahelise majanduspoliitika teaduskonverentsiga), siis näiteks detsembris-jaanuaris ilmuks kõnealune publikatsioon ka teist korda (nn nr 2) ning oleks ettevõtetmajandusliku suunitlusega. Selles võiksid olla hõlmatud kõik ettevõtetmajanduse osad –organisatsioon ja juhtimine, turundus, ettevõtte rahandus, majandusarvestus, finantsjuhtimine jt, aga samuti näiteks ettevõtluskeskkond, projektijuhtimine, teenuste disain, sotsiaalne ettevõtlus, turismiettevõtlus jpt. valdkonnad. Ka väljaande teisel numbril peaks olema rahvusvaheline toimetuskolleegium, artiklid anonüümselt eelretsenseeritavad ning avaldamine autorite laiale ringile avatud.

Ettevõtetmajandusliku sisuga publikatsiooni võiks osaliselt ka Eestis edaspidi toimuva (miks mitte aastatel 2003-2006 Pärnus toimunud konverentside jätkuna), vastava rahvusvahelise teaduskonverentsi korraldamisega siduda. Kindlasti on siin ainekst mõtlemiseks ja arutlemiseks. Eesmärgiks peaks olema võimalikult heatasemeline, kompleksne, nii Eesti kui teiste riikide vanemate ja kogemustega, aga samuti noorema põlvkonna majandusteadlaste kaudu ühikonna ja majanduse arengule suunatud teadusarenduse saavutamine. Arenguruumi on veel küllaga nii konverentside korraldamisel kui publikatsioonide ettevalmistamisel ja avaldamisel!

Siinkohal tänab allkirjutanu kõiki neid kolleege ja inimesi, kellega Eestis ja teistes riikides (eeskätt Saksamaal) on olnud võimalus teha koostööd nii konverentside korraldamisel-läbiviimisel kui publikatsioonide ettevalmistamisel ja avaldamisel. Kuna neid inimesi on möödunud aastate jooksul äärmiselt palju olnud, siis jätaks siinjuures nimed nimetamata, et keegi juhtumisi loetelust välja ei jääks. Koostöös osalenud inimesed, kes loevad neid ridu ja tunnevad end kaasosalistena – need tänud kuuluvad siiralt Teile! Samas, kõigis väljaannetes on enamike kaaskorraldajate nimed (nii isoonid kui firmad-organisatsioonid) üldjuhul ka ära trükitud.

Asjaosalistele head koostööd, edu ja parimaid kordaminekuid kõigis ettevõtmistes ka edaspidiseks!

Tallinnas, Pirita-Kosel  
Märtsis, 2010

Matti Raudjärv

Konverentside idee autor ja peakorraldaja,  
kogumiku „Eesti majanduspoliitilised väitlused” peatoimetaja

## JUBILÄUMSJAHRE 2009-2010 – 25 JAHRE WISSENSCHAFTLICHER KONFERENZEN UND PUBLIKATIONEN ÜBER WIRTSCHAFTSPOLITIK IN ESTLAND

Im Jahr 2009 wurden es **25 Jahre**, seit *in Estland die erste wissenschaftliche Konferenz über die Wirtschaftspolitik abgehalten wurde*. Diese erste Konferenz über die Wirtschaftspolitik wurde Ende Mai des Jahres 1984 auf der Fähre Tartu-Värskla abgehalten (die sog. Schiffskonferenz).<sup>1</sup> Von der Entstehung einer Tradition können wir wohl nur im nachhinein reden, denn damals, während der ersten Konferenz konnte vielleicht niemand ahnen, dass sich diese Veranstaltung zu einer Tradition entwickeln wird.<sup>2</sup> An dieser Stelle muss erwähnt werden, dass die wirtschaftspolitischen Fächer erst in der ersten Hälfte der 90er Jahre Eingang in die estnischen Hochschulen fanden und erst dann auch die ersten wissenschaftlich wirtschaftspolitisch orientierten Forschungsarbeiten vorgenommen wurden.<sup>3</sup> Die zweite Konferenz über die Wirtschaftspolitik wurde in Tartu-Värskla nach einer Pause von zehn Jahren Ende Mai 1994 schon mit einer klaren Zielvorstellung abgehalten.

Auch das Jahr 2010 ist durch Jubiläen gekennzeichnet, das betrifft sowohl die Veranstaltung der Konferenzen über die Wirtschaftspolitik als auch die Veröffentlichung einschlägiger wissenschaftlicher Beiträge. Im Jahr 2010 wird es **15 Jahre**, seit *die erste internationale Konferenz über die Wirtschaftspolitik in Estland abgehalten wurde*. Die erste wissenschaftliche Konferenz mit Beteiligung ausländischer Wirtschaftsforscher wurde im Jahr 1996 durchgeführt, wobei sie an der Reihe der Konferenzen immerhin schon das vierte Treffen der Forscher war. Das Jahr 2010 ist ein besonderes auch weil wir in diesem Jahr das **zehnjährige Kooperationsjubiläum mit den deutschen Wissenschaftsverlagen** begehen. Nämlich wurde im Jahr 2001 die Zusammenarbeit mit dem Wissenschaftsverlag „Berlin-Verlag Arno Spitz“ aufgenommen, gefolgt von dem „Berliner Wissenschafts-Verlag“ im Jahr 2003. In den Jahren 1994-2000 war der einzige Herausgeber der Beiträge der estnische Verlag Mattimar und seit dem Jahr 2001 gibt es zwischen den genannten deutschen und estnischen Verlagen eine enge, gehaltvolle und fruchtbare Zusammenarbeit. Den engen Kooperationsbedarf bedingen die zusätzlichen Anstrengungen sowohl bei der Erhöhung der Qualität der Publikationen als auch bei ihrer Verbreitung.

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<sup>1</sup> Siehe auch: Raudjärv, Matti. Majanduspoliitika teaduskonverentside traditsiooni kujunemine Eestis/ Die Tradition der wissenschaftlichen Konferenzen über Wirtschaftspolitik in Estland/ Development of the Tradition of Conferences on Economic Policy in Estonia. – Eesti majanduspoliitilised väitlused/ Estnische Gespräche über Wirtschaftspolitik/ Discussions on Estonian Economic Policy. Berlin, Tallinn: BWV, Mattimar, 2008, Nr. 16, S. 119-139 (in estnischer, deutscher und englischer Sprache).

<sup>2</sup> Am 1.-3. Juli dieses Jahres (2010) wird in Värskla die XVIII. Konferenz abgehalten.

<sup>3</sup> Die erste Lehrstuhl für Wirtschaftspolitik in Estland wurde im Jahr 1992 durch den Unterzeichneten an der Fakultät für Wirtschaft an der Tallinner Technischen Universität gegründet. Ein Jahr später wurde die Lehrstuhl für Wirtschaftspolitik auch an der Fakultät für Wirtschaft an der Tartuer Universität eröffnet.

Die thematischen Schwerpunkte der Konferenzen befanden sich im Laufe der Jahre hauptsächlich in den folgenden Bereichen:

1. Unternehmenspolitik und Unternehmensstrategie
2. Fiskal- und Monetärpolitik
3. Umweltpolitik
4. Regionalpolitik und lokale Gebietskörperschaften
5. Sektorielle Wirtschaftspolitik (Entwicklungen in einzelnen Volkswirtschaftsbranchen)
6. Sozialpolitik
7. Lohn- und Einkommenspolitik

Zudem hat es zahlreiche Einzelbeiträge zu vielen anderen Bereichen der Wirtschaftspolitik gegeben.

Die wissenschaftlichen Konferenzen auf der Basis der Beiträge über die Betriebswirtschaft wurden in den Jahren 2003-2006 abgehalten, also in vier Jahren immer im Januar in der Stadt Pärnu. Der Grund war, dass viele Autoren, die sich mit der Betriebswirtschaft befassten, ihre Beiträge nicht ausreichend mit der Wirtschaftspolitik verknüpft haben. Möglicherweise werden die Konferenzen über die Betriebswirtschaft in Pärnu oder woanders fortgesetzt und so der Weg zu einer neuen Tradition gebahnt.

Heute befinden wir uns in einer Situation, wo die Veranstaltung einer wissenschaftlichen Konferenz über die Wirtschaftspolitik und die Veröffentlichung der Beiträge über die Wirtschaftspolitik im Sammelband „Estonische Gespräche über Wirtschaftspolitik“<sup>4</sup> zwei getrennte Vorhaben sind. Sie sind wohl miteinander verbunden, da die Verfasser vieler Beiträge auf der Konferenz Vorträge zu gleichen Themen halten, zugleich beteiligen sich aber an den Konferenzen auch Referenten, die ihre Beiträge für die Veröffentlichung im Sammelband nicht vorlegen. Bis heute haben wir erreicht, dass die Sammelbände in den internationalen Datenbanken EBSCO (EBSCO Publishing, Ipswich, Massachusetts, USA) und ECONIS (das Institut für Weltwirtschaft an der Universität Kiel, Kiel, Schleswig-Holstein, Bundesrepublik Deutschland) eingetragen sind. Das Redaktionskollegium des Sammelbands ist international zusammengesetzt, alle Beiträge werden durch vorwiegend ausländische, aber auch estnische Experten anonym vorrezensiert und die Publikationsmöglichkeit steht offen für einen breiten Autorenkreis.

Der Sammelband erscheint seit 2007 im neuen Format<sup>5</sup> (unter dem vorgenannten Titel), d.h. die vollständigen Beiträge (in der Regel auf Englisch und Deutsch) sind

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<sup>4</sup> In den Datenbasen von EBSCO ist der genannte Sammelband als eine wissenschaftliche Zeitschrift eingetragen, in den Datenbasen von ECONIS als Jahrbuch-Sammelband/Zeitschrift.

<sup>5</sup> „Eesti majanduspoliitilised väitlused/ Estonische Gespräche über Wirtschaftspolitik/ Discussions on Estonian Economic Policy“, der Sammelband, der seit 2007 unter diesem Titel erscheint und dessen Ausgabe in dem laufenden Jahr (2010) schon der 18. an der Reihe ist, bildet zugleich die Fortsetzung der in den Jahren 1984-2006 publizierten wirtschaftspolitischen Sammelbände.

auf dem beigelegten CD-ROM gespeichert und die Zusammenfassungen der Beiträge erscheinen auf dem Papierträger in einer anderen Sprache (nach der Wahl des Verfassers auf Estnisch, Deutsch oder Englisch). Zum Sammelband gehört auch ein Chronikteil, wo Kurzbeiträge über die Tätigkeit der herausragenden, aus Estland stammenden Wirtschaftsforscher und Informationen über die Konferenzen und Publikationsmöglichkeiten veröffentlicht werden. Nach den heutigen Plänen wird der Sammelband künftig ein- bis zweimal im Jahr erscheinen, wobei eine Nummer vor allem Beiträge zu den volkswirtschaftlichen Themen und die andere Beiträge aus den betriebswirtschaftlichen Bereichen (jedoch aus wirtschaftspolitischen Sicht) enthalten könnte.

Mit den Beteiligten ist die Möglichkeit erörtert worden, dass weil jedes Jahr im Mai oder Juni der Sammelband (die sog. Nr. 1) mit bisher traditionell vorwiegend volkswirtschaftlicher Orientierung erscheint (und hauptsächlich mit der internationalen wissenschaftlichen Konferenz über die Wirtschaftspolitik in Värka verbunden ist), so könnte im Dezember oder Januar der zweite Sammelband (die sog. Nr. 2) mit der betriebswirtschaftlichen Orientierung erscheinen. Im zweiten Band könnten alle Teile der Betriebswirtschaft umfasst werden – Organisation und Management, Marketing, Unternehmensfinanzen, Controlling, Finanzmanagement u.a., aber auch zum Beispiel Unternehmensumwelt, Projektmanagement, Dienstleistungsdesign, soziales Unternehmertum, Tourismus und viele andere Bereiche. Auch die zweite Nummer des Sammelbandes sollte ein internationales Redaktionskollegium haben, die Beiträge sollten anonym vorzerezensiert werden und die Veröffentlichungsmöglichkeiten sollten für einen breiten Kreis von Autoren offen stehen.

Die Veröffentlichung des Sammelbandes mit betriebswirtschaftlichem Inhalt könnte teils auch mit der Veranstaltung der entsprechenden internationalen wissenschaftlichen Konferenz in Estland verbunden werden (warum nicht als Folge der Pärnuer Konferenzen in den Jahren 2003-2006?). Bestimmt findet sich hier Stoff zum Nachdenken und Diskutieren. Das Ziel des Vorhabens sollte eine möglichst anspruchsvolle und einheitliche, auf die Entwicklung von Gesellschaft und Wirtschaft orientierte Weiterentwicklung der Wissenschaft durch die Mithilfe von älteren und erfahreneren, aber auch jüngeren Wirtschaftsforschern sowohl aus Estland als auch aus anderen Staaten. Entwicklungsraum sowohl bei der Veranstaltung der Konferenzen als auch bei der Vorbereitung und Veröffentlichung der Beiträge gibt es noch genug!

Der Unterzeichnete bedankt sich an dieser Stelle bei allen Kolleginnen und Kollegen wie auch allen anderen Personen, mit denen er in Estland und anderen Ländern (vor allem in Deutschland) die Gelegenheit gehabt hat, sowohl bei der Vorbereitung und Durchführung der Konferenzen als auch bei der Vorbereitung und Veröffentlichung der Publikationen zusammen zu arbeiten. Da die Zahl dieser Menschen im Laufe der vergangenen Jahre ausserordentlich gross gewesen ist, möchte ich hier keine Namen nennen, um zu vermeiden, dass jemand aus Versehen unerwähnt bleibt. Liebe Mitwirkende, die Sie alle ihren Beitrag geleistet haben und jetzt diese Zeilen lesen und sich mitbeteiligt fühlen – mein innigster Dank gehört Ihnen! Doch, in allen

Sammelbänden sind die Namen der meisten Mitveranstalter (sowohl Personen als auch Unternehmen und Organisationen) in der Regel auch angebracht worden.

Ich wünsche allen Beteiligten weiterhin gute Zusammenarbeit, viel Erfolg und bestes Gelingen aller Vorhaben!

Tallinn, Pirita-Kose  
März, 2010

Matti Raudjärv

Anreger der Idee der Konferenzen und ihr Hauptveranstalter,  
Chefredakteur des Sammelbandes „Estnische Gespräche über Wirtschaftspolitik“



## ANNIVERSARY YEARS 2009-2010 FOR THE ORGANISATION OF CONFERENCES ON ECONOMIC POLICY AND PUBLISHING OF CONFERENCE PAPERS IN ESTONIA

2009 was the *25th anniversary of the organisation of the first scientific conference on economic policy in Estonia*. The first conference on economic policy was namely held in Tartu/Värskas (“ship conference”) at the end of May 1984.<sup>1</sup> True enough, we can only say that when looking back at it now, as perhaps no one could foresee at the time of the first conference that it would become a tradition.<sup>2</sup> After all, teaching of subjects of economic policy and research with conscious orientation to economic policy started at the Estonian institutions of higher education only during the first half of the 1990s.<sup>3</sup> After an interval of ten years the second conference on economic policy was already organised with the definite purpose in Tartu/Värskas at the end of May 1994.

2010 is an anniversary year as well, both for the organisation of conferences on economic policy and publishing of the respective research papers. 2010 is namely the *15th anniversary of the first international scientific conference on economic policy in Estonia*. The first scientific conference with the participation of economists from other countries was held in 1996, being at the same time the fourth conference held on that subject. The year 2010 is a milestone also because of *ten years of cooperation* (since 2001) *with German research publishers*. The cooperation started with the research publisher Berlin-Verlag Arno Spitz, the operation of which was continued in 2003 by Berliner Wissenschafts-Verlag. In 1994-2000, only the Estonian publisher Mattimar published the collections, and since 2001 the above-mentioned German and Estonian publishers have had close, substantial and effective mutual cooperation. The cooperation was necessary due to additional activities for the improvement of the quality and for the distribution of the publications.

The subjects of the conferences have mainly remained within the following fields during the years:

1. Entrepreneurship policy and corporate strategy
2. Fiscal and monetary policy
3. Environmental policy
4. Regional and local government policy
5. Sectoral economic policy
6. Social policy

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<sup>1</sup> See also: Raudjärv, Matti. *Majanduspoliitika teaduskonverentside traditsiooni kujunemine Eestis/ Die Tradition der wissenschaftlichen Konferenzen über Wirtschaftspolitik in Estland/ Development of the Tradition of Conferences on Economic Policy in Estonia. – Eesti majanduspoliitilised väitlused/ Estnische Gespräche über Wirtschaftspolitik/ Discussions on Estonian Economic Policy*. Berlin, Tallinn: BWV, Mattimar, 2008, nr. 16, lk. 119-139 (in Estonian, German and English).

<sup>2</sup> The 18th conference will be held in Värskas on 1-3 July this year, 2010.

<sup>3</sup> The first Chair of Economic Policy in Estonia was established at the Faculty of Economics of the Tallinn University of Technology by the undersigned in 1992. A year later a Chair of Economic Policy was established also at the Faculty of Economics of the University of Tartu.

## 7. Employment and income policy

Besides, many single papers have been written also in several other fields of economic policy.

Scientific conferences based on papers in the field of business administration were conducted in Pärnu in January 2003-2006, i.e. in four successive years. The reason was that several authors who studied business administration were not able to sufficiently relate their paper to economic policy. Such organisation of conferences on business administration in Pärnu or somewhere else may be continued and may pave the way to another tradition.

By now the organisation of the scientific conference on economic policy has become an activity which is separate from the publishing of the collection *Eesti majanduspoliitilised väitlused*<sup>4</sup> of papers on economic policy. While these activities are interrelated as the authors of many papers make presentations at the conference on the same subject, some of the presenters at the conference do not submit their paper for publishing at the collection. By now, the collections of papers have been included in international databases EBSCO (EBSCO Publishing, Ipswich, Massachusetts, USA) and ECONIS (Kiel Institute for the World Economy of the University of Kiel, Kiel, Schleswig-Holstein, Federal Republic of Germany). The collection has an international editorial board, the papers are anonymously peer-reviewed by above all foreign but also Estonian experts, and publishing is open to a wide community of authors.

The above-mentioned collection has been published in a new form since 2007<sup>5</sup> (and under the above-mentioned name), i.e. full papers (generally in English and German) are published on a CD and the abstracts of these papers in another language (at the choice of the authors either in Estonian, German or English) on paper (CD is included in the collection). Besides, the collection includes a chronicles column where short articles on the activities of outstanding economists coming from Estonia are published along with other information both on the organisation of conferences and publishing of papers. It is currently planned to publish the collection up to two issues a year – including above all papers on national economy in one issue and in the future papers above all on business administration (but still related to economic policy) in the other.

According to discussions with interested parties, after the annual publishing of the collection with the current traditional orientation, mainly on national economy (and predominantly in connection with the international scientific conference on

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<sup>4</sup> The collection is listed as a scientific journal in EBSCO databases; in the ECONIS databases as an annual collection/journal.

<sup>5</sup> “Eesti majanduspoliitilised väitlused / Estnische Gespräche über Wirtschaftspolitik / Discussions on Estonian Economic Policy”, which has been published under this name since 2007 and already as the 18th issue in 2010, is a successor to the collections on economic policy published in 1984-2006.

economic policy in Värskä), in May/June (No. 1), it would be possible to publish the second issue of the collection (No. 2), for instance, in December/January with business administration orientation. It could cover all parts of business administration – organisation and management, marketing, corporate finance, accounting, financial management, etc. and also, for instance, business environment, project management, design of services, social entrepreneurship, tourism entrepreneurship and many other fields. Also the second issue of the collection should have an international editorial board, with anonymous peer-review of papers and publishing open to a wide community.

The publication with the business administration content could also be partly linked to the organisation of an international scientific conference in Estonia in the future (why not as a continuation of the conferences held in Pärnu in 2003-2006). This certainly gives some food for thought and discussions. The goal should be to achieve as high-level and integrated research and development as possible, oriented to social and economic development through older and more experienced economists of Estonia and other countries and also economists of the younger generation. There is still a lot of room for development both in the organisation of conferences and preparation and publishing of publications!

The undersigned hereby thanks all the colleagues and people in Estonia and in other countries (above all in Germany) with whom he has had an opportunity to have cooperation both in the organisation/conduction of conferences and in the preparation and publishing of publications. As there have been very many such people in the course of the years, we would not like to list them by name lest someone accidentally remain unmentioned. If the people who have participated in the cooperation are reading these lines and feel that they have made a contribution – your help was sincerely appreciated! The names of most co-organisers (both individuals and companies/organisations) have also generally been printed in all collections.

We wish everybody involved good cooperation, success and best achievements in all your activities also in the future!

At Piritä-Kose in Tallinn  
In March, 2010

Matti Raudjärv

Initiator of the idea and main organiser of the conferences  
Chief Editor of the collection *Discussions on Estonian Economic Policy*

## MAJANDUSPOLIITIKA TEADUSKONVERENTSID EESTIS (1984-2010)

### WISSENSCHAFTLICHE KONFERENZEN ÜBER WIRTSCHAFTSPOLITIK IN ESTLAND (1984-2010)

#### SCIENTIFIC CONFERENCES ON ECONOMIC POLICY IN ESTONIA (1984-2010)

- I 1984 Ühiskondliku tootmise intensiivistamise probleemid Eesti NSV-s
- II 1994 Majandusteadus ja majanduspoliitika Eesti Vabariigis
- III 1995 Majanduspoliitika teooria ja praktika Eesti Vabariigis
- IV 1996 Aktuaalsed majanduspoliitika küsimused Euroopa Liidu riikides ja Eesti Vabariigis /I ja II/  
Aktuelle wirtschaftspolitische Fragen in den Ländern der Europäischen Union und in der Republik Estland /I und II/  
Topical Problems of the Economic Policy in the Member States of the European Union and the Republic of Estonia /I and II/
- V 1997 Eesti Vabariigi majanduspoliitika ja integreerumine Euroopa Liiduga  
Die Wirtschaftspolitik der Republik Estland und die Integration mit der Europäischen Union  
Economic Policy of the Republic of Estonia and Integration with the European Union
- VI 1998 Eesti Vabariigi integreerumine Euroopa Liiduga – majanduspoliitika eesmärgid ja abinõud  
Die Integration der Republik Estland mit der Europäischen Union – Ziele und Mittel der Wirtschaftspolitik  
Integration of the Republic of Estonia into the European Union – Goals and Instruments of Economic Policy
- VII 1999 Eesti Vabariigi majanduspoliitika ja Euroopa Liit  
Wirtschaftspolitik der Republik Estland und die Europäische Union  
Economic Policy of the Republic of Estonia and the European Union
- VIII 2000 Eesti Vabariigi majanduspoliitika tulemuslikkus ja Euroopa Liit  
Wirksamkeit der Wirtschaftspolitik der Republik Estland und die Europäische Union  
Effectiveness of the Economic Policy of the Republic of Estonia and the European Union
- IX 2001 Harmoniseerimine ja vabadus Eesti Vabariigi majanduspoliitikas integreerumisel Euroopa Liiduga  
Harmonisierung und Freiheit der Wirtschaftspolitik Estlands in EU-Integrationsprozess  
Harmonisation and Freedom in the Economic Policy of Estonia integrating with the European Union
- X 2002 Euroopa Liiduga liitumise mõju Eesti majanduspoliitikale  
Die Integration der Europäischen Union und ihre Wirkungen auf die Wirtschaftspolitik Estlands

- Effect of Accession to the European Union on the Economic Policy of Estonia
- XI 2003 Eesti majanduspoliitika teel Euroopa Liitu  
Die Wirtschaftspolitik Estlands auf dem Weg in die Europäische Union  
Estonian Economic Policy on the way towards the European Union
- XII 2004 Eesti majanduspoliitilised perspektiivid Euroopa Liidus  
Wirtschaftspolitische Perspektiven Estlands als Mitglied der Europäischen Union  
Economic Policy Perspectives of Estonia in the European Union
- XIII 2005 XIII majanduspoliitika teaduskonverents  
Die XIII wirtschaftspolitische Konferenz  
13<sup>th</sup> Scientific Conference on Economic Policy
- XIV 2006 XIV majanduspoliitika teaduskonverents  
Die XIV wirtschaftspolitische Konferenz  
14<sup>th</sup> Scientific Conference on Economic Policy
- XV 2007 Eesti majanduspoliitika – kolm aastat Euroopa Liidus  
Die Wirtschaftspolitik Estlands – drei Jahre in der Europäischen Union  
Economic Policy of Estonia – three Years in the European Union
- XVI 2008 Majanduspoliitika Euroopa Liidu riikides – aasta 2008  
Die Wirtschaftspolitik in den EU-Mitgliedsstaaten – 2008  
Economic Policy in the EU Member States – 2008
- XVII 2009 Majanduspoliitika Euroopa Liidu riikides – aasta 2009  
Die Wirtschaftspolitik in den EU-Mitgliedsstaaten – 2009  
Economic Policy in the EU Member States – 2009
- XVIII 2010 Majanduspoliitika Euroopa Liidu riikides – aasta 2010  
Die Wirtschaftspolitik in den EU-Mitgliedsstaaten – 2010  
Economic Policy in the EU Member States – 2010