

University of Tartu

Faculty of Economics and Business
Administration

**INFLUENCING
CONTINGENCIES ON
MANAGEMENT ACCOUNTING
PRACTICES IN ESTONIAN
MANUFACTURING
COMPANIES**

Toomas Haldma
Kertu Lääts

Tartu 2002

INFLUENCING CONTINGENCIES ON MANAGEMENT ACCOUNTING PRACTICES IN ESTONIAN MANUFACTURING COMPANIES

Toomas Haldma¹, Kertu Lääts²

Abstract

Current paper examines the management accounting practices of Estonian manufacturing companies, exploring the main impacts on them within a contingency theory framework. The methodology comprises an analysis of 62 responses to a postal questionnaire survey carried out among the largest Estonian manufacturing companies. On the one hand, the present research aims to confirm earlier findings related to the 'contingent factors' that influence management accounting, on the other, to identify possible new factors, such as, the legal accounting environment and shortage of properly qualified accountants.

¹ University of Tartu, Faculty of Economics and Business Administration, Ass. Prof. of Accounting Department, PhD, E-mail: toom@mtk.ut.ee

² University of Tartu, Faculty of Economics and Business Administration, Lecturer of Accounting Department, PhD student, E-mail:

kertu@mtk.ut.ee

Acknowledgements: The authors are grateful to prof. Robert Chenhall from Monash University for his assistance and to visiting prof. Gary Cunningham from Stuttgart University of Technology for his constructive comments. The financial support from the Estonian Science Foundation is herein acknowledged with gratitude.

TABLE OF CONTENTS

Introduction	7
1. Previous research in management accounting in the transition countries	9
2. The contingency approach framework	11
3. Research method.....	14
4. Analysis of the contingencies influencing the development of management accounting systems	15
4.1. Conceptual changes in the Estonian companies' management and cost accounting patterns during the period of transition.	15
4.2. Impact of environmental aspects	20
4.3. Development of cost and management accounting practices	23
4.4. Impact of technological aspects	28
4.5. Impact of organisational aspects	29
4.6. Need for further improvements	33
Conclusion	33
References	35
KOKKUVÕTE.....	39
Appendix 1. Net sales of the surveyed companies.....	41

Introduction

In the conditions of market economy and intensified competition, the management of a company, in order to be consciously competitive on the market needs to have objective information about the formation and shape of the company's performance, which are documented in mandatory financial statements. Therefore, the need for developing such cost and management accounting systems, which could provide adequate information about main impacts on cost characteristics and companies' performance, has grown rapidly in Estonia and all the other former socialist countries.

On the one hand, the habitual cost and management accounting practices of Estonian companies, can be described by the traditions and knowledge that have origins in their centrally planned economic background, and on the other, by the necessity to solve urgent problems of everyday management. Hence the management accounting systems (MAS) of the companies operating in the conditions of transition should provide adequate information, which would help managers take decisions at different management levels. To be able to make generalisations about the directions of development of MAS, both researchers and practitioners need more systematic information about the currently operating cost accounting and management accounting systems and the factors influencing them. Therefore, the present study is focused on the contingencies that influence companies' management accounting systems, with a particular emphasis on those operating in the transition economies. The paper aims to describe the stages and tendencies in the development of the management accounting issues in Estonian companies, analysing the impacts on MAS by means of the contingency approach. Considering the enormous changes that have taken place in the social and economic environments, it will be reasonable to expect significant changes to have occurred also in the management accounting systems. Thus, besides the description of the situation, the present study will examine the factors influencing the management accounting systems applied by Estonian manufacturing companies.

The paper makes two main contributions to the existing management accounting literature. Firstly, it has to be admitted that the number of studies focusing on developments in management accounting in the transition countries is limited, especially such studies that apply the contingency approach. Thus, at a more general level, our findings may shed light on the development of management accounting in other developing societies presently undergoing rapid changes. Secondly, we argue that the environmental aspect affecting the company management accounting system in the initial period of transition is distinguishable at two levels: the general business (external) environment level and the legal accounting environment level. Conceptual changes in the legal (financial) accounting level of a company would therefore serve as a precondition for the design and introduction of its management accounting area, and consequently the development of its management accounting system.

Although we will examine the management accounting position in Estonian companies, there are many features of contingencies that have influenced companies in other transition economies in a similar way. At the same time, our study involves uniquely Estonian features that set the accounting issues of the manufacturing companies we studied apart from those of the other transition countries. The differences result mainly from the different developmental levels of financial accounting and auditing regulations as a precondition for the design and introduction of the management accounting area and companies' MAS.

The paper is organised as follows. The next section is a brief overview of the previous investigations in the field of management accounting in the transition countries. The third section outlines the elements of the contingency theory of management accounting, subsequently discussing a research sample. The fifth section presents our findings on driving forces of the management accounting practices of Estonian manufacturing companies including catalysts for the design and formation of MAS, analysis of the role of environmental contingencies and development of management accounting practices, analysis of the role of technological and organisational contingencies in management accounting practices. Fi-

nally, section 6 presents some concluding remarks on the evolution of management accounting systems in Estonian companies.

1. Previous research in management accounting in the transition countries

Over the last decades, management accounting has emerged as a comparatively popular research topic in market economy countries. Different surveys on management accounting have been carried out in several European countries and their results have been reported in various publications (Bhimani, 1996; Drury *et al.*, 1993; Lukka, Granlund, 1996; Amat *et al.*, 1994).

Analysing management accounting research done in the Eastern and Central European transition countries on the basis of the publications in *Management Accounting Research* and *The European Accounting Review*, and presentations at the Annual Congresses of the European Accounting Association, we discovered that in these countries management accounting is still in its initial stages of development and in the process of developing into a research area in its own right.

During the last eight years (1994–2001) only a small number of papers dedicated to the practice and development of management accounting in the Eastern European countries have appeared in *Management Accounting Research*. Proceeding from the information at the authors' disposal, there were only two of them: in 1994 a paper about accounting in an east-west joint venture (Southworth, 1994) and in 2000 a paper about management accounting practices in a Hungarian chemical company (Vamosi, 2000). The latter discusses institutionalisation aspects of management accounting.

The European Accounting Review has published various papers about accounting and related areas in the Eastern European countries during the last nine years (1993–2001). Several publications address the subject of financial accounting and auditing in Poland, Czech Republic, Romania, etc. In 1995 *The European Accounting Review* dedicated a special edition to accounting in Central and Eastern Europe, which comprised an introductory article followed by a number of papers analysing the characteristic features of de-

velopment of accounting in Poland, the Czech Republic, the Baltic States, Hungary, Romania, Slovenia, Yugoslavia, and Russia. All the papers in this edition concentrated on financial accounting, whereas no aspects of development or practice of cost accounting and management accounting were even mentioned in the introductory paper (Bailey, 1995). This does not mean that cost accounting and management accounting did not exist at that time or was not considered to be a research topic at all. The above-mentioned fact merely confirms that the transition countries prioritised the development of financial accounting, while management accounting was only in its initial stages of development. The main reasons for that will be analysed later on.

In several European countries different surveys on management accounting have been carried out. In the Eastern and Central European countries, proceeding from the information at the authors' disposal, initial surveys of the design of companies' cost and management accounting systems have been carried out in Poland (Sobanska, Wnuk, 1999; Szychta, 2001 etc.) and in Estonia (Haldma, 1997). A comprehensive overview of the research projects and publications addressing the state of cost accounting and management accounting in Poland in 1993–2000 was given by Szychta (Szychta, 2001).

To sum up, mainly the investigations on management accounting in the Eastern and Central European countries indicate state-of-the-art-type studies (except Varmosi, 2000). One of the characteristics of these studies is the fact, that the findings are reported without using any theoretical framework. In the transition economies, research projects on management accounting practices using the contingency approach were conducted by Anderson and Lanen (1999, India), and Luther and Longden (2001, South Africa). Consequently, the development of the management accounting practices in the Eastern and Central European countries has not yet been studied in detail.

2. The contingency approach framework

The contingency approach to management accounting is based on the premise that there is no universally appropriate accounting system applying equally to all organisations in all circumstances (Emmanuel *et al.*, 1990). Rather it is suggested that the particular features of an appropriate accounting system will depend upon the specific circumstances in which an organisation finds itself. How effective the design of an accounting system is depends on its ability to adapt to changes in external circumstances and internal factors.

We presume that organisations operate as open systems, being concerned about their goals and responding to external and internal pressures. The contingency-based approach assumes that management accounting systems are adopted in order to assist managers in achieving some desired company outcomes or goals. If a management accounting system is found to be appropriate, then it is likely to provide enhanced information to the individuals who then can take improved decisions and thus achieve the organisational goals in a better way.

The major external factors that have been examined at the company level in management accounting and control (including cost accounting) research are external environment (Khandwalla, 1977; Merchant, 1990; Chapman, 1997; Hartmann, 2000), and national culture (Hofstede, 1984; Harrison, 1992; O'Connor, 1995). The most widely emphasised research aspects are environmental uncertainty and hostility. The hardly predictable environmental elements have their own impact on organisational structure, performance evaluation, budgeting and budgetary control, and are associated with more open and externally focused financial accounting systems. Environmental hostility from intensive competition stresses the importance of formal control and sophisticated accounting (Khandwalla, 1972; Otley, 1978).

The most common internal factors that have been examined in relation to management accounting are organisational size (Khandwalla, 1972; Bruns, Waterhouse, 1975; Merchant 1981), technology (Khandwalla, 1977; Merchant, 1984; Dunk, 1992), and com-

panies' strategies (Miles and Snow, 1978, Gupta and Govindarajan, 1984; Simons, 1987; Chenhall, Morris, 1995).

As organisations become larger, the need for managers to handle greater quantities of information increases to a point where they have to institute controls, such as rules, documentation, specialisation of roles and functions, extended hierarchies and greater decentralisation down to hierarchical structures (Child and Mansfield, 1972). Khandwalla (1972) found that large firms were more diversified in product lines, as well as more divisionalised, and employed mass production techniques and more sophisticated controls. According to Merchant's study (1981), large companies are more decentralised and use more sophisticated budgets in a participative way.

Technological contingency factors include the nature of the production process, its degree of routine, how well means-end relationships are understood and the amount of task variety (Emmanuel, *et al.*, 1990). More standardised and automated process technologies are served by more traditional formal management control systems with highly developed process controls (Khandwalla, 1972), high budget use (Merchant, 1984) and high budgetary controls (Dunk, 1992). Untight use of budgets is less frequently found in the more predictable and automated process, and will be positively related to less automated, less predictable job/batch type technologies.

Figure 1 shows the contingency-based theoretical framework. The described process influences the management accounting practice and effectiveness of performance measurement and evaluation. The contingencies are divided into two general groups: external and internal factors. External factors indicate the features of external environment at the level of business and accounting. Environmental factors impact both on the internal characteristics of an organisation and its management accounting practice. For example, fierce competition influences the choice of strategy, organisational structure and also the application of appropriate cost management and control. Internal contingencies are determined as organisational aspects, technology and strategy. The effectiveness of performance measurement and evaluation depends on the internal

factors and the management accounting practice. Additionally, feedback from the effectiveness of performance measurement and evaluation of the management accounting practice can be considered.

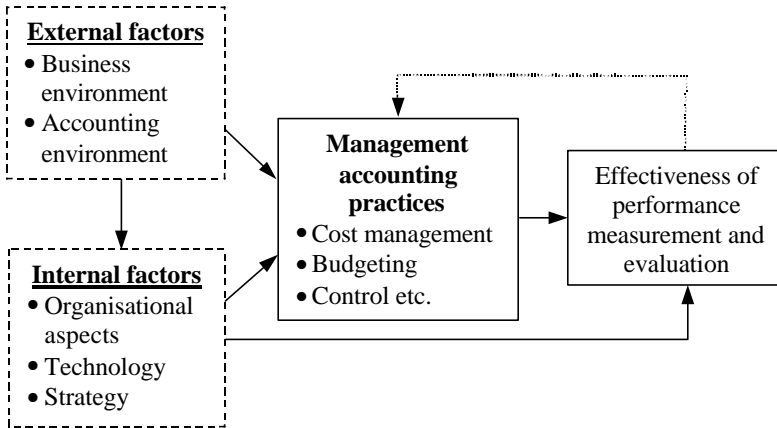


Figure 1. Theoretical framework of contingency approach.

Effectiveness can be defined by various measures which all have their advantages and disadvantages. We defined effectiveness as managers' satisfaction with their performance measurement and evaluation.

The list of contingencies and relations in our theoretical framework cannot be considered exhaustive, since we were unable to identify and include all factors and impacts. Contingency-based studies assume the existing link between nature and the use of the MAS and subsequently enhanced performance. At the same time, other behavioural and organisational aspects also influence better goal achievement (e.g. job satisfaction, working place environment, formal and informal control, and participation in the budgeting process). In the present paper we focus on the following major classes of contingencies: the external environment, technology and organisational aspects. These elements and their different impact on companies' accounting systems are further elaborated on.

Empirical research of contingency theory in management accounting has been conducted at different levels (industry, firm, and units of a firm), considering different contextual factors. The present study was performed and analysed at the level of a company or major business unit.

3. Research method

Current research builds on contingency theory and exploratory statistical analysis of the factors influencing MAS in Estonian manufacturing companies. Herein we will review the principles used to construct the data set for our work.

The empirical data were gathered by a postal survey in 181 larger Estonian manufacturing companies. To develop an accurate mailing list, each company was telephoned and the names and addresses of business units were identified, as well as the name of the most eligible person within each business unit to complete the survey. These were typically financial directors, chief accountants, senior management accountants or chief executives. These steps were considered important to increase the accuracy of the survey responses. In Estonia the survey was pilot tested with a group of chief accountants and financial directors to refine the design and focus the content. The mailed survey package included an introductory letter explaining the purpose of the research, a copy of the survey, and a pre-paid envelope — for returning the survey. The study aimed at the design of cost and management accounting systems in Estonian companies and was carried out in 1999. The mailing resulted in 62 usable responses or a 34.3% response rate. It seems to be acceptable, compared to other surveys carried out in the area (Kind, 1985; Reichmann, Kleinschnittger, 1987; Drury *et al.*, 1993; Andersen, Rohde, 1994).

On the basis of the returned surveys a statistical analysis was carried out, using one-way analysis, two-way analysis and Fisher's Exact Test.

The responding companies in Estonia represented 15 different branches of manufacturing, such as energy supplying, wood industry, food industry (covering dairy, meat, fish, tobacco products and

drinks), chemical, metal, textile industry, etc. The predominant industries were food industry represented by 15 companies, textile industry by 10 and wood industry by 8 companies. A smaller number of companies represented other branches of industry.

The population for the study comprised the country's largest manufacturing companies. Therefore, the findings of this study are related to the largest manufacturing companies and should not be interpreted as relating to the general population of manufacturing companies. In as much as size is associated with the availability of resources to experiment with a range of management and accounting practices, it is likely that the sample included a greater proportion of companies employing "advanced practices" than the total population of manufacturers. Hence, the study has its limitations if we want to generalise the results to all manufacturing companies in Estonia.

The categories of information that have been included into the survey cover the following aspects of MAS: background, cost measurement and appraisal in financial accounting, cost element accounting, cost centres accounting, costing methods, pricing principles, budgeting, and internal performance measurement systems.

4. Analysis of the contingencies influencing the development of management accounting systems

4.1. Conceptual changes in the Estonian companies' management and cost accounting patterns during the period of transition.

The process of development and implementation of cost accounting and management accounting systems in Estonia can be characterised by a competition between the traditional customs and knowledge having their origins in the country's centrally planned economic background, on the one hand, and the need to solve urgent everyday management problems, on the other. In centrally planned economies companies never had to face such commercial

problems as, for instance, what products should be produced or on which markets they should be sold to bring them into profit. Decision-making was highly centralised and accounting information was considered significant neither in the decision-making process nor for performance evaluation. The income statement used at that time was based solely on the 'cost by nature' format. As state officials fixed product prices, companies had to produce accurate information, especially about their production costs. As a consequence of the unified measures adopted by the State (based on a unified chart of accounts applied by all Soviet companies), full costing became compulsory for all industrial enterprises. The full costing approach was also supported by academics. A view was spread, according to which the product cost had to include both manufacturing and selling costs and all the other expenses of the company (Petrova, 1986). Enthoven has pointed out that in the conditions of a centrally planned economy, cost and management accounting were not treated as independent branches, but as integral parts of unitary financial accounting (Enthoven *et al.*, 1993).

Under a centrally planned economy, Estonian companies introduced several aspects of cost accounting, but this served the objectives of financial accounting, statistics and centralised management. At that point, we fully agree with Enthoven. However, it has to be admitted that in the highly centralised decision-making framework, flexible rearrangements in the companies' management systems of external environmental impacts were not needed. Therefore, we argue that within the Soviet accounting framework, management accounting existed in a very narrow sense. Hence, during the first stage of transition, the MAS was a conceptually new issue in the development of the companies' accounting system whose design and introduction necessitated a conceptual change in the thinking of the companies' financial personnel.

The first step towards the formation of a market economy accounting environment in Estonia was made as early as 1990 when the Estonian Regulation on Accounting was passed. This regulation marked the first attempt made in the country to establish a legal basis for accounting requirements consistent with the internationally accepted accounting principles. As pointed out by Bailey (Bailey *et al.*, 1995), this event marked the beginning of the spread

of disharmony in accounting on the territories comprising the USSR. With regaining independence in 1991, the economic situation of Estonia changed dramatically. Besides other transformations, an entirely new role was attributed to accounting by the market forces. The need to create and develop conceptually different management accounting systems was growing rapidly. Prompted by the changing needs of companies, cost accounting started to expand, as a result of which management accounting emerged.

While in the market economy countries the fundamental nature of management accounting systems and practices have remained the same throughout the last decades (Drury *et al.*, 1993), the application of accounting within the management process has changed to some degree (Bromwich, Bhimani, 1994). At the same time, both accounting as a whole and financial as well as management accounting in Estonia and the other transition economies underwent evolutionary changes in the first half of the 1990s.

The next, even more substantial and complex step in the accounting reform of Estonia relates to the Estonian Accounting Law (EAL), which came into effect in January 1995. Since its enforcement, the concepts of financial accounting that Estonian companies are guided by have improved essentially. In accordance with the EAL, companies can now use one of the two income statement formats: either the 'cost by nature' format (already introduced by the Regulation on Accounting) or the 'cost by function' format (which was new to the accounting practices of Estonia). In addition to establishing the legal accounting framework, the law urged companies to improve their cost accounting and management accounting systems.

The EAL states that the values of inventories and the cost of goods sold should be based on manufacturing costs (Estonian Accounting Law, 1994). This is a conceptual difference in comparison with the full costing methods characteristic of and solely used by a centrally planned economy. Although the law stipulates no systematic requirements for companies' cost accounting systems, the implementation of the 'cost by function' income statement format made it necessary to pay more attention to objective cost allocation

methods in order to receive more objective information for product-mix decisions, profit budgeting and profit-conscious pricing.

74% of the respondents of the survey had made changes in different cost aspects concerning their accounting systems in the years 1996–1999. Half of the respondents had planned to make such changes in their cost accounting system, which would yield more detailed and segmented cost information. Among the main areas needing improvement, the following were pointed out: the companies' cost allocation methods, the product costing methods, the implementation of variable costing with the contribution margin approach, and the introduction of the activity-based costing system.

The respondents to our survey admitted that mainly two driving forces had made them develop their companies' cost accounting systems, namely, the need for more detailed divisional (segmental) performance information (66% of the respondents) and changes in the organisational structure (42%) (see Table 1). Thus, the growing market pressures have raised the companies' awareness about the need for more detailed cost information. Such catalysts as changes in production technology and market structure had comparatively less influence on the improvements made by the companies in their cost accounting systems (see Table 1).

Table 1

**Initiatives for changes in cost and management
accounting systems during 1996- 1999**

Reasons	Number of companies	%
Need for more detailed information	41	66
Changes in organisation structure	26	42
Changes in production structure	16	26
Changes in production technology	10	16
Changes in market structure	8	13
Other reasons	6	10

Subsequently, we will try to set the expanded list of causes into the contingency approach framework. In the survey, we asked the respondents to indicate on a five-point scale what significance any of the catalysts had had on the improvement of their cost accounting and management accounting systems.

Table 2 describes the drivers that have either sped up or slowed down the transformations in the Estonian companies' cost and management accounting systems. While all of them had a generally positive (i.e. speeding-up) influence, the most forceful among them were the need for more detailed divisional (segmental) performance information, availability/non-availability of competent financial staff, changes in the managerial practices, and advances in information technology. According to Table 2, among the other drivers the change of production technology and the impact of retraining programmes had the lowest standard deviation and a tendency to spread, in the respondents' opinion. The opinions differed most about how the level of satisfaction with the performance measurement systems influenced the change of the accounting systems.

Table 2

**Contingencies that have slowed down or speeded up
changes in accounting systems**

*(1 $\frac{3}{4}$ significantly slowed down, 2 $\frac{3}{4}$ slowed down in some degree,
3 $\frac{3}{4}$ no effect, 4 $\frac{3}{4}$ speeded up to in some degree,
5 $\frac{3}{4}$ significantly speeded up)*

Contingencies	Contingency characteristic*	Mean	Stand. deviation
Need for more detailed divisional (segmental) performance information	OA	4.36	1.12
Availability/non-availability of competent financial staff	OA	4.25	0.81
Changes in managerial practice	OA	4.07	1.02
Advances in information technology	OA	3.91	1.17

Contingencies	Contingency characteristic*	Mean	Stand. deviation
Tightening competition	E	3.84	1.07
Change of the organisation structure	OA	3.70	1.01
Impact of retraining programs	E	3.56	0.76
Dissatisfaction with performance measurement systems	OA	3.52	1.23
Change of the production technology	T	3.48	0.72
Change of the production structure	E	3.44	0.89
Benchmarking of the cost and management accounting methods	E	3.39	0.82
Change of the market structure	E	3.36	0.82

* E — environmental aspect,
 OA — organisational aspect,
 T — technological aspect

The driving forces behind the emergence of cost accounting and management accounting (see Table 2) reflect different environmental, technological and organisational aspects of the companies' accounting patterns. Therefore, in what follows they will be regarded as the contingencies that influence cost and management accounting in the Estonian manufacturing companies.

4.2. Impact of environmental aspects

The environment is a term used to explain a number of facets. Relevant features of an organisation's environment which affect the design of its accounting system include the degree of predictability, the extent of competition faced on the market place, the

number of different product-markets faced by a degree of hostility (price, product, technological and distribution competition) (Emmanuel *et al.*, 1990). It is suggested that increasing structural complexity will lead to the addition of new accounting tools to those already in use.

Considering the above-mentioned role of financial accounting in the formation process of the accounting framework during transition, we argue that the environmental aspects affecting companies' management accounting systems in the initial period of transition can be distinguished at two different levels:

- 1) the general business or external environment level and
- 2) the legal accounting environment level.

The external environment will affect the nature of the accounting system, for any particular accounting system chosen aims to facilitate the companies adaptation to the environment it faces. In the course of transition from a centrally planned to a market economy, a company's accounting system is affected by two mutually connected changes related to the ways they utilise accounting information (Alver, *et al.*, 1996):

- 1) a change from the state to the business community as the primary user;
- 2) a change from the passive role to an active role in the stimulation of economic activity.

In the second half of the 1990s, the development of the general business environment in Estonia was affected by the following events:

- conceptual changes in the regulatory context (enforcement of the Accounting Law in January 1995 and of the Commercial Code in September 1995, etc.);
- ownership changes (the most intensive period of privatisation was 1993–1995);
- development of the capital market (the Tallinn Stock Exchange opened in May 1996);
- recession on the Eastern markets (the Asian crises in 1997, the Russian crisis in 1998).

In the main, these systematic factors had an indirect impact on the companies' management accounting system; but the above-men-

tioned recession on the Eastern markets tightened the competition on the domestic markets. Increased competition and raised production quality standards required adoption of a more sophisticated and market-sensitive internal management accounting system.

From the list of drivers given in Table 2, the following items indicate what environmental aspects influence the accounting system:

- the need for a more detailed divisional (segmental) performance information;
- tightening competition;
- change of production structure;
- benchmarking of the cost and management accounting methods;
- change of the market structure;
- retraining programmes.

A more competitive marketplace, its greater dynamism and heterogeneity, and a more intensive operating environment all broadly suggest that the accounting system should become more sophisticated and complex, and capable of evaluating managerial performance in more varied ways. The need for more detailed divisional (segmental) performance information reflects both environmental and organisational aspects of impacts on management accounting, depending on a particular performance unit involved. In our conception performance units such as product groups, client groups, sales regions, etc. reflect environmental aspects, while such performance units as organisational units reflect an organisational aspect. Concerning the environmental aspects, more than a half of the surveyed companies based their performance measurement on the product groups (52% of the respondents), much fewer on their client groups (20%) and quite few on the sales regions (17%). The main part of the companies monitored and evaluated the profits and profitability measures of different internal business units and products or product groups, while only a few companies stated that they measured the profitability of their client groups and sales regions. Consequently, the companies' performance measurement system was manufacturing-oriented rather than market-oriented.

Tightening competition; changes both in the market structure and in the production structure precipitated the need for a market-sen-

sitive attitude in performance measurement and for receiving objective and appropriate cost information about different cost units (cost objects). No longer could the companies expect to cover costs automatically, simply by engaging in full cost accounting or by charging their customers a full-cost-based price. A challenge for variable costing had emerged.

4.3. Development of cost and management accounting practices

A comprehensive cost accounting system serves as a basis for understanding the process of cost formation in the companies' value chain, in order to analyse and manage cost behaviour. Cost accounting generally includes four broad areas: cost elements (types) accounting; cost centre accounting; cost objects (cost units) accounting, and operative performance measurement (Mayer, *et al.*, 1994). Cooper and Kaplan (Kaplan, Cooper, 1998) distinguish four different stages in the integration of cost and performance measurement systems:

- 1) Stage I systems: systems, which are inadequate for financial reporting;
- 2) Stage II systems: financial reporting driven systems;
- 3) Stage III systems: develop customised, managerially relevant, but stand-alone systems;
- 4) Stage IV systems: integrated cost management and financial reporting systems.

To succeed the fourth stage level, it requires a high degree of interaction between management accountants and operational managers, common understanding and mutual trust between accountants and managers. This objective should be based on common understanding about the process of formation of expenses according to the technological map of the value chain processes of the company. Although there has been a big change in perceiving the role and relevance of cost and management accounting, the managers of Estonian companies still interpret their objectives, methods and influence on management decisions in differing ways.

The majority (80%) of the companies divides their costs into manufacturing and non-manufacturing ones, 58% into variable and fixed ones, and 75% of the companies into direct and indirect ones. Although in formal terms cost analysis has been widely introduced, many companies have chosen overly broad accounting segments and units. The analysis of direct-indirect costs was carried out mainly within an organisational dimension and that of variable-fixed costs within a product dimension. On the issues of cost accounting the survey yielded the results shown in Table 3.

Table 3

**Principles and methods used in product costing
by the Estonian manufacturing companies**

Product Costing Principles	Proportion (%) (N=62)
Full costing	54.8
Variable costing	38.7
Variable costing and full costing	6.5
Product costing methods	Proportion (%)
Process costing	51.3
Job-order costing	33.7
Both	15
Activity-based costing	7

Concerning the principles of product costing, our survey indicated that 54.8% of the companies follow the principles of full costing, 38.7% those of variable costing and 6.5% both of them. From among the product costing methods 51.3% preferred process costing and 33.7% job-order costing, while 15% of the companies used both methods. In our estimation, only 7% of the respondents use activity-based costing (ABC).

Our survey indicated that manufacturing overheads were usually allocated on a volume basis. As the main allocation bases, direct labour costs (42% of respondents), sales volume (38%), direct labour hours (28%), direct materials (26%), machine-hours (16%)

and the number of operating cycles (8%) were used. Non-manufacturing overheads were usually assigned according to the manufacturing costs of the products, to a lesser degree according to sales volumes. Our survey also indicated that 50% of the companies used up to two and 70% up to four different allocation bases. In most companies direct costs are not connected with technological maps of the manufacturing process, which implies an arbitrary choice of cost allocation rates. Unfortunately, such a limited approach could not yield a comprehensive picture of the cost formation process in manufacturing.

To measure the operative performance of different operating segments, internal reporting systems had been introduced by 82% of the responding companies. A large number of the companies, however, compiled their internal performance reports on the basis of their financial accounting statements. The 'cost by nature' income statement format was used by 48% and the 'cost by function' format by 53% of the respondents. Four companies (6%) used both formats. Variable costing with the cost-volume-profit analysis offered a convenient and more objective way to get an idea about the cost formation process in manufacturing, to fix the price ranges and to realise an active pricing policy. However, in parallel with the above-mentioned income statement formats, a couple of companies have used the contribution margin approach, although to a limited extent. 21% of the companies prepare their internal income statements according to the multi-step and 28% according to the single-step contribution margin approach. This tendency shows that the Estonian companies' management accounting systems have to provide more detailed cost information in order to help managers to take decisions and manage performance. There is an interaction between the external and internal aspects of reporting: objective information about the cost of activities, products, services, etc. Serve as a foundation for an adequate evaluation of the cost of the goods sold and inventory. Consequently, cost accounting serves as an information basis for the performance measurement systems.

The development of cost accounting and management accounting and the application of the variable costing and contribution margin approaches in performance measurement are more associated with

the efforts of academics and consultants than those of practitioners. In the mid-1990s, most active practitioners in the field of accounting had been trained in the conditions of a centrally planned economy. As mentioned above, a full costing approach could not provide the management with objective information on costing, pricing and cost management. Our interviews in the companies revealed a critical shortage of competent financially trained staff. Academic knowledge of accounting was infiltrating into the cost accounting and management accounting practices of the companies little by little. Thanks to the companies' close contacts with the teaching staff of accounting in the educational establishments, seminars were held for the top management and employees in accountancy. This helped to transmit new ideas and techniques into the actual practice.

Regarding the legal accounting environment as a driver influencing the development of cost and management accounting, we suggest that this is a characteristic feature of the transition economies. Our suggestion rests on the following conceptual moments. Among the other improvements made in accounting during the transition period, the first priority was given to financial accounting. This approach was justified, as it was first and foremost necessary to guarantee that the companies' of the country would be able to prepare their financial statements in compliance with the Estonian Accounting Law (EAL) and the generally accepted accounting principles. After the EAL was enforced, the companies were required to conceptually redesign their financial accounting systems. On the other hand, the compulsory reconstruction of their financial accounting systems did not let the companies pay enough attention to the improvement of their internal accounting systems (including cost accounting, management accounting, management control, etc).

Proceeding from the previous statements, we argue that the conceptual changes in financial accounting characteristic of the Eastern and Central European transition countries served as a precondition for the design, introduction and improvement of cost accounting and management accounting, and the development of companies' management accounting systems. Market economy countries have not experienced such a conceptual change in finan-

cial accounting in such a short time during the last decades. We support Virtanen et al. (1996) and Scherrer (1996) who say that the evolution of financial accounting has influenced the development of cost accounting and management accounting.

Proceeding from the four-stage model of cost system evolution designed by R. Kaplan and R. Cooper (1998) we contend that all surveyed companies have cost systems that are adequate for financial reporting purposes and hence they have overpassed first stage broken systems. Following our estimation most of the Estonian companies are still in second stage, where cost and performance information is available only from the system used to prepare periodic financial reports. Unfortunately second stage cost systems are completely inadequate for the key managerial purposes (Kaplan, Cooper, 1998). Only few companies in Estonia have migrated to third stage. Any of the companies have not moved to the stage four, where cost and performance measurement information become integrated into the mainstream fabric of organisational reporting and managerial processes.

Studying the classification of the expenses in the chart of accounts, it becomes evident that in 1990–1995 the most frequently used classification was based on ‘cost by nature’, whereas since 1995, the classification based on ‘cost by function’ has been preferred. For example, the expense classification based on ‘cost by function’ was used by 13% of the respondents in 1996 and by 60% in 1999. This can be viewed as a conceptual change. Wider implementation of cost classification and the ‘cost by function’ format of the income statement induced a debate about the allocation methods of fixed overhead costs used by Estonian companies. This opened the way to improving the cost allocation and product costing methods, the implementation of variable costing with the contribution margin approach, and the introduction of the activity-based costing system. But 65% of the companies were still using the ‘cost by nature’-based classification and a quarter of the respondents were using both classification bases simultaneously. However, 53% of the responding Estonian companies included non-manufacturing costs into product costs. A large majority used the ‘cost by nature’ income statement format. Consequently, the pressure from the legal accounting environment to improve the methods of cost alloca-

tion and product costing, on the one hand, and cost accounting, on the other, serve as an information basis for compiling true and fair financial statements.

4.4. Impact of technological aspects

It is argued that the production process will affect the selection of the type of costing system. A production facility that produces individual products to specific criteria will require a very different costing mechanism to the one that is geared up to mass production with high joint fixed costs.

Due to product inter-dependence, there is a technological constraint on the design of an accounting system. New technology will evidently lead to a change in cost structures. Therefore, while the technological progress continues, the accounting system might probably become more complex and sophisticated, and capable of following cost appearance in the manufacturing process more precisely. From among the drivers of cost accounting and management accounting given in Tables 1 and 2 the change of production technology reflects a technological feature. As mentioned above, this factor failed to have a sufficient impact on the companies' accounting practices in Estonia. However, the tightening global competition and increasing fixed costs associated with the use of advanced manufacturing technologies have prompted the need to analyse, allocate and manage fixed costs better. In 63% of the responding companies the share of manufacturing overheads in the manufacturing costs was up to 30%, while in 11% of the companies it exceeded 50%. 13% of the companies, unfortunately, were not used to distinguishing the manufacturing overhead costs.

Detailed cost centres accounting helps us to understand where the costs appear and to clarify the connections between the costs and cost objects. An analysis of the implementation of cost centres revealed that 72% of the companies have introduced cost centre accounting. At the same time, manufacturing overheads are measured in the cost centres at the equipment level by 14% of the companies, at the production line level by 27%, and at the sub-unit or company level by 59% of the companies. These results indicate that manu-

facturing overheads are broadly defined, which in the future may raise potential difficulties when trying to relate these costs with their cost objects (products), and may cause problems in the whole product costing area. It is apparent that the application of cost centre accounting tends to increase in line with company size. As indicated by our survey, 90% of the companies whose sales volumes exceeded 6.5 million euros applied cost centre accounting, while only 59% of the companies with smaller sales volumes did so. Our study revealed no clear distinction in the MAS design among different production technologies. The allocation of maintenance department costs among production cost centres was in 47% of the cases based on a company-wide rate and in 26% of the cases on a plant-wide rate. Such behaviour refers to inaccurate information about the consumption of these supporting services by the manufacturing process of the particular products. In order to get objective cost information and to avoid potential problems, the companies would need to use more specified cost drivers.

4.5. Impact of organisational aspects

From the list of drivers in Table 2, the following items reflect the organisational aspects influencing the accounting system:

- need for more detailed divisional (segmental) performance information;
- availability/non-availability of competent financial staff;
- changes in managerial practice;
- advances in information technology;
- changes in the organisational structure;
- dissatisfaction with the performance measurement system.

These have been the most crucial drivers speeding up the changes in the management accounting practices of the Estonian manufacturing companies. Among these the need for more detailed divisional (segmental) performance information had the strongest influence on the changes in the MAS. As mentioned above, the need for more detailed divisional (segmental) performance information reflects both environmental and organisational aspects of impacts on management accounting, depending on the performance unit in-

volved. Such performance units as product groups, client groups, sales regions etc. indicate environmental aspects in our conception and their impact was analysed in part 4.2. Organisational units as performance units reflect organisational aspects. In most companies (68%) performance measurement is based on different operating segments or divisions. The majority of the companies monitored and evaluated the profits of different internal business units and products or product groups, only a few companies stated that they measured the profitability of their client groups and sales regions. 74% used profitability as a performance measurement indicator and 26% did not measure profitability at all. The profitability calculations were predominantly based on the profits of the business units and products.

We divided our research population into two groups: smaller companies with sales less than 13 million euros and bigger companies with sales over 13 million euros (see Appendix 1). As a rule, smaller companies preferred to prepare and use budgets for the company as a whole (92%). Only 47% of these companies prepared budgets for internal business units and 51% applied more detailed cost budgets. The performance measurement and variance analysis between the budgeted and actual results was also carried out at company level, and to a lesser extent at internal business unit level.

Larger companies used more sophisticated budgets. They all composed budgets for internal business units and 90% of them used more detailed cost budgets. They used more sophisticated performance measurement systems (e.g. for evaluating the performance of different products or business units, but also that of different regions or customer segments). This result supports the findings by Merchant (1984), according to whom it is large companies that use more sophisticated budgets.

Internal performance measurement and reporting systems were introduced in 82% of the responding companies. Nevertheless, most of the companies used the financial accounting statement formats as a source for internal reporting. The contribution margin approach was applied to a lesser extent. There was a difference between larger and smaller companies: 50% of the bigger and 18% of

the smaller companies applied the contribution margin approach in their internal reporting.

It is apparent that the level of sophistication of a cost accounting system tends to increase in line with company size. Our survey indicated that larger companies were more inclined to record their costs at production line and equipment level, while companies with sales revenues under 13 million euros evaluated their costs at company or department level.

Luther and Longden (2001) found a positive relationship between pressure exerted by controlling shareholders and management accounting change. All the companies involved in our sample (62 companies) were privatised. In our survey we distinguished between three groups of companies on the basis of their independence concerning the design of their internal accounting systems and foreign capital involvement:

- Single companies (incl. parent companies) which were responsible for and independent in designing their internal accounting system (incl. cost accounting, internal performance measurement, etc.) — 36 companies (58% of the population). In this group, only in two companies the majority of shares was owned by foreign capital (5.5% of the group population).
- Subsidiaries of the group which were responsible for and independent in designing their internal accounting system — 15 companies (24.3% of the population). In eight companies the majority of shares was owned by foreign capital (53.3% of the group population).
- Subsidiaries of the group in which the design of their internal accounting system was regulated by parent companies — 11 companies (17.7% of the population). In ten companies the majority of shares was owned by foreign capital (90.9% of the group population).

We analysed these companies' cost accounting and management accounting aspects considering their independence in designing their internal accounting systems and foreign capital involvement in them, on the one hand, and implementation of more advanced cost accounting and management accounting approaches (variable

costing, the contribution margin approach, activity-based costing), on the other. We did not get any clear evidence to support the idea that shareholders' pressure and foreign capital involvement actually directly affect the designing of accounting systems. Only in one aspect certain evidence was found. In 46% of the companies, the subsidiaries of the group which were independent in designing their internal accounting system (second group) implemented variable costing (on average in 38.7% of the companies). However, concerning the ownership aspect (foreign capital involvement), no difference was revealed between the companies' MAS design.

The companies which implemented the variable costing and the contribution margin approaches ranked such drivers of management accounting as 'availability/non-availability of competent financial staff' and 'changes in managerial practice' highest. This may be attributed to increased application of modern management techniques as a result of increased awareness, education and re-training programs. On the other hand, the shortage of qualified accountants may serve as a crucial aspect, as far as application of contemporary management accounting techniques is concerned.

In internal reporting the main accent has been stressed in monthly and annual reports. Additionally, companies also prepare the operating cost reports according to the organisational structure. The results indicate that half of the companies used different principles when designing their budgets and internal reports. All the companies with sales over 13 million euros stated that they prepared budgets for business units using the contribution margin approach, but only half of them evaluated the performance in the reports according to the same principle. Among the smaller companies, the contribution margin approach was used in budgeting by 46% of the companies and in internal performance measurement (reporting) by 19%. The insufficiently related budgeting and reporting systems indicate that many companies do not use accounting information systematically for clear and useful purposes. This may raise serious problems for managers who plan and control their companies' performance.

4.6. Need for further improvements

The areas of cost accounting and management were highly important issues for 70% of the companies, whereas 5% of the respondents found that these areas had no significance for them.

As mentioned above, dissatisfaction with the performance measurement system, which was unable to provide appropriate information for decision-making, served as a significant catalyst in improving the cost accounting and management accounting systems. In the survey we requested the respondents to assess on a three-point scale their degree of contentment with their companies' performance measurement system. Among the surveyed population, 20% of the companies stated that they were satisfied, 68% were partly satisfied and 10% were dissatisfied. There was no clear difference between the performance of smaller and larger companies. All the companies, whose managers stated that they were satisfied with the performance measurement, used more comprehensive cost budgets, but only 27% of them had integrated similar approaches in budgeting, performance measurement and reporting. The dissatisfied companies had applied no internal budgeting or performance measurement at all. Consequently, there is a need for certain improvements to be made in the companies' cost accounting and management accounting systems.

Conclusion

The present study shows that the contingency framework helps to structure the impact of various drivers upon the design and use of cost accounting and management accounting systems in transition economy.

By exploring the drivers of accounting in Estonian manufacturing companies we may have succeeded in shedding some light on the role of management accounting in companies of transition societies. Our research confirms some prior findings related to influencing contingencies, such as tightening competition and organisation size, and introduces possible new drivers, such as the legal accounting environment and shortage of qualified accountants. These

features are characteristic of transitional countries. Subsequently we conclude that the conceptual change in the area of financial accounting characteristic of the Eastern and Central European transition countries served as a precondition for the design and introduction of management accounting and for the development of companies' management accounting systems. Market economy countries have not experienced such a conceptual change in financial accounting within such a short period of time.

Our study, which analysed the development of management accounting in Estonian manufacturing companies by means of the contingency approach, revealed the following issues:

- Most of the companies have management accounting systems that report inadequate product costs, have non-existent customer costs, provide feedback to managers and employees that is too late, too aggregate and too financial.
- Broadly defined cost centres may raise potential difficulties in relating different cost elements with the cost objects (products), and hence problems will occur in the whole product costing area.
- There was no clear distinction between the management accounting system designs of different production technologies.
- Most of the companies used the financial accounting statement formats as a source for internal reporting.
- The insufficiently related budgeting and reporting systems indicated that many companies failed to use accounting information systematically for clearly defined and useful purposes.
- In most companies, performance measurement was based on different functions and product groups, to a lesser extent on client groups and sales regions.

Finally, we would like to admit that this exploratory study has certain limitations. First, it has a static character. It would be useful to expand the survey on more longitudinal aspects and management accounting change, on the one hand, and on specific management techniques in a more detailed way, on the other. Secondly, we recognise that the comparatively low number of responses to our questionnaire survey may have caused a bias.

References

- Alver, J., Alver, L., Bailey, D., Christiansen, M., Mackevicius, J., Paupa, V.** Managing Accounting Change in the Baltic States. In British Accounting Association National Conference, Cardiff, 1996.
- Amat, J., Carmona, S., Roberts, H.** Context and change in management accounting systems: a Spanish case study. *Management Accounting Research*, No. 5, 1994, pp. 107–126.
- Andersen, M., Rohde, C.** Empirical Study of the Design of Management Accounting in Danish Companies. The 17th Annual Congress of the European Accounting Association. Collected Abstracts, Venice, 1994, p. 103.
- Anderson, S. W., Lanen, W. N.** Economic Transition, Strategy and the Evolution of Management Accounting Practices: the Case of India. *Accounting, Organisation and Society*, Vol. 23, No. 5/6, 1999, pp. 379–412.
- Bailey, D.** Accounting in transition in the transitional economy. *The European Accounting Review*, No. 4, 1995, pp. 595–623.
- Bhimani, A.** (ed.) *Management Accounting: European Perspectives*. Oxford: Oxford University Press, 1996.
- Bromwich, M., Bhimani, A.** *Management Accounting: Pathways to Progress*. London, CIMA, 1994.
- Bruns, W., Waterhouse, J.** Budgetary control and organizational structure. *Journal of Accounting Research*, No. 19, 1975, p. 177–203.
- Chapmann, C. S.** Reflections on a contingent view of accounting. *Accounting, Organizations and Society*, No. 22 (2), 1997, pp. 189–205.
- Chenhall, R. H., Morris, D.** The impact of structure, environment and interdependencies on the perceived usefulness of management accounting systems. *Accounting Review*, No. 61, 1995, pp. 16–35.
- Child, J., Mansfield, R.** Technology, size and organizational structure. *Sociology*, No. 6, 1972, pp. 369–393.
- Drury, C.** A Survey of Management Accounting Practices in UK Manufacturing Companies. ACCA Research Report, No. 32, Glasgow, 1993.

Dunk, A. S. Reliance on budgetary control, manufacturing process automation and production sub-unit performance: a research note. *Accounting, Organizations and Society*, No. 17, ¾, 1992, pp. 185–239.

Emmanuel, C., Otley, D., Merchant, K. *Accounting for Management Control*, 2nd ed., London: Chapman & Hall, 1990.

Enthoven, A. J., Sokolov, J. V., Petrachkov, A. M. *Doing Business in Russia and the Other Former Soviet Republics: Accounting and Joint Venture Issues*. Montvale: Institute of Management Accountants, 1993.

Estonian Accounting Law. Tallinn: Estonian Accounting Board, 1994.

Friedman, A. L., Lyne, S. R. Activity-based techniques and the death of beancounter. *The European Accounting Review*, 6, 1997, p. 19–44.

Gupta, A. K., Govindarajan, V. Business unit strategy, managerial characteristics, and business unit effectiveness at strategy implementation. *Academy of Management Journal*, 1984, p. 25–41.

Haldma, T. Design of Management Accounting Systems in Estonian Companies: An Empirical Study. *Management*, 6, 1997, p. 42–45.

Harrison, G. L. The cross-cultural generalizability of the relation between participation, budget emphasis and job-related attitudes. *Accounting, Organizations and Society*, 17, 1992, p. 1–15.

Hartmann, F. The appropriateness of RAPM: towards the further development of theory. *Accounting, Organizations and Society*, 25, 4–5, 2000, p. 451–482.

Hofstede, G. H. The cultural relativity of the quality of life concept. *Academy of Management Review*, 27, 1984, p. 389–398.

Kaplan, R., Cooper, R. *Cost and effect: using integrated cost systems to drive profitability and performance*. Boston: Harvard Business School Press, 1998.

Khandwalla, P. The effects of different types of competition on the use of management controls. *Journal of Accounting Research*, Autumn, 1972, p. 275–295.

Khandwalla, P. *Design of organisations*. New York: Harcourt Brace Jovanovich, 1977.

Kind, H. Das interne Rechnungswesen — Ein Führungsinstrument? Ergebnisse einer empirischen Untersuchung. *Kostenrechnungspraxis*, 5, 181–186; 6, 1985, p. 223–227.

Lukka, K., Granlund, M. Cost accounting in Finland: current practice and trends of development. *The European Accounting Review*, 5, 1996, p. 1–28.

Luther, R. G., Longden, S. Management accounting in companies adapting to structural change and volatility in transition economies: a South African study. *Management Accounting Research*, 12, 2001, p. 299–320.

Mayer E., Ließmann K., Mertens H. W. *Kostenrechnung: Grundwissen für den Controllerdienst*. 5. Aufl., Stuttgart: Schäffer-Poeschel Verlag, 1994.

Merchant, K. A. The design of the corporate budgeting system: influences on managerial behaviour and performance. *Accounting Review*, LVI, 1981, p. 813–829.

Merchant, K. A. Influences on departmental budgeting an empirical examination of a contingency model. *Accounting, Organizations and Society*, 9, 1984, p. 291–307.

Merchant, K. A. The effects of financial controls on data manipulation and management myopia. *Accounting, Organizations and Society*, 15, 1990, p. 297–313.

Miles, R. W., Snow, C. C. *Organizational strategy, structure and process*. New York: McGraw-Hill, 1978.

Miller, D., Friesen, P. H. Innovation in conservative and entrepreneurial firms: two models of strategic momentum. *Strategic Management Journal*, 1982, p. 1–25.

O'Connor, N. The influence of organizational culture on the usefulness of budget participation by Singaporean-Chinese managers. *Accounting, Organisation and Society*, 20 (5), 1995, p. 380–403.

Otley, D. T. Budget use and managerial performance. *Journal of Accounting Research*, Spring, 1978.

Petrova, V. I. *Sistemnyi analiz sebestoimosti (Systematic costing)*. Moscow: Finansy i statistika, 1986.

Reichmann, T., Kleinschnittger, U. Die Controllingfunktion in der Unternehmenspraxis. *ZfB* 57, 1987, S. 1090–1120.

Scherrer, G. Management accounting: a German perspective. *Management Accounting: European Perspectives*. Oxford: Oxford University Press, 1996, p. 100–122.

Szychta, A. The scope of application of management accounting methods in Polish enterprises. Presented at EAA 24th congress, 18–20 April, Athens, Greece, 2001.

Simons, R. Accounting control systems and business strategy. *Accounting, Organizations and Society*, 12 (4), 1987, p. 357–374.

Sobanska, I., Wnuk, T. The Development of Management Accounting in Enterprises Operating in Poland in 1990s. *Accounting and Audit: Problems of Development*, Riga: Latvian University Press, 1999, p. 156–160.

Southworth, A. Accounting for East-West joint ventures: Tanbrands experience in the Ukraine. *Management Accounting Research*, 5, 1994, p. 167–184.

Varmosi, T. A. Continuity and change; management accounting during processes of transition. *Management Accounting Research*, 11, 2000, p. 27–63.

Virtanen, K., Malmi, T., Vaivio, J., Kasanen, E. Drivers of management accounting in Finland. *Management Accounting: European Perspectives*. Oxford: Oxford University Press, 1996, p. 54–73.

KOKKUVÕTE

Eesti tootmisettevõtete juhtimisarvestuse praktikat mõjutavad tegurid

Käesolevas artiklis käsitletakse Eesti suuremate tootmisettevõtete juhtimisarvestuse praktikat analüüsidest sõltuvuse teooria (*contingency theory*) abil juhtimisarvestuse süsteemi mõjutavaid tegureid. Ettevõtetes rakendatavat arvestussüsteemi ülesehitust ning olemust mõjutavate peamiste teguritena vaadeldakse töös keskkonna, tehnoloogilisi ja organisatsioonilisi aspekte. Sõltuvuse teooria peamise idee kohaselt sõltub ettevõttes rakendatava arvestussüsteemi tõhusus eelkõige selle võimest reageerida ja kohaneda nii ettevõtet ümbritsevas keskkonnas toimivate kui ka ettevõttesiseselt aset leidvate muutustega.

Uurimuse raames teostatud empiiriline analüüs põhineb 62 Eesti suurema tootmisettevõtte andmetel. Ettevõtted on viimasel aastakümnel intensiivselt arendanud kasutatavaid kulu- ja juhtimisarvestuse süsteeme. Arvestussüsteemides muudatusi tinginud peamiste keskkonnamõjuritena näevad ettevõtete juhid tihenevat konkurentsi ning läbitud koolitus programme. Olulise siirdemajanduse juhtimisarvestust mõjutava keskkonnategurina käsitletakse artiklis majandusarvestuse keskkonda. Peamiste organisatsiooniliste mõjuritena käsitletakse juhtide vajadust detailsema segmentide tegevustulemusi puudutava info järele, toodangu struktuuri muutuseid ja turustruktuuri muutuseid ning ettevõtte suurust.

Eesti tootmisettevõtte juhtimisarvestussüsteemide ja neid mõjutavate tegurite analüüsi peamised tulemused kajastuvad järgnevates momentides:

- Enamus ettevõtteid kasutasid siseste aruannetena kohustuslike finantsaruandeid, mis ei paku ettevõtte juhtimiseks piisava detailsusega vajalikku infot.

- Eelarve- ja aruandlussüsteemide liigne eraldatus ei võimalda kasutada arvestusinformatsiooni süstemaatiliselt ning eesmärgipäraselt.
- Tegevustulemusi jälgitakse enamikes ettevõtetes funktsioonide ja tootegruppide lõikes, vähemal määral kliendigruppide ning müügipiirkondade lõikes.
- Liiga laialt määratletud kulukohad tekitavad raskusi erinevate kuluelementide seostamisel kuluobjektide ~~dk~~ toodetega ning seega teatud määramatust toodete omahinna kalkuleerimisel.
- Erinevate tehnoloogiatega ettevõtete arvestussüsteemide ülesehitus on küllalt sarnane. Seega ei avalda tehnoloogilised muudatused ettevõtetes veel piisavat mõju arvestussüsteemide arengule.

Analüüsi tulemused näitasid, et Eesti ettevõtete kulu- ja juhtimisarvestussüsteemid ei peegelda veel piisavalt detailsel tasemel ettevõtetes asetleidvaid tegevusi ja protsesse ning sellest tingituna ei ole juhtimiseks vajalik informatsioon ettevõtte tegevuste, toodete ja klientidega seotud kulude osas piisavalt objektiivne. Kuid järjest laienev keskendumine ettevõtte kulu- ja juhtimisarvestussüsteemide arendamisele annab tunnistust nimetatud valdkonna olulisuse teadvustamisest ettevõtte majandustulemuste kujundamisel.

Net sales of the surveyed companies

Net sales (million euros)	Number of compa- nies	%	Cumulative frequency	Cumulative %
Up to 3.7	15	25.2	34	38.7
3.8–6.5	19	30.6	34	54.8
6.6–13.0	17	27.4	51	82.3
13.1–32	8	12.9	59	95.2
Over 32	3	4.8	62	100