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FINANCIAL STABILITY ASSESSMENT

Financial markets

The international financial environment deteriorated significantly at the end of the summer of 2011. In spring, the tensions brewing on the financial market concentrated on single euro area countries, with the liquidity and financing position of banks showing signs of improvement elsewhere in Europe. By the beginning of autumn, however, there was evidence of the sovereign debt crisis spreading to several other euro area countries. Mistrust towards the European banking system built up, distressing the interbank market and complicating banks' funding on the securities market. The conditions of growing mistrust added to the role of the Eurosystem central banks in liquidity mediation. While the increased inflationary pressures were fought by raising monetary policy rates, the Eurosystem maintained an unlimited liquidity support to the euro area banks.

Nordic banks deserve positive mention against the backdrop of the euro area crisis. Thanks to their high capitalisation and their small exposure in countries with problematic public finances, the Nordic banks are relatively better positioned compared to many other banks in Europe, as regards the uncertain funding situation. The stronger macro-economic and fiscal position of these countries adds to their reliability in the eyes of investors. Even though the funding conditions have become tense even for Nordic banks, and the cost of funding has gone up, risks are alleviated by the fact that the banking sector's need for long-term funding has largely been covered for the year. At the same time, the availability of short-term funding could drop significantly if the financial market sentiment deteriorated, as the banks' funding structure remains highly vulnerable to any negative market developments.

The deterioration in the outlook for global economic growth and the tensions brewing on the financial markets have exerted immense negative pressure on the equity and bond prices in the last few months. With the decrease in investor risk appetite, the markets are likely to remain very volatile in the next six months. Of the Estonian financial intermediaries, the investment and pension funds as well as insurance companies are the most vulnerable to negative changes on the securities markets.

Real economy and loan quality

In the first half of 2011, net sales and profits of the Estonian business sector were significantly boosted by the quick growth in export. The positive economic indicators must, however, be viewed by considering that these were generated by a small number of large companies, while the financial position of businesses in general was much more diverse. The volume of payment defaults and tax arrears has dropped during the year, but remains relatively high. Future risks can, above all, be associated with the deterioration of the external environment, as the cash flows from export undertakings may prove lower than estimated due to the drop in external demand. A drop in income would quickly spill over to other business areas, complicating the fulfilment of loan commitments in the entire business sector.

The recovery of economic activity was also reflected in the improvement of the labour market situation. Even though this was accompanied by a rise in confidence, households remain cautious in their financial behaviour. The persistent tendency to save is reflected by the annual growth in deposits (nearly 13% at the end of the summer). In the next six months, the loan repayment ability of households will be supported, in addition to the financial buffers, by the low level of interest rates. At the same time, real wages have yet to climb against inflation, and the labour market risks are liable to increase with the deterioration of the economic environment.

The favourable macro-economic environment in the first half of 2011 helped to improve the loan portfolio quality of banks. Even though the increase in external demand has allowed some companies of the manufacturing industry to repay their overdue loans, the decrease in the share of non-performing loans falls short of the spring forecast. The volume of overdue loans has thus dropped, above all, due to the write-off of bad debts, which is a lengthy process. The slow decline in the share of loans overdue for over 60 days is expected to continue in the forthcoming months, dropping from this year's 6% below 5% by the end of 2012. The deterioration of the macro-economic environment may add new problem loans, further decelerating the improvement in the loan quality.

Strength of financial institutions

The drop in loan losses in 2011 has helped to enhance the net profitability of banks. Even though there are still problem loans in the loan portfolio that may start performing once again, the recoveries will likely be smaller than thus far. Decline in loan losses will thus have a less significant effect on the banks' net profit in the future.

In the next half-year, increase in the pre-provisions profitability of banks will be curtailed. Above all, the growth in interest income remains limited because of the postponement of rise in Euribor and the potential contraction of the loan portfolio. Global liquidity tensions may also significantly increase the cost of the banks' market-based financing. At the same time, the share of retail deposits in the resources engaged by banks has significantly increased in the last year. Besides positively affecting banks' liquidity and funding risk, this will also help to reduce the banks' risks related to earnings.

The share of liquid assets in the banks' balance sheet has increased in the last few months, reflecting the contraction of the loan portfolio and the relatively strong growth in deposits on the one hand, and the banks' interest in maintaining a liquidity buffer on the other. The banks operating in Estonia continue to participate in the Eurosystem's monetary policy operations mainly as liquidity providers, while the use of credit instruments is much less popular in liquidity management. The liquidity management of major Estonian banks is mainly centralised in the parent bank group, which has supported their liquidity in the financial crisis.

Due to the decrease in own funds, the aggregate capital adequacy ratio of the Estonian banking sector dropped to 15.9% by the middle of 2011. The forecast for economic growth and banks' profitability allows to expect a further growth in capitalisation in 2012. To cushion against poorer-than-expected developments, the banking sector has set up a high capital buffer which is able to cope with problem loans twice the current volume, while adhering to the 10% minimum capital adequacy rate. The scenario of doubling of the loan losses is, however, unlikely to materialise.

Settlement systems

The dependence of settlement systems on the TARGET2 settlement platform increased significantly upon the changeover to the euro. Important settlement systems had no major failures in 2011, except for an incident where a failure in TARGET2 caused a postponement of the commencement of the settlement day in the retail payments settlement system ESTA and the ECSD's securities settlement system. This has brought about the need for measures that would prevent the transfer of TARGET2 day-offs or failures to the local settlement systems.

Even though the liquidity reserve required for smooth functioning of the settlements has decreased and certain operational risks have materialised, no systemic liquidity risk has emerged in the settlement systems. As the banks have implemented preventive measures, operational risks evident in the first half-year have decreased by today. These risks were caused by the local bank's insufficient experience in the management of the liquidity required for conducting settlements in the Eurosystem framework.

Conclusions

In the next six months, the risks faced by the banks operating in Estonia will depend, above all, on the sovereign debt crisis in the euro area. Even though the governments and central banks of euro area countries, along with the International Monetary Fund, have implemented measures for preventing the spread of the crisis, the crisis has yet to achieve its breaking point. The effect of the crisis on the Estonian real economy and the stability of the financial system is thus yet to be determined.

The debt crisis can affect the Estonian financial sector through two channels. Firstly, should the liquidity and funding tensions looming in the euro area strongly affect the parent banks operating in the Nordic countries, the subsidiaries and branches located in Estonia will be affected through a rise in funding cost. Secondly, should the external demand, which has kick-started economic activity in Estonia, experience a significant contraction, the income of the banking sector and the improvement in loan quality could suffer a setback. The probability of both risks materialising has increased, compared to spring.

In the current stage of the debt crisis, the risks to Estonia's financial stability have been reduced, among other factors, by the financial markets' confidence in the Nordic banking system and in the economic and fiscal policies. The economic development in Estonia has also contributed to financial stability in the last twelve months. The sufficient capitalisation of the banking sector helps to withstand potential external risks.

The deepening of the crisis and the deterioration in the global macro-economic environment lay a heavy burden on the liquidity and capital buffers of European banks. Any decisions regarding profit distribution and capital/liquidity management in the banks operating in Estonia and their parent banks must thus consider that substantial and sustainable buffers are necessary in the unpredictable economic and financial environment.

I. FINANCIAL MARKETS

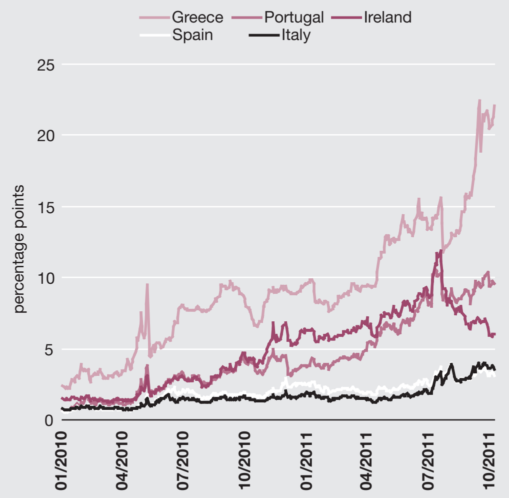
GLOBAL FINANCIAL MARKETS

The problems of government debt in the euro area have intensified since spring and have spread to other markets. This is illustrated by the rising probability of Greek insolvency, although another bailout package for the country was agreed upon in July. The crisis also spread more and more to Spain and Italy (see Figure 1). By mid-September, it threatened to affect France when the rating agency Moody's lowered its credit ratings for two major French banks on 14 September. At the beginning of October, the Belgian-French financial institution Dexia encountered problems. Movements in the markets over the last six months included a rise of over 1,200 basis points in the difference between the interest rates on Greek ten-year bonds and the rates on equivalent German bonds. Meanwhile, in Portugal, Spain and Italy this rise was between 120 and 400 basis points.

To contain the spread of the debt crisis, the Eurosystem started to purchase bonds again through the Securities Market Programme. In addition, banks started to use the deposit facility of the central bank more and more (see Figure 2). On 6 October, the Eurosystem decided to provide liquidity to the market in the form of long-term loan instruments and to start purchasing the covered bonds of banks again.

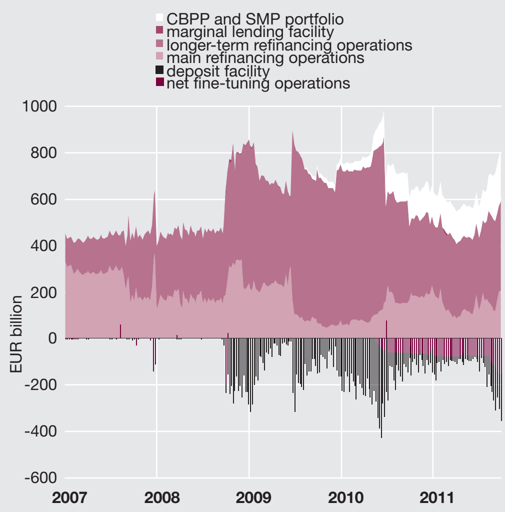
Meanwhile, the **national bond markets** of Germany and the USA witnessed a significant drop in interest rates all along the income curve. This followed a drop in economic activity and stronger demand for German and US bonds as the crisis in the euro area intensified (see Figure 3). Demand for US bonds increased despite the major political conflict over the future of US national fiscal policy and despite the fact that in August the rating agency Standard & Poor's reduced the US sovereign rating from AAA to AA+ for the first time ever.

Figure 1. Spread between 10-year bonds of Greece, Portugal, Ireland, Italy and Spain with Germany



Source: EcoWin

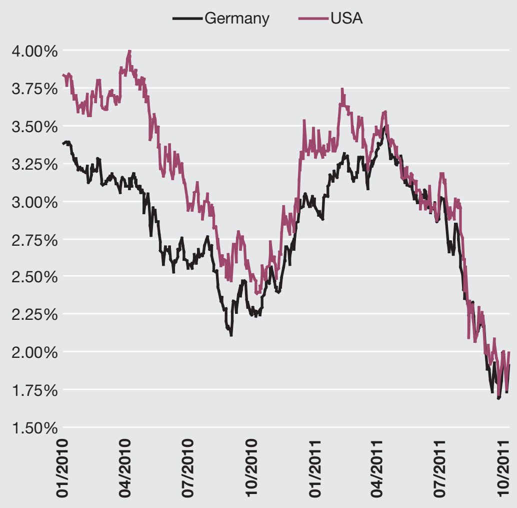
Figure 2. Eurosystem's monetary policy operations



Source: European Central Bank

Movements in money markets were different in different countries. In the USA, the economy continued to be stimulated by the purchases of government bonds in the second stage of quantitative easing from March until the end of June. The key interest rate remained the same, and as economic growth slowed down, the central bank promised not to change the rate until 2013 at the earliest. For this reason, the US money market interest rates did not change significantly. However, the Eurosystem focused more on the hike in inflation and started to raise its key interest rate in April. In July the key interest rate was put up for the second time and reached 1.5%. Meanwhile, the central bank's extraordinary crisis measures to support the liquidity of the banking sector are still being implemented and new ones have been introduced. Among advanced economies, the key interest rate was raised by the Norwegian central bank, by 25 basis points to 2.25%, and by the Swedish central bank, by 50 basis points to 2%.

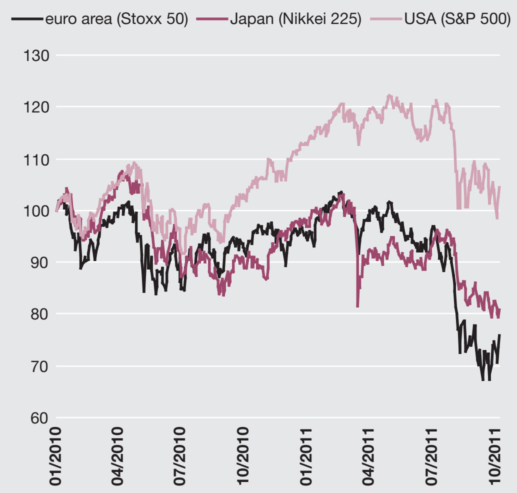
Figure 3. Ten-year interest rates on Germany and US government bonds



Source: EcoWin

Major **stock markets** fell steadily in the second and third quarters of 2011 (see Figure 4). When economic activity started waning in March, the markets were deprived of the support of improving growth outlooks. Meanwhile, the euro area's debt crisis worsened and the risk sensitivity of investors peaked in August, which resulted in an extensive wave of sales in stock markets. By the end of September share prices had dropped by 23% in the euro area, by 11% in the USA and by 15% in Japan from where they were at the beginning of the year.

Figure 4.Stock indices in the euro area, Japan and the USA (1 Jan 2010 = 100)



Source: EcoWin

Currency markets saw the euro depreciate against other major currencies. This was mainly caused by the intensification of the crisis in the euro area, but also by the unexpectedly low economic indicators at the end of the period. The euro fell most against the Japanese yen, the New Zealand dollar and the Swiss franc. At the beginning of September, the Swiss central bank decided to fix the minimum exchange rate between the euro and the franc at 1.20 in order to support the export sector, and declared its willingness to protect this rate by unlimited foreign currency purchases. The euro depreciated less against the US dollar, as the dollar's exchange rate continued to drop due to the lenient monetary policy of the USA. The euro only appreciated against the Swedish krona among the G10 currencies.

The primary risk to global financial markets is the euro area's debt crisis, which threatens financial stability in Europe and elsewhere. The probability of Greek bankruptcy has surged and the implemented and planned crisis measures have not been able to stop the rapid deterioration of trust among investors. Moreover, the crisis is threatening to engulf Italy and Spain, and even France and Belgium where credit default swaps (CDS) have surged. In addition, investors have understood that German bonds, which used to be considered safe, are not in fact risk-free in a systemic crisis; for this reason, the five-year German CDS spread rose by 40 basis points to 85 basis points, which is slightly higher than that in France at the beginning of the period.

Unlike during the crisis of 2008/2009, the options of central banks and governments for implementing crisis measures are currently much more restricted. Fiscal policy options are restricted by the high public debt that forces countries to curb spending in order to guarantee the sustainability of fiscal policy in the medium and long term. The options for monetary policy are also quite limited, as a sharp cut in the key interest rate like the one that was carried out during the previous crisis is no longer an option.

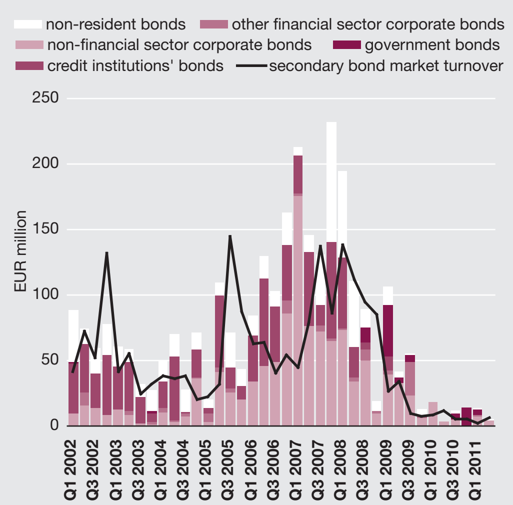
Secondly, financial markets may be threatened by the **significant deceleration in global economic growth**. As general confidence decreases, this may turn into an economic decline and further exacerbate the imbalances in the global economy. Whereas the forecasts for economic growth in the second half of 2011 were previously relatively upbeat and expected a surge in activity, the latest forecasts have been much more pessimistic. Major economies are now expected to experience only minimal economic growth during this period. The confidence of investors and consumers has plummeted sharply, and if this tendency continues it may lead to a new economic decline. We must also remember that although the economy has recovered slightly, unemployment in the USA and the euro area still remains relatively high, and this curbs solvent demand.

ESTONIA'S FINANCIAL MARKETS

Bond and stock markets

The Estonian bond and stock markets are small in both volume and turnover, having a minor influence on the Estonian financial system. The primary **bond market** has seen very little activity since the second half of 2008 (see Figure 5). A monthly average of 3.1 million euros worth of bonds were issued in the first half of 2011, with

Figure 5. Bonds issued and secondary bond market turnover on a quarterly basis



the bonds of local non-financial companies contributing nearly two-thirds. The total volume of bonds issued dropped to 515 million euros – i.e. 3% of the GDP – by the end of August.

The secondary bond market has also remained passive, with the total monthly turnover contributing a mere 0.25% of the total capitalisation of bonds in the last two years.

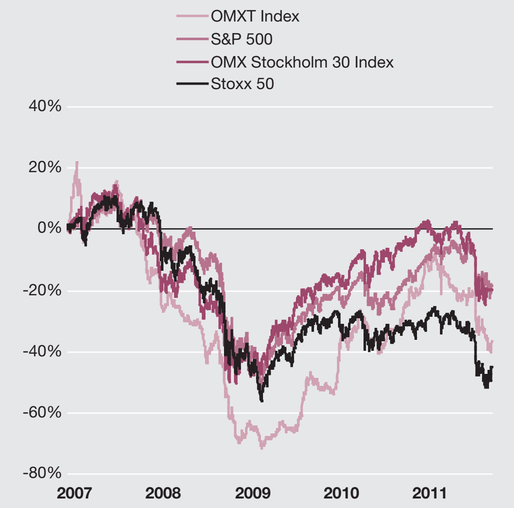
Positive trends on the **Tallinn Stock Exchange** at the beginning of 2011 were reversed in the middle of March, with the OMXT dropping below the level achieved at the beginning of the year (see Figure 6). At the beginning of August the downward pressures on global stock exchanges conditioned a 16% drop in the OMXT, tripling short-term daily turnovers, compared to the average daily turnovers in the first half of 2011. Stock exchange capitalisation dropped to 1.4 billion euros by the end of August (see Figure 7). The share of foreign investors on the Tallinn Stock Exchange has shown no major changes compared to the beginning of the year, amounting to 37% at the end of August.

Liquidity of the Tallinn Stock Exchange remains low. The average monthly turnover for 12 months amounted to 19 million euros at the end of August 2011 – 25% less than in the same period last year. Tallinn Stock Exchange is expected to remain volatile in the near future, conditioned by the size of the market and low liquidity, on the one hand, and uncertainties on global stock markets on the other.

Investment funds

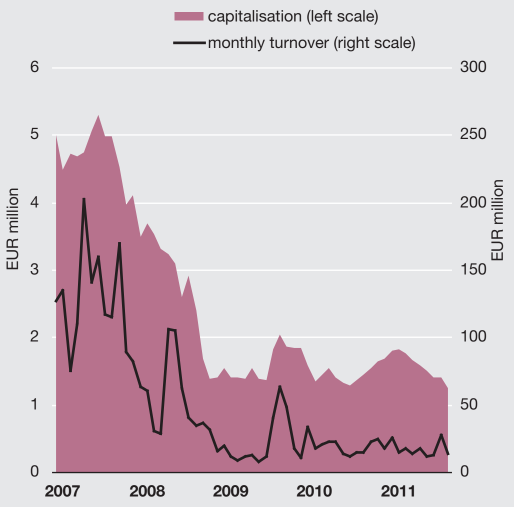
The decline in stock prices has significantly affected the **yield** of stock funds. By the end of August, the net asset value of stock fund units dropped by an average of 16.6% from the beginning of the year (see Figure 8). Bond funds, on the other hand, have generated a positive yield. By the end of August, the net asset value of bond

Figure 6. Developments on the Tallinn Sock Exchange compared to global stock exchanges



Sources: EcoWin, NASDAQ OMX

Figure 7. Market capitalisation of shares listed on the Tallinn Stock Exchange and monthly turnover



fund units rose by nearly 2.1%, compared to the beginning of the year. Similarly to investment funds, pension funds investing in bonds have generated a positive yield from the beginning of the year, with the net asset value of units rising by an average of 1.6%. The net asset value of equity strategy-based pension fund units has dropped from the beginning of the year (see Figure 9).

The investors' reduced risk appetite has scaled down contributions to stock funds. While contributions exceeded disbursements at the beginning of the year, outflows have exceeded inflows since May. By the end of July, the **assets** of investment funds dropped by 2% to 522 million euros, compared to the beginning of the year.

The restoration of state contributions at the beginning of the year significantly increased cash inflow into second-pillar pension funds. The volume of contributions has nearly quadrupled, compared to 2010. Contributions to third-pillar pension funds have shown no changes, compared to last year. The volume of second-pillar and third-pillar pension funds has grown by 6% from the beginning of the year, amounting to 1.2 billion euros at the end of August.

The **share of external assets** in the investment structure of investment and pension funds amounted to 83% at the end of August, showing no major changes since the spring (see Figure 10). The proportion of shares and fund units invested in shares in the total assets of investment and pension funds has decreased from the beginning of the year. This has been conditioned by the drop in share prices on the stock exchange. As at the end of August, investments in shares and fund units made up 67% of the total assets of investment and pension funds.

The geographical breakdown of investments reveals that a majority (more than two-thirds) of the investments have been made in securities registered in Europe (excluding Estonia)

Figure 8. Changes in the average price for investment fund units since 2007

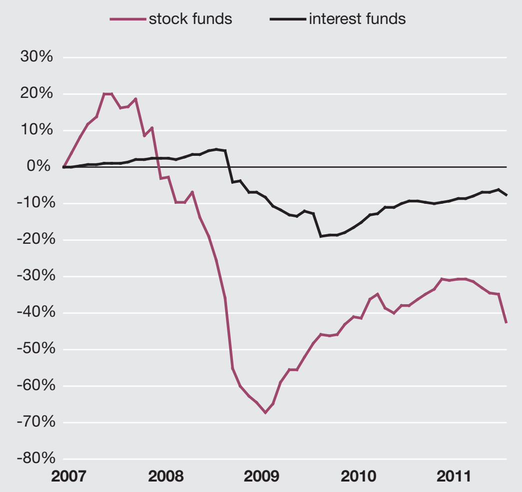


Figure 9. Changes in second-pillar pension fund indices since beginning 2007

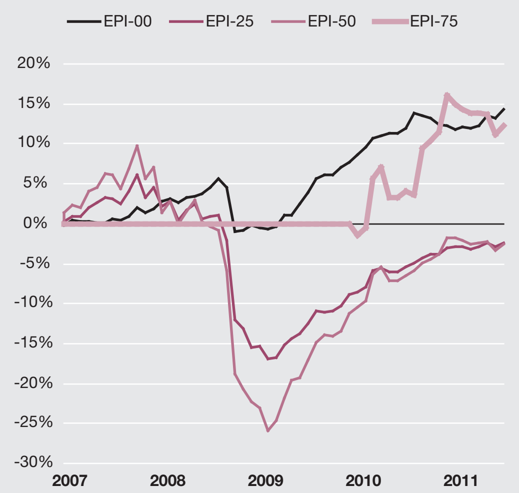


Figure 10. Structure of investment and pension fund assets and the share of foreign assets

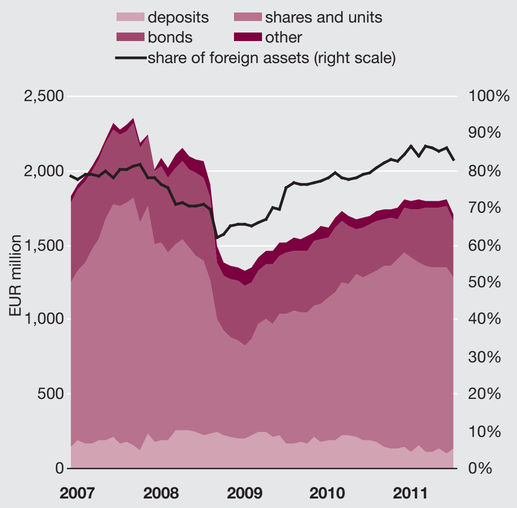
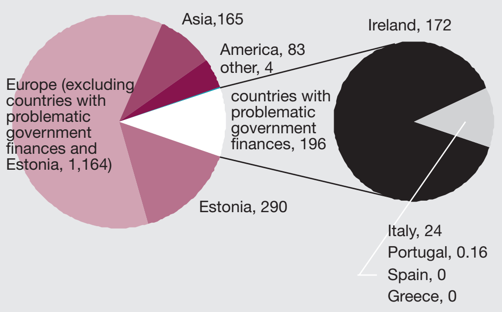


Figure 11. Geographical distribution of investment and pension fund assets in August 2011 (EUR million)



(see Figure 11). At the end of August, securities investments in countries with problematic public deficit and sovereign debt[1] made up 11% of the total assets of investment and pension funds. A majority of these investments have been made in the shares and fund units of Ireland.

MARKET-BASED FINANCING OF BANKING GROUPS

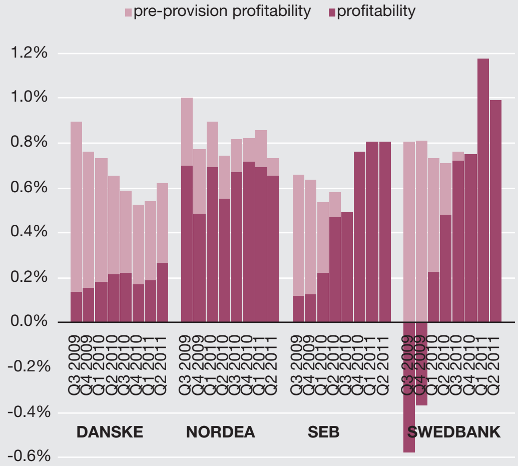
Financial strength of the groups of parent banks

The **profit** figures for the first half of 2011 of the parent bank groups of four of the largest banks operating in Estonia have risen, compared to the same period last year (see Figure 12).

The enhancement of operating profit has largely been supported by the decrease in loan provisions and recoveries. Majority of the banking groups witnessed a growth in net interest income in the first half of 2011, compared to the same

[1] Ireland, Greece, Spain, Portugal, Italy.

Figure 12. Profitability of banking groups



Sources: public reports of banks

period last year. At the same time, this growth differed by banking groups, depending on loan turnover, margins, deposit and loan interest rates. The profitability of banking groups will continue to be positively influenced by the drop in loan provisions in the near future. At the same time, the potential increase in the cost of financing, fuelled by growing uncertainties in the European banking sector, may have a negative effect on net interest income.

The **positions** of bonds of European states with a large public deficit and high sovereign debt, held by the parent bank groups of the banks operating in Estonia, have remained modest. The direct effect of the euro area debt crisis on the banking groups is thus minor.

The groups' capitalisation has remained stable in recent quarters. Albeit the capital adequacy ratio differs by banking groups, the adequacy ratio exceeds 12% for most banks, with the Tier 1 ratio exceeding 10%.

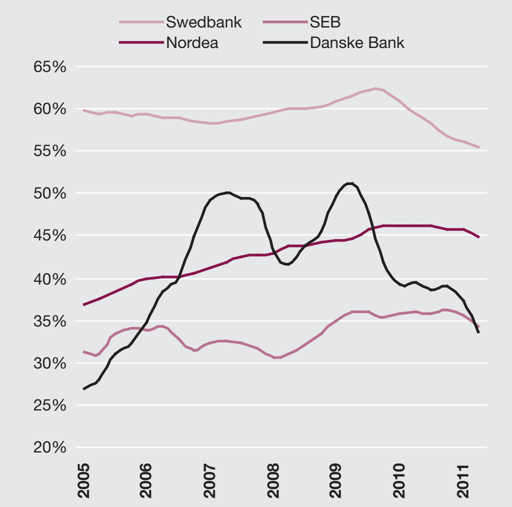
Funding of parent banks

In addition to deposits, Nordic banking groups have been using market-based funding for serving their need for financing (see Figure 13). Riksbank's latest financial stability report[2] reveals that securities issued in other currencies (mainly US dollar and euro) make up over 60% of the market-based financing. The US dollar is especially popular in short-term financing, contributing over a half of the total volume. The banks' market-based financing structure is thus vulnerable to the external environment.

Several Nordic banking groups issued new **bonds** in the first half of 2011. Banks continue preferring longer-term bonds over shorter-term bonds, thus extending the term of the liabilities (see Figure 14).

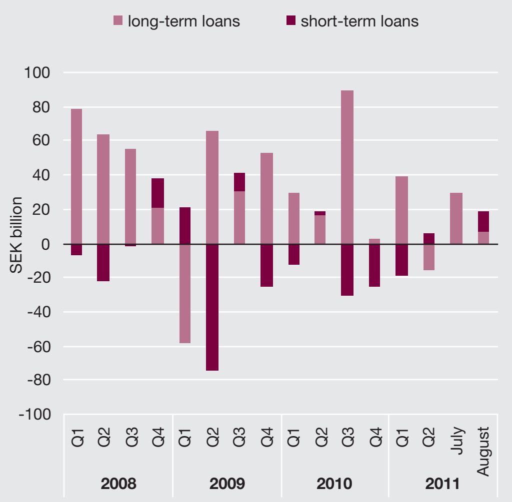
2 Riksbank's Financial Stability Report, May 2011.

Figure 13. Banking groups' share of wholesale funding in total loans (4-quarter moving average)



Sources: public reports of banks

Figure 14. Net borrowing of Swedish banking groups in SEK instruments



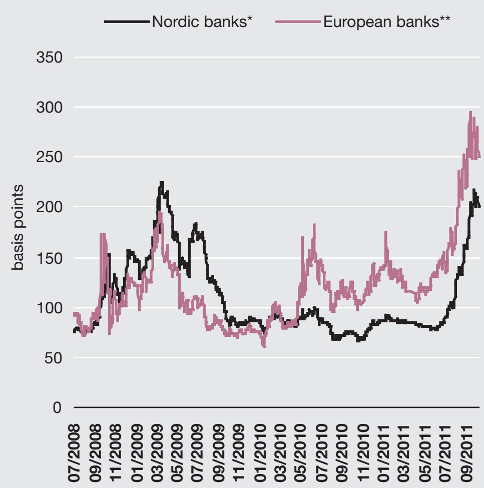
Source: Statistics Sweden

The deepening of the debt crisis in Europe, along with the general growth in uncertainty, had a negative effect on the market participants' risk assessment of the banking sector. The credit default swap (CDS) spreads of both European and Nordic banks have widened, compared to the beginning of the year (see Figure 15). Regardless of doubling in CDS spreads, Nordic banks are still considered less risky than other European banks. At an average, the CDS spreads of Nordic banks were 50 basis points lower than those of other European banks.

The Swedish central bank has raised the repo interest rate twice since the spring – by a total of 50 basis points to 2%. The key interest rates have risen also since the beginning of the year, affecting, in addition to the increased risk assessments of market participants, the cost of market-based financing. The **bond risk premiums** of banks have advanced by an average of 13 basis points from the beginning of the year (see Figure 16).

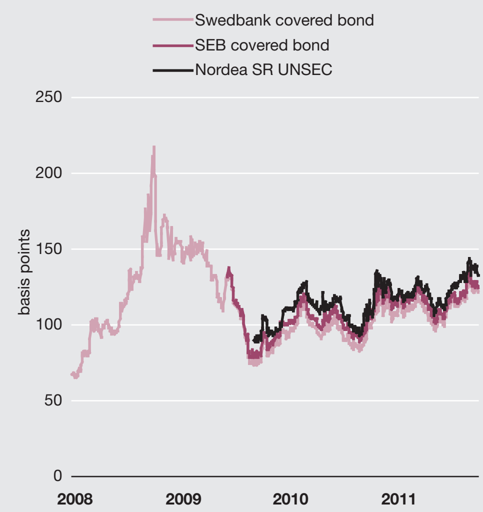
Overall, market participants have considered Nordic banks to be safer than other European banks. It has thus been easier for Nordic banks to engage resources from the financial market. At the same time, Swedish banks are vulnerable to the sudden developments on the financial markets owing to their high share of market-based financing while using a foreign currency. The deepening of the debt crisis in Europe could thus increase the cost of market-based financing for Swedish banks.

Figure 15. CDS premiums of Nordic and European banks



Source: Bloomberg
* Nordic banks: Swedbank, SEB, Nordea, Handelsbanken, Danske Bank; arithmetic average.
** European banks: UBS, Société Générale, HSBC, Deutsche Bank, ING, Barclays, BNP Paribas; arithmetic average.

Figure 16. Banks' 3-year bond spreads against Swedish government bond



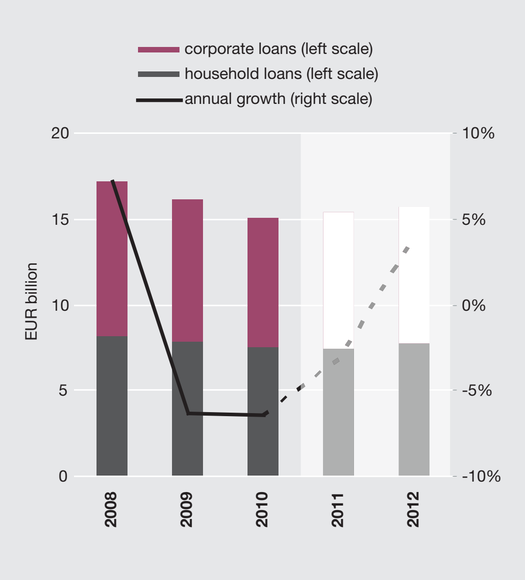
Source: Bloomberg

II. REAL ECONOMY AND LOAN QUALITY

CREDIT PORTFOLIO OF BANKS[1]

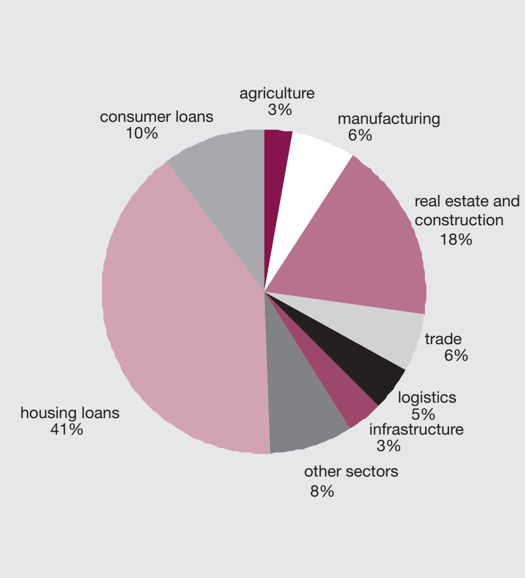
At the end of August, the **loans and leases** issued by banks to the non-financial sector totalled 14.9 billion euros (see Figure 1).[2] The credit portfolio of banks has continued to decrease owing to low volumes of new lending to companies and households. From the end of 2010 until August 2011, the loan stock shrank by more than 3%. It has already decreased by more than 16% from the peak it reached at the end of 2008. The credit portfolio is expected to continue declining, albeit at a slower pace. However, if borrowing in the non-financial sector continues to pick up, the forthcoming years might see modest growth in the credit portfolio after a three-year drop. At the same time, surging uncertainty and the expected slowdown in global economic growth have increased the risk that credit growth in the forthcoming years might remain substantially slower than was forecast in spring 2011.

Figure 1. Loan stock and annual growth



Although loan stock is declining in nearly all sectors, the **structure of the portfolio** is still mostly affected by different amortisation of loans, regardless of the somewhat increased new lending volumes. The share of household loans in the portfolio is rising constantly owing to the long maturities of housing loans. It comprised over half of the credit portfolio for the first time at the end of July (see Figure 2). Real estate and construction account for the biggest share in corporate loans, encompassing nearly a fifth of the loans issued to the non-financial sector. Exceptionally, loan stocks in manufacturing and agriculture have increased slightly in 2011 due to increased borrowing in these sectors.

Figure 2. Structure of banks' credit portfolio as at 31/8/2011



The decrease in the banks' credit portfolio has also been caused by write-offs of bad debts. In the first half of 2011, banks wrote off around

[1] Includes loans, leases and factoring.

[2] Also includes loans and leases issued to non-residents of 0.3 billion euros.

66 million euros, or 0.4% of the credit portfolio, four-fifths of which consisted of corporate loans.[3] Further write-offs may be expected in forthcoming quarters, as the stock of bad debts is still large (see also *Quality of assets*).

The risks threatening the credit portfolios of banks are tightly connected to the real estate market. Beside the fact that nearly 60% of all loans have been issued to sectors that are directly bound to real estate, **indirectly the credit portfolio is even more tightly linked to the real estate market**. At the end of August, 80% of loans had real estate as the primary collateral. The amortisation of such loans is slower due to their longer maturities and thus their share in the credit portfolio has risen by 2 percentage points this year. As the real estate market has probably already bottomed out and become more stable, the real estate-related risks for banks remain virtually the same as they were six months ago.

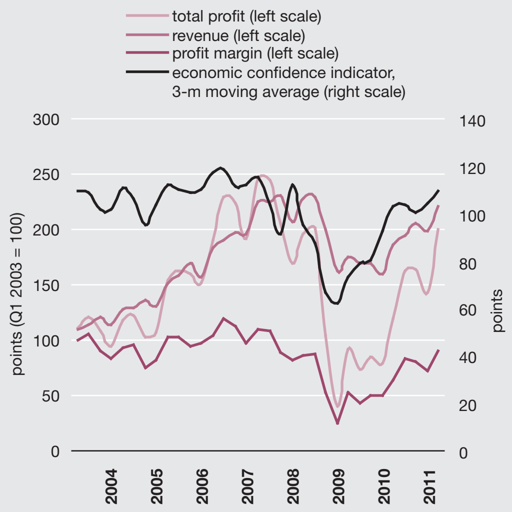
LOAN REPAYMENT ABILITY OF COMPANIES

The positive economic outlook improved the confidence of companies in the first half of 2011. However, the deterioration in the external environment at the end of the summer also created a negative outlook for Estonian economic growth, which may decelerate in the second half of 2011 faster than expected.

Corporate economic indicators

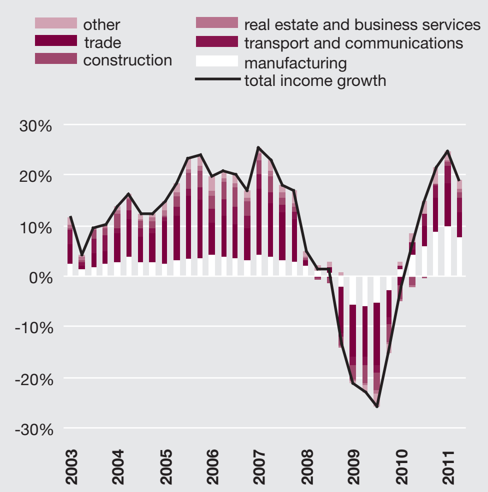
The sales income and total profit of companies witnessed a significant rise in the first half of 2011 compared to the same period a year ago, increasing by 22% and 72% respectively (see Figure 3). **Sales** have grown in all sectors, with the greatest contributor being the manufacturing sector, where turnover climbed by 35%, year-on-year (see Figure 4). However, owing to the dete-

Figure 3. Corporate sector's economic results and economic confidence indicator



Sources: Statistics Estonia, Estonian Institute of Economic Research

Figure 4. Determinants of sales income growth



Source: Statistics Estonia

[3] Mainly in trade and real estate.

riorating economic outlook and the improving comparison basis, the rate of sales growth in the business sector is expected to slow down.

Total profit rose considerably faster in companies with over 100 employees, and their profitability has already reached the levels it was at in the boom. A third of the total profit in the business sector came from manufacturing, where exports boosted profit growth to 76%. The main contribution to this came from companies that manufacture electronics and optical devices, timber and fuel oil. Agriculture and education experienced losses.

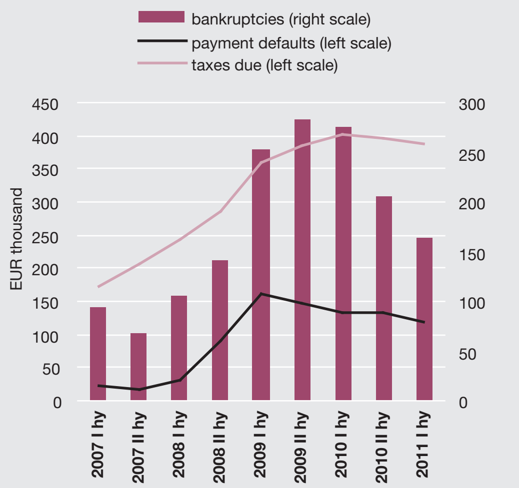
The ratio of total profit to sales revenues, or **total profitability**, increased even further. Total profitability ranged between 7% and 8% before the global financial crisis, and in the second quarter of 2011 it again reached 7%. One of the reasons for the improvement in total profitability was that expenditures grew more slowly than sales revenues.

In the first half of 2011, the year-on-year rise in **expenditures** posted 19%, including labour costs of 9%. Meanwhile, the productivity indicators of companies in their labour productivity, labour costs and hourly productivity continued to improve, which confirms that companies have been able to contain their expenditures successfully. However, inflationary pressures may entail accelerating growth in expenses, which could also start to affect the profitability of companies.

New companies and bankruptcies

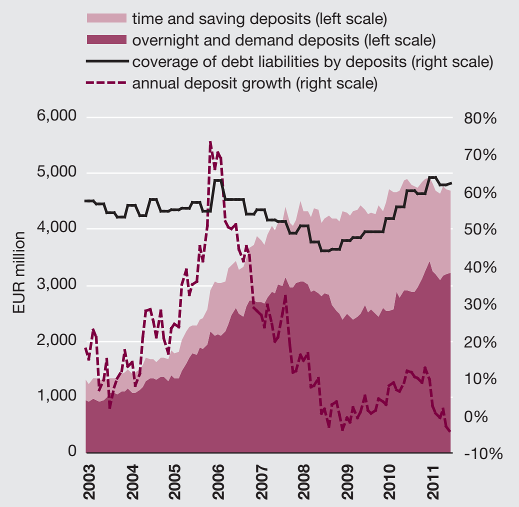
At the beginning of 2011, the activity of **establishing new companies** was more vigorous than during the past 12 years. In the first two quarters of 2011, 7,936 new companies were registered. Almost twice as many companies were registered in agriculture and construction, while the improvement was slightly slower in transportation and education. One of the reasons

Figure 5. Companies' payment defaults, taxes due and bankruptcies



Sources: Krediidiinfo, Tax and Customs Board, Central Commercial Register

Figure 6. Volume and growth of corporate deposits



that the establishment of companies was more active is that since 1 January 2011, limited liability companies can be founded without an immediate contribution to share capital.

The number of liquidations decreased significantly in manufacturing and trade. The number of **bankruptcies** also shrank considerably in these sectors. Although the number of bankruptcies is much smaller than it was, in the first half of 2011 it still remained quite high compared to its pre-crisis level (see Figure 5). With the support of continuing economic growth the number of bankruptcies may drop even further, as evidenced by the diminishing number of bankruptcy petitions.

In the first half of 2011, the number of **payment defaults** dropped by 10% compared to a year ago.[4] Although **tax arrears** have also decreased, this change has been minuscule.

Financial assets and liabilities

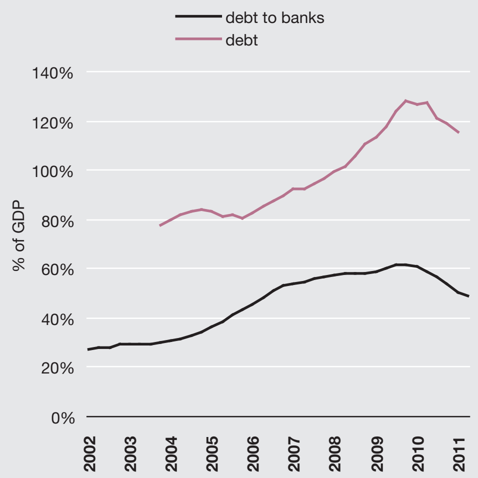
Corporate financial assets started shrinking in the first half of 2011. The **deposits allocated in domestic banks** dropped by 4.4% compared to a year ago (see Figure 6). While time and savings deposits diminished by 26%, overnight and demand deposits grew by 11%.

The decrease in corporate savings and the growth in overnight and demand deposits was probably fuelled by the increasing funding of investments from savings. Depositing is also inhibited by interest rates remaining consistently low.

The coverage of debts by deposits has improved since the beginning of 2009 despite the shrinking deposit stock and growing corporate loan turnover. This is attributable to greater loan repayments making for a decrease in the loan stock.

[4] Source: Krediidiinfo.

Figure 7. Debt-to-GDP ratio*



* Includes short- and long-term loans (excluding inter-company loans), factoring and leases.

By June 2011, the decline in the stock of loans granted to companies was 16%, year-on-year (see Figure 7). Compared to a year ago, **corporate debt to the domestic banking sector**[5] as a ratio to GDP shrank by 18 percentage points to 49% by the end of June 2011. According to financial account data, at the end of the first quarter of 2011 the **total debt burden** of companies as a ratio to GDP was 115%, which is 15 percentage points smaller than the average of euro area countries.

Loan repayment ability

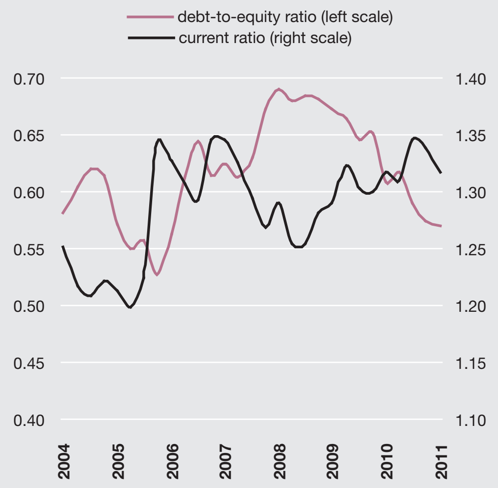
The **debt-to-equity ratio** of companies has dropped considerably after peaking in mid-2008, and it had stabilised below its pre-crisis level by the end of the second quarter of 2011 (see Figure 8). Meanwhile, owing to a decline in cash and deposits the **current ratio** deteriorated, although compared to its long-term average it

[5] Also includes factoring and leases as well as liabilities to domestic banks.

performed relatively well in the first half of 2011. As for the sustainability of the corporate loan repayment ability, the key lies within the further movements of these two structural indicators. The higher the current ratio, or the coverage of short-term debt by liquid financial assets, and the lower the debt-to-equity ratio, the easier it will be for companies to service their increasing loan expenses in the future.

The interest coverage ratio, which is more dependent on market outlooks, improved even further in 2011, as key interest rates dropped and the operational profit of companies increased (see Figure 9). As the euro area interest rates are not expected to rise significantly in forthcoming quarters, the loan repayment ability of companies may be more threatened by a decline in global demand. The cash flows of companies may thus shrink and hamper their ability to fulfil their existing loan commitments.

Figure 8. Indicators of companies' loan repayment ability

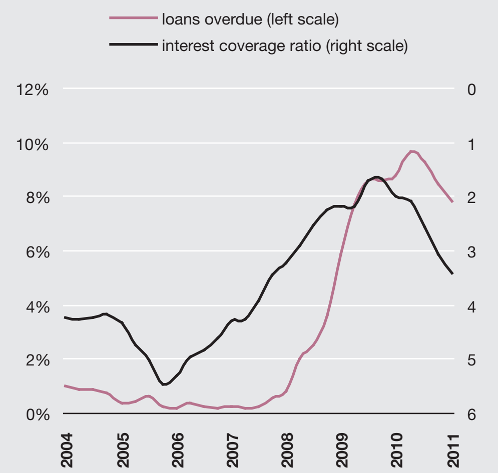


LOAN REPAYMENT ABILITY OF HOUSEHOLDS

In the second quarter of 2011, the trends from economic indicators remained positive and thus strengthened the confidence and financial position of households. However, in the third quarter the confidence indicators dropped again, which may indicate growing insecurity about future economic developments (see Figure 10).

Despite the rapid economic growth and growth in exports, the consumer confidence indicator calculated by the Estonian Institute of Economic Research fell in August compared to the previous month in Estonia and to the euro area as a whole, but still remained above its long-term average. Consumer confidence is still dampened by high inflation, but the rise in prices is expected to decelerate in the future. Households regard their financial situation and their ability to save as relatively stable. However, their expectations for the economic situation of the country in one

Figure 9. Loans overdue for more than 60 days and interest coverage ratio



Sources: Statistics Estonia, Eesti Pank

year's time have lowered, which stems from the growing insecurity in the euro area among other factors. In the labour market, unemployment is still expected to fall, but the pace is expected to start waning.

According to Statistics Estonia, **changes in the labour market** have helped to reduce the risks related to household incomes. In the second quarter of 2011, the number of people employed increased by 7.8%, year-on-year. Together with a rise in employment, the number of people unemployed also dropped considerably. The unemployment rate also dropped compared to previous months – after peaking at 19.8% in the first quarter of last year, it had fallen back to 13.3% by the end of June 2011. Although the share of the long-term unemployed remains high, with 50.7% of the total unemployed having been jobless for 12 months or longer, the fall in unemployment in Estonia has been the fastest in the euro area during the period of economic recovery.

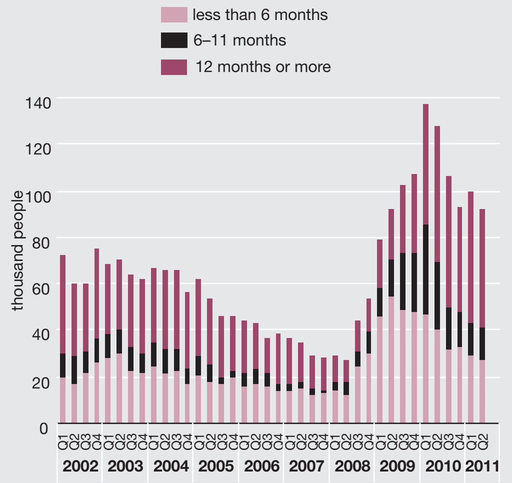
Average **gross monthly wages** rose for the fifth consecutive quarter and posted 857 euros in the second quarter of 2011, an increase of 4.2% over the year. Real wages, which also consider the impact of changes in consumer prices and describe the purchasing power of wages, have been in decline for over two and a half years. Compared to the second quarter of 2010, real wages dropped by 1%.

However, according to the Estonian Institute of Economic Research households regard their ability to save as relatively stable despite the decrease in real income. The improved capital buffer of households is also reflected in their **financial position** (see Figure 12). According to financial account data, the year-on-year growth of financial assets posted 3.3% and financial liabilities diminished by nearly the same amount, falling 3%. In the first quarter of 2011, the cash and deposits of households covered 55.5% of their total debt burden and they have even

Figure 10. Consumer confidence indicators

Source: European Commission

Figure 11. Unemployment



Source: Statistics Estonia

climbed by 3.3 percentage points over the year.

The growth in household **deposits** accelerated in July 2011 (see Figure 13). The total deposit stock exceeded 4 billion euros, which is 11.8% more than in July 2010. Half of the total deposits consisted of overnight and demand deposits, which experienced a 20% rise compared to the same period a year ago. The high share of liquid deposits may stem from the cautious attitude of households towards the future and from the relatively low interest rates for time deposits. At the end of the second quarter of 2011, the volume of time and savings deposits saw a year-on-year increase after declining for five straight quarters. In July the growth continued and at month-end the deposit stock posted 2 billion euros and growth of 4% from last year.

The **debt burden** of households diminished even further during recent quarters, but still remains relatively high as a ratio to GDP and disposable incomes (see Figure 14). In the first quarter of 2011, the debt burden of households was 51.5% of GDP, which is nearly 7 percentage points less

Figure 13. Household deposits

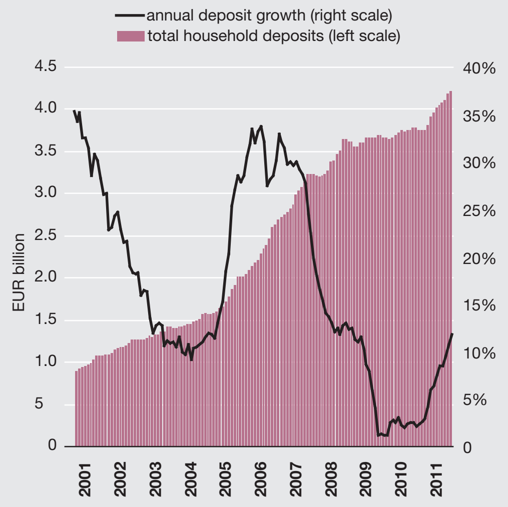


Figure 12. Financial position of households

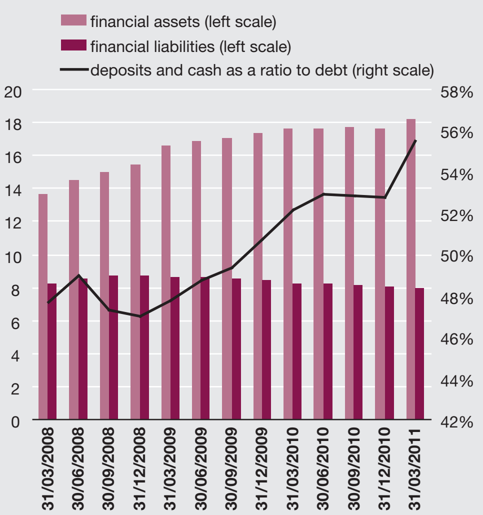
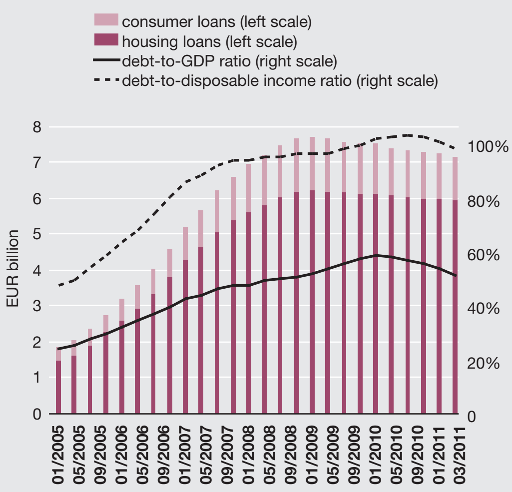


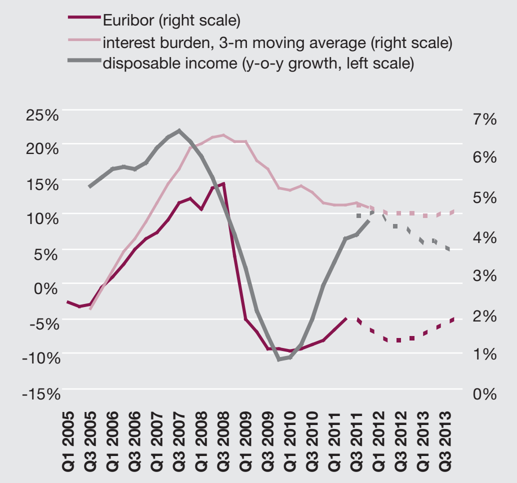
Figure 14. Household debt burden



than in the fourth quarter of 2010. The ratio of household debt to disposable income was 98%, which is 4.7 percentage points less than in 2010. In addition to the drop in loan stock, the debt burden was also reduced by GDP growth.

At the end of the second quarter of 2011, the household **interest burden** (the ratio of interest expenditure to disposable income) stood at 4.6% (see Figure 15). As the spring forecast of Eesti Pank expects disposable income to increase further, though the pace of growth will start slowing down in the second quarter of 2012, and expects the loan stock to decrease, the forthcoming periods will ease the interest rate burden of households, and the risks that might hinder loan repayment will decline. However, the risk that stems from the slowdown of global economic growth and affects disposable incomes means that the interest rate burden might increase in the future.

Figure 15. Household interest burden and disposable income



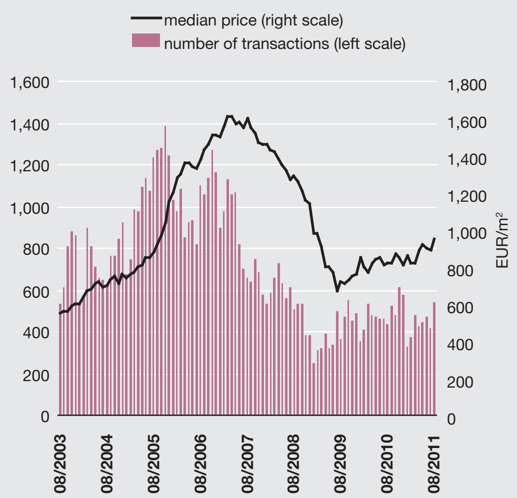
Developments in the Estonian real estate market

Housing market

The housing market of Tallinn has recovered slightly with the first eight months of 2011, but no great changes have occurred despite the relatively positive macroeconomic developments.

In terms of transactions and prices, the apartment market remains at the level of 2003 and 2005, respectively. By the end of August, the number of real estate transactions performed in 2011 was only 3% higher than a year ago. Meanwhile, the turnover of real estate transactions has increased by 14% owing to rising prices and changes in the structure of transactions.The 15% annual growth in the median square meter price (940 €) of real estate transactions in August has been influenced by a

Figure 16. Number of transactions with apartments in Tallinn and median price



Sources: Land Board, Eesti Pank

rise in the number of transactions with new apartments (see Figure 16).

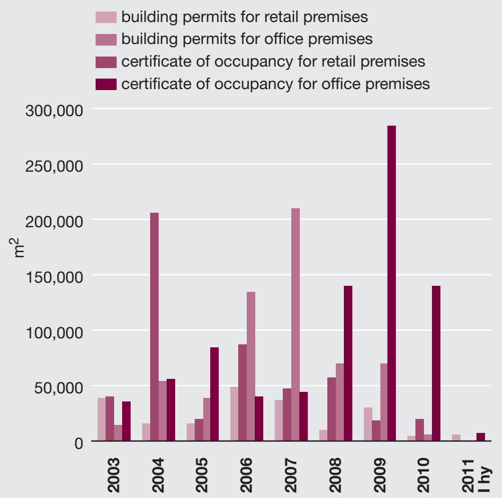
Real estate supply has improved considerably. The number of apartments for sale in Tallinn has risen by nearly 1,000 apartments from a year ago. New development projects have also contributed to growth. According to Statistics Estonia, in the first half of 2011 building permits were issued for the construction of 1,109 residential spaces, which is three times more than in 2010. However, the construction of new developments may not pick up as vigorously, given that construction prices have increased significantly and exceed the growth in real estate sale and rental prices. Although real estate sellers are facing an upward price pressure, a swift and substantial price hike is not possible as consumers are extremely price-sensitive and are aware of the factors that shape demand.

Office and commercial premises market

The market of office and commercial premises has shown more positive signs in light of the economic recovery. The promising tendencies are related to activity growth rather than price developments. Nonetheless, the price developments in the first half of 2011 indicate that the situation has stabilised. If the economic situation improves further and there will be a shortage of office spaces that correspond to demand, rental prices may well climb in the near future. Considering the general price hike, the annual growth in the rental prices of office spaces is estimated at 5–15%.

The supply of office spaces for sale and rent has shrunk and few new buildings are being constructed. No new office buildings were opened in Tallinn in 2010 and no new large-scale spaces are expected to enter the market before 2012 (see Figure 17). Thus, the vacancies of high-quality and well-situated office spaces are also decreasing. The average vacancy rate of such office spaces dropped to about 12% by spring 2011. In retail trade, the vacancy rate of spaces in larger and more modern centres is still almost non-existent.

Figure 17. Retail and office buildings with building and use permits in Tallinn



Sources: register of construction works, Statistics Estonia

Although the commercial real estate market continues to revolve mainly around rental spaces, the market of real estate investments has picked up too. This indicates that real estate risks have somewhat decreased. Access to funding has slightly improved and due to the insecurity in money markets, real estate investment is regaining ground. In 2011, some major transactions with shopping centres have already been concluded and detailed plans for several immovables have been initiated in Tallinn. All of them involve the construction of new office buildings.

QUALITY OF ASSETS

The securities portfolios of banks operating in Estonia are relatively small. Although the proportion of securities in assets has increased slightly owing to a decrease in the credit portfolio, at the end of the second quarter of 2011 it still comprised only 9% of all assets, most of which are debt instruments. The securities also include bonds from the trouble-stricken euro area countries, but only a minuscule amount of them (see Figure 18). Their direct influence on the banking sector's capital via write-offs would be minimal even in the most negative scenario. The indirect contagion channels of the crisis may prove to be much more important, mainly stemming from the emergence of tensions in the banks' funding markets (see *Funding of parent banks*).

The quality of the banks' assets is mostly dependent on the quality of their credit portfolios.[6] The quality of the credit portfolio, which accounts for nearly four-fifths of the banks' assets, has improved as expected. By the end of the second quarter, the share of **loans overdue for more than 60 days** dropped to 6.0% of all loans. The stock of overdue loans has declined by 89 million euros in the first half-year (see Figure 19). However, loans that are long overdue are probably not going to recover and most of the decrease in overdue loans, 66 million euros, stems from write-offs of uncollectible receivables. The improvement in credit quality slowed down in the second quarter when new overdue loans emerged in the corporate loans.

In the first half-year, the stock of household loans overdue for more than 60 days dropped by nearly 17 million euros, 80% of this drop coming from write-offs (see Figure 20). The consumer credit portfolio improved, but during the first half-year the positive changes in the labour market exerted

[6] This chapter only considers bank loans without leases and factoring, which make up over 90% of the aggregate credit portfolio.

Figure 18. Banking sector's holdings of distressed sovereign bonds (% of CET1 capital)

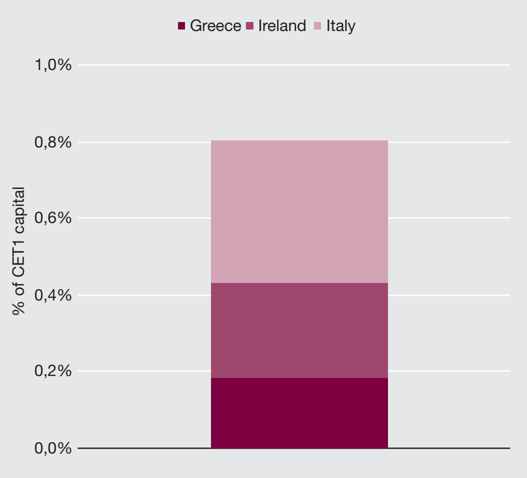
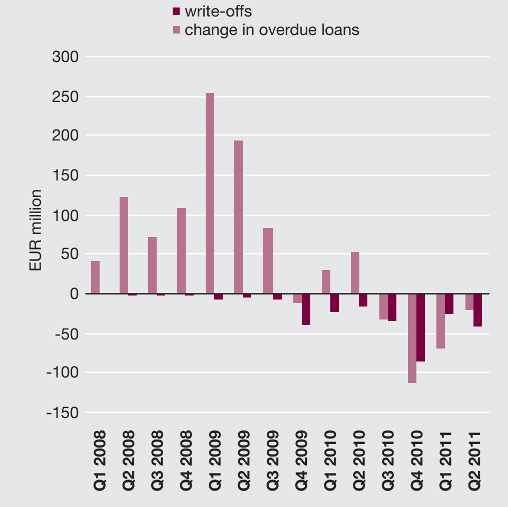


Figure 19. Quarterly change in loans overdue more than 60 days and write-offs



no significant influence on the quality of housing loans. Overdue corporate loans decreased by 72 million euros, 73% of this coming from write-offs. Manufacturing sector's credit quality has improved over the last half-year as the result of rapid export growth. In contrast to the situation in other sectors, overdue loans in this sector have declined mainly due to recovery. However, overdue loans in both trade and the real estate and construction sector – which account for the majority of bad debts (see Figure 21) – only diminished in the first half-year because of more frequent write-offs. Although the market situation has improved, the loan quality of some real estate companies deteriorated in the second quarter.

The **provisions** for loan losses have declined slightly over the last half-year mainly due to uncollectible receivables being written off. Banks reduced their provisions in the first half of 2011 by 76 million euros; 87% of this resulted from the write-off of receivables. Therefore, the ratio of provisions to overdue loans has dropped somewhat, but still remains high. The ratio of provisions to loans overdue for more than 60 days posted 77% and 4.8% of the credit portfolio had been accounted for as loan losses by the end of July.

Although economic activity grew faster than forecast in spring, the recovery of loans overdue for an extended period has remained more sluggish than expected. Most companies that faced long-term problems in meeting their loan liabilities to banks have not been supported significantly by the improved economic environment, and their payment difficulties have tended to be permanent. Neither have the bad debts of households recovered to any significant extent. Therefore, in the forthcoming quarters the stock of bad debts may decrease mainly due to write-offs, as there are still large loan loss reserves.

Figure 20. Change in loans overdue for more than 60 days by sector (Jan to June 2011)

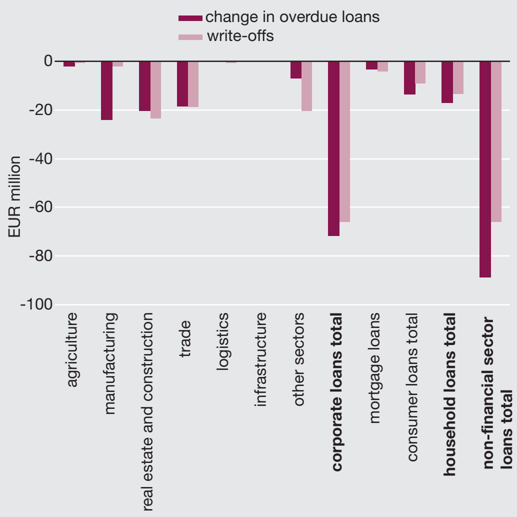
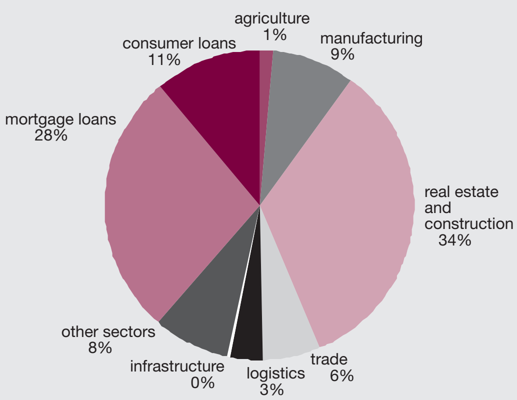


Figure 21. Structure of overdue loans' portfolio as at 31/8/2011



III. THE STRENGTH OF FINANCIAL INSTITUTIONS

BANKS

Liquid assets and liquidity risk

The minimum reserve requirement for banks was lowered from 15% to 11% in September 2010 and to 7% in November 2010. Since January 2011, the minimum reserve requirement in Estonia is 2%, the same as in other euro area countries. Lowering the reserve requirement released a great amount of banks' liquid assets. Partially, the reserve assets released from the central bank were exchanged for claims against commercial banks. Some banks reduced their total liquid assets and balance sheet already in the second half of the previous year (see Figure 1). The decrease in the volume of liquid assets that started at the end of 2010 lasted until April 2011, when liquid assets totalled 20% less compared to their level prior to reducing the reserve requirement. Since April, banks have increased their liquid assets again by nearly a billion euros.

Banks' claims on the central bank have dropped by 61%, or by 690 million euros, since the beginning of 2011. Claims on other banks have increased by 1.4 billion euros. At the end of August, the liquid assets of banks totalled as much as 4.4 billion euros, which is 612 million euros more than at the end of 2010. **Liquid assets** have grown owing to a rise in deposits, while the loan portfolio has shrunk. The structural change that took place in the balance sheet of Swedbank owing to the sale of its subsidiaries in July is also noteworthy[1]. The share of liquid assets in the consolidated balance sheet of Estonian banks has risen to 24%, which is the highest level in three years (19% at the end of 2010).

Additionally, as participants in the Eurosystem, banks operating in Estonia can use the **credit and deposit facilities provided by the**

[1] See also background information *The impact of changes in Swedbank's legal structure on the aggregate balance sheet and capital of the Estonian banking sector.*

Figure 1. Banks' liquid assets and the reserve requirement

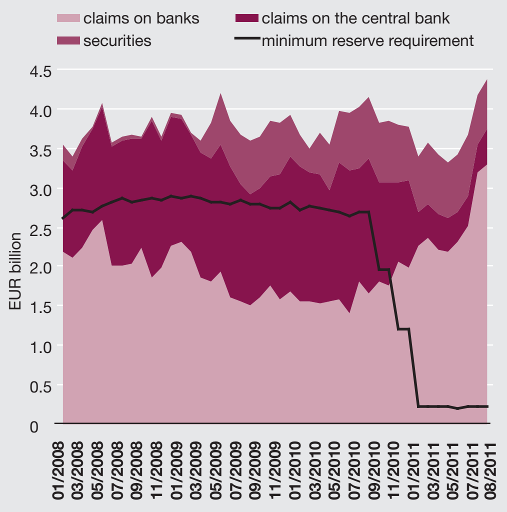
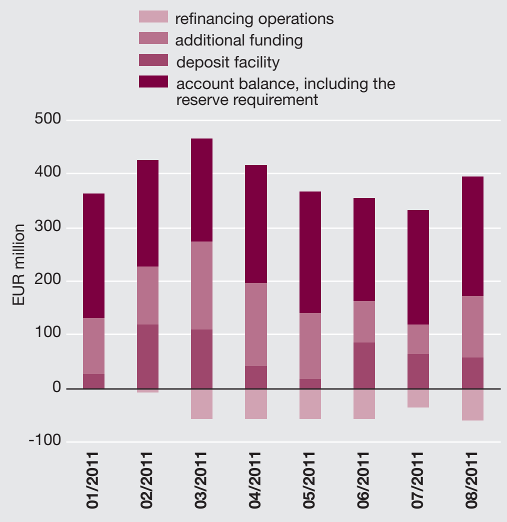


Figure 2. Banks' assets and loans with the central bank



central bank for liquidity management. So far, market participants have been using the deposit facility of the central bank far more than the credit facility (see Figure 2).

Funding

2011 witnessed the continuation of the existing trend in the funding of banks. Compared to the end of 2010, the amount of funds obtained from parent banks has been reduced by 1.5 billion euros to 5.1 billion euros. This is 43% less than at the end of 2009, and thus it may be concluded that the reliance of local banks on the funding from parent banks has decreased (see Figure 3). Repayments to parent banks have been made from the funds released due to the euro changeover and also from increased deposits. In July, the repayments also grew significantly owing to Swedbank's structural changes.

Within eight months in 2011, the deposits obtained from the general government, companies and households increased by 390 million euros (3.6%). The share of **deposits** in banks' funding remained at its peak level of 68% for the second consecutive month. The ratio of the non-financial sector and general government loans to deposits has dropped to 142%, which means that the loans issued by banks exceed deposits by 4.7 billion euros (see Figure 4). Nevertheless, owing to a decrease in the loan stock and an increase in deposits, their spread has shrunk by 4.2 billion euros compared to its peak at the end of 2008. The funding risk of banks is abating, since no strong growth in the stock of loans issued is expected in the near future. Instead, deposits are expected to grow in light of heightened global insecurity and the coverage of loans by deposits will increase further.

Profitability

The profitability of banks operating in Estonia improved in the first half of 2011. In the first two

Figure 3. Structure of banks' liabilities

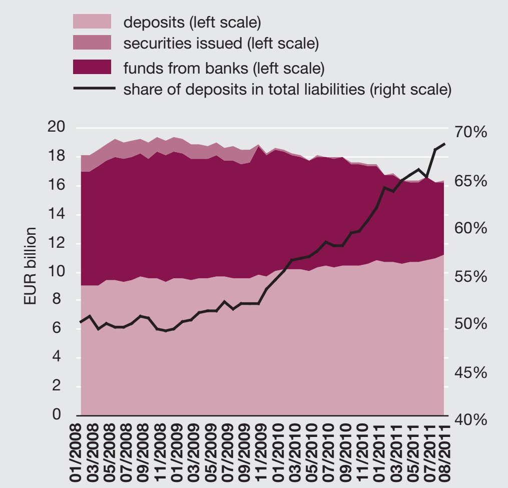
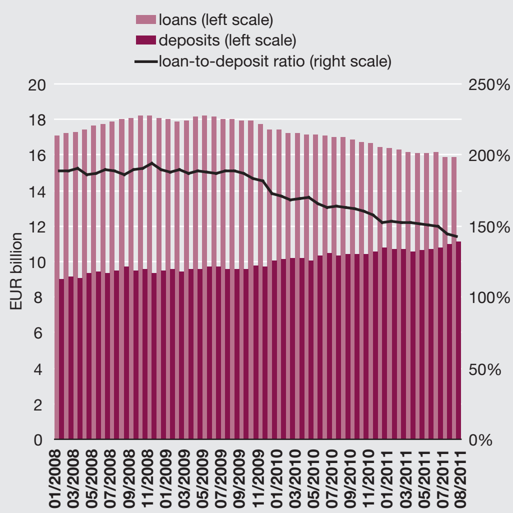


Figure 4. Banks' loan-to-deposit ratio



quarters, banks posted a total **net profit** of 142.5 million euros (see Figure 5). The return on assets at 1.5% was only slightly smaller than the average of the previous growth period.

This year, the profitability of banks has again mainly been fuelled by the decline in loan losses (see Figure 6). Meanwhile, the annual growth in **profit before loan losses** has slowed down, as it dropped to 0.4% in the second quarter of 2011. The slower growth rate mainly stems from a slight decrease in financial income, but also from a drop in net fee and commission income.

In the second quarter of 2011, the share of banks' **net interest income** in total income rose by nearly 10 percentage points compared to a year ago to 68%, which is markedly higher than the long-term level of this indicator at 60%.[2] In the first half of 2011, the net interest income rose by 29% compared to a year ago as the result of a drop in interest expenses, but also due to an increase in interest income. By the second quarter of 2011, however, the positive impact that stemmed from the drop in the cost of funding had abated and net interest income continued to grow only thanks to the rise in the Euribor, the key interest rates of loans (see Figure 7).

The cost of funding has remained low owing to an increase in the share of time deposits in the structure of the banks' liabilities – with their relatively low interest rates they have replaced the more expensive funding obtained from parent banks. Although this trend should continue, net interest income is nevertheless expected to decrease at the end of 2011 and in 2012. On the one hand, the increase in interest income will be inhibited by the postponement of the expectations of a rise in the Euribor and by the shrinking loan portfolio. On the other hand, the rise in the cost of banks' market-based funding could become a threat, should

[2] The share of net interest income was this high at the end of 2008, when the ability to earn financial income suffered a major setback.

Figure 5. Banks' net profit and net loan losses

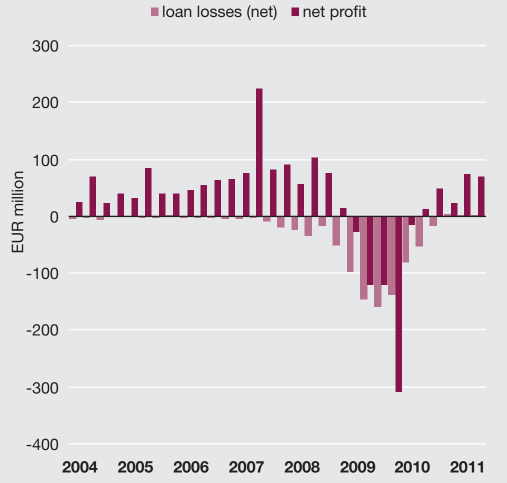
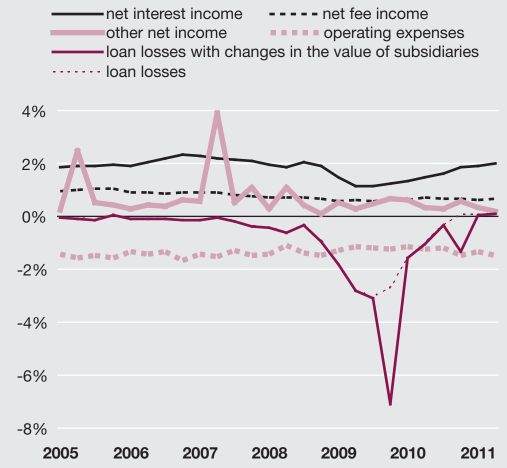


Figure 6. Banks' incomes and expenses by type (% of average assets per quarter x 4)



global liquidity tensions erupt again. The accompanying price pressure may also spread to the market for retail deposits, although the improvement in banks' loan-deposit ratio has reduced the risks on banks' net interest income.

The euro changeover curbed financial incomes as expected, as the banks' income from foreign exchange transactions dropped. However, the decrease in the net fee and commission income by 6%, year-on-year, was smaller than anticipated. Although the standardisation of domestic and cross-border euro payments probably slightly reduced fee and commission income, it was partially balanced by an increase in income resulting from a rise in card payments. Within the first eight months of 2011, around 16% more card payments were made than a year ago (see Figure 8).

The euro changeover significantly increased the administrative costs of banks in the fourth quarter of 2011. The growth rate of expenses also remained rapid in 2011, climbing by an average of 11% compared to a year ago (see Figure 9).

Figure 8. Monthly turnover of card payments in POS terminals and annual growth

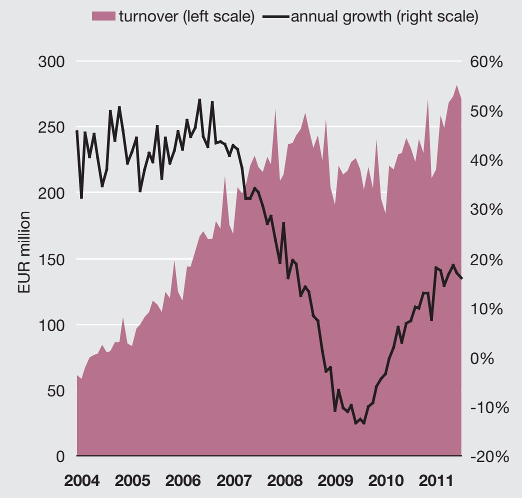


Figure 7. Interest rate on banks' funds and 6-month Euribor

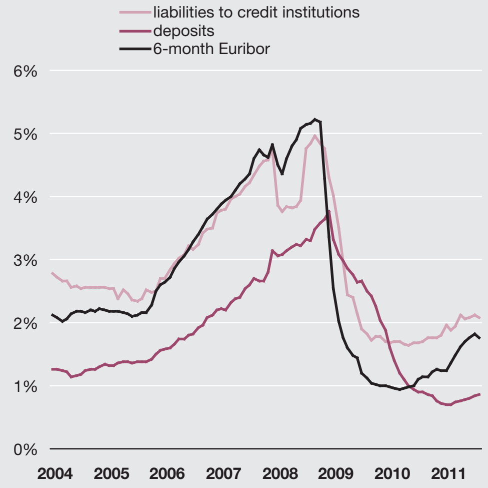
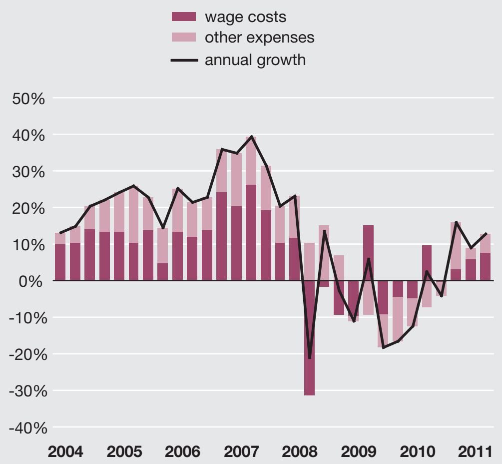


Figure 9. Annual growth in operating expenses and contributions of wage costs and other expenses



While the end of 2010 saw a swift rise in other administrative costs, wage costs posted faster growth in the first half of 2011. In the second quarter the rise in wage costs reached 14%. Meanwhile the cost-income ratio did not deteriorate, thanks to the faster growth in income. However, considering that income perspectives have diminished slightly over recent months, the continuing growth in expenses may cause a setback to the improvement in cost-effectiveness that has occurred in recent years.

CAPITALISATION

The balance sheet of the banking sector[3] strengthened even further in the first half of 2011 (see Figure 10). The share of liquid assets remained relatively high despite the lowering of the reserve requirement. On the liabilities' side, however, the changes in the structure of funding are still notable. Funding is increasingly based on retail deposits, while equity capital has also climbed.

Capital requirements for the banking sector's largest risk – credit risk – continued dropping in 2011 as the loan portfolio declined. In addition, in the first half-year capitalisation was strengthened by the reduction of capital requirements for other, mainly operational, risks.

The banks' **own funds** that they keep to cover their risks dropped notably in the first half of 2011 (see Figure 11). In the second quarter, the level of the banking sector's Tier 1 capital fell by more than 240 million euros as profits were distributed. The banks' Tier 2 capital also shrank by a total of 56 million euros, fuelled by the repayment of subordinated debt. The share of Tier 1 capital in the total of the banks' own funds did not change from the 78% recorded in the previous quarter.

[3] For this chapter, the figures for the banks have been consolidated.

Figure 10. Aggregate consolidated balance sheet of the banking sector

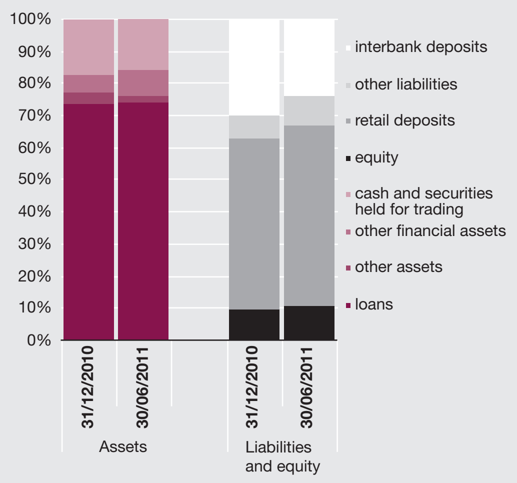
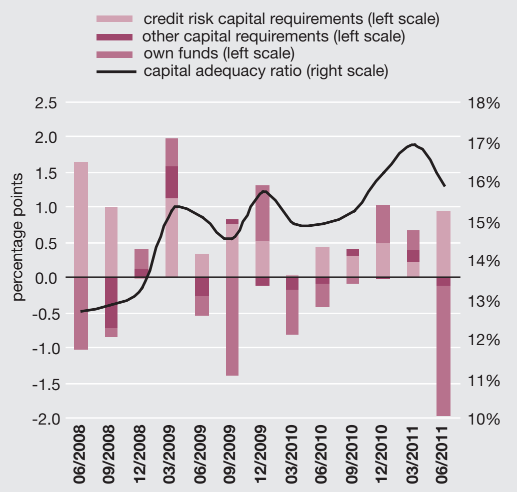


Figure 11. Change in capital adequacy ratio from previous quarter by components



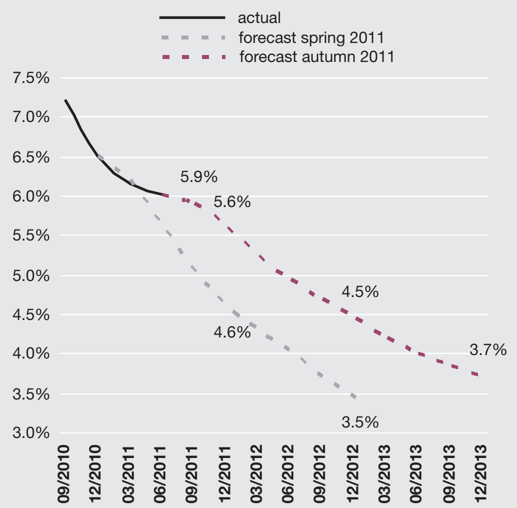
By the end of the second quarter of 2011, the banking sector's capital adequacy ratio had dropped by 1 percentage point to 15.9%. This was caused by the reduction of the banks' own funds, which outweighed the positive effect from the drop in credit risk capital requirements. At the same time, capital adequacy ratio still considerably exceeds the minimum 10% requirement.

Forecast for and stress test of the banking sector

Forecast

The quality of the loan portfolio has improved in 2011 mainly due to the write-off of uncollectible receivables. The recovery of loans overdue for more than 60 days has been significantly weaker than was estimated in spring, despite the surprisingly favourable economic environment. The portfolio of overdue loans is expected to shrink much more slowly than was forecast in spring because of the considerably lower recovery rate of overdue corporate and household loans. The portfolio of overdue loans will be mainly decreasing as uncollectible receivables are written off, while the recovery of delinquent customers will have a much smaller impact. By the year-end, the **share of overdue loans in the loan portfolio is forecast to drop below 6%, and fall to 4.5% by the end of 2012** (see Figure 12).

Figure 12. Loans overdue for more than 60 days as a percentage of the loan portfolio



Like overdue loans, the provisions for loan losses are in decline due to write-offs. Banks will probably not reverse their provisions into profit and it is presumed that the coverage of loans overdue for more than 60 days with loan-loss provisions will remain around 80%.

The operating profit of banks is hampered by the modest loan portfolio growth and lower interest rates. The banks are also threatened by a potential increase in funding costs. Banks have partially been able to compensate for the reduced conversion, fee and commission income with greater incomes from card payments. Even so, net interest income remains under pressure and thus the profitability of the banking sector is somewhat smaller than was expected in spring. In all, in 2011 the banks operating in Estonia will earn a **profit of approximately 0.6 billion euros**, about 60 % of which will consist of the one-off profit from the restructuring of the Swedbank Group. In 2012, banks are estimated to earn a profit of 0.3 billion euros.

This year, the capitalisation of the banks will continue to rise. Capitalisation will be improved by the profits earned. Loan-loss provisions are not expected to have an impact on capital, as new provisions are expected to be equal to the reversals of provisions made earlier. Moreover, the size of the loan portfolio will probably have no significant effect on capitalisation until the end of 2012. The capitalisation of the banking sector[4] will post nearly 19% by the end of this year and by the end of 2012 it is estimated it will reach 22% (see Figure 13).

Stress test

The greatest risk to the Estonian banking sector is the credit risk. The stress test of the banking sector examined what the maximum increase would be in the stock of overdue loans that the banking sector could endure with the current capital buffer. At the end of August 2011 this buffer, or the banks' own funds beyond the minimum requirement of 10% to meet the capital adequacy ratio, was 680 million euros[5].

Figure 14. Absorbable growth in overdue loans at current capital buffer

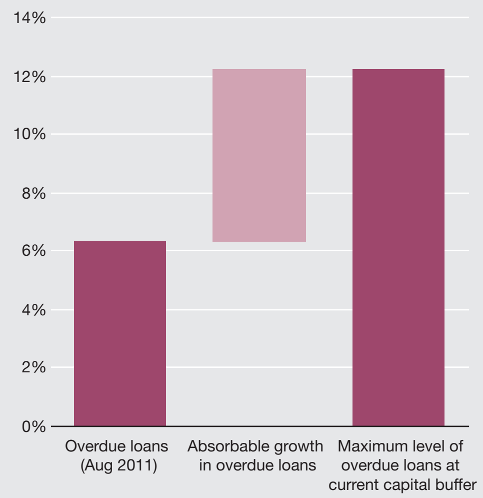


Figure 13. Projected change in capital adequacy ratio by components

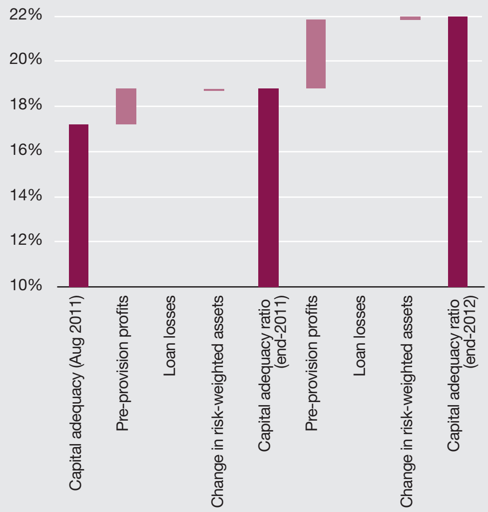
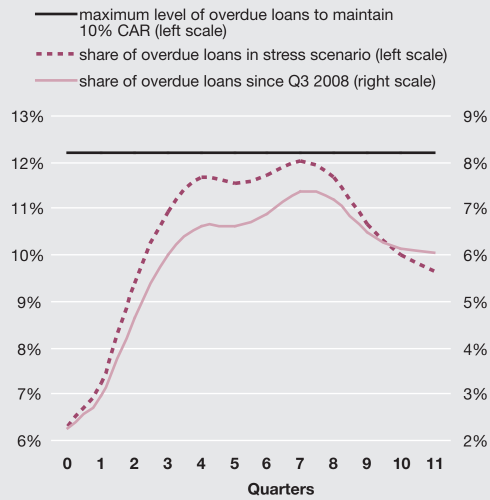


Figure 15. Level of overdue loans and capital buffer



[4] On a solo basis.

[5] Including unaudited profits earned this year.

Presuming that the loan-loss provisions to loans overdue for more than 60 days should still post 80%, this buffer would suffice to fulfil the 10% adequacy rate even if the share of overdue loans in the loan portfolio increased to 12.2% (see Figure 14).

In a negative scenario where the stock of overdue loans started to climb from the end of August 2011 as rapidly and as massively as it did in autumn 2008, the current capital buffer of the banking sector would be sufficient to withstand such a growth in overdue loans (see Figure 15). This is a conservative presumption, as the profits before loan losses that the banks would still be earning have not been included; the positive impact of shrinking assets on capitalisation have not been included either, so the banking sector's capital buffer is currently sufficient to survive another sharp cycle of deterioration in loan quality.

The essence and implementation of the countercyclical capital buffer in Estonia

The global financial crisis showed that the capital level and quality requirements for the banking sector are too lenient, as they amplify economic cycles and thus threaten financial stability. The new global regulatory framework (Basel III), which will be enforced in Europe through amendments to the directive on capital requirements, will establish new and stricter capital requirements on the amount of credit institutions' own funds that must be held to contain the amplification of economic cycles. In addition to stricter minimum capital requirements, two capital buffers will be laid down: the **capital conservation buffer**, which is the same for all banks, and the **countercyclical capital buffer**, which will be determined in the jurisdiction of every Member State. Additional buffers must be formed from the highest-quality capital that is common equity Tier 1. Credit institutions whose capital falls below the buffers will be automatically subject to restrictions on the distribution of earlier profits and dividends until the target is reached.

The essence of the countercyclical capital buffer

The aim of the countercyclical capital buffer is to improve the banking sector's resistance to risks that stem from rapid credit growth. A countercyclical capital buffer will be required during periods of excessive credit growth if this is accompanied by increasing systemic risk. The requirement is released during economic declines, so that banks would continue loan supply throughout the downward cycle. The countercyclical capital buffer rate changes over time and generally comprises 0–2.5% of risk-weighted assets. When the country's situation and specific financial stability risks have been considered, a buffer exceeding 2.5% may be established if it proves necessary. If a credit institution is engaged in cross-border operations, the institution specific counter-cyclical capital buffer will consist of the weighted average of the buffer rates that apply in the jurisdictions where the relevant credit exposures of the bank are located.

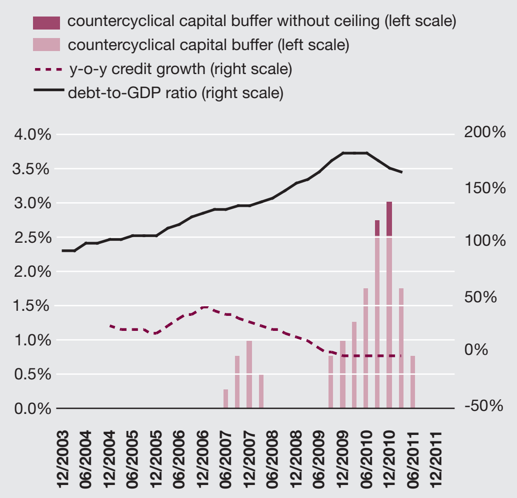
As long as the counter-cyclical capital buffer remains below 2.5%, the Member States must reciprocally acknowledge and implement these capital requirements. As for the share of the buffer that exceeds 2.5%, the countries may choose whether or not to accept another Member State's assessment and apply a higher capital rate on credit institutions that have been authorised in their Member State. Upon the establishment or elevation of the buffer rate, banks must apply the new requirement no later than 12 months from the date when the new rate was announced. Decisions regarding the reduction of the buffer rate come into force immediately.

As the aim of the countercyclical capital buffer rate is to avoid risks that emanate from excessive loan growth, the buffer must be connected to the dimension of credit growth. To guarantee international conformity, the basis for determining the buffer level is the amount of credit as a ratio of GDP and its deviation from the long-term trend. Other important structural variables may also be taken into account, in terms of risks that endanger financial stability. The European Systemic Risk Board (ESRB) may make recommendations to Member States regarding the enforcement and monitoring of buffers.

The implementation of the countercyclical capital buffer

At European Union level the ESRB is elaborating guidelines for the calculation of the countercyclical capital buffer. Until then the capital buffer rate may be calculated using the Basel III methodology, under which the buffer rate is positive if the loan stock as a ratio of GDP exceeds its long-term trend by at least 2 percentage points; the buffer rate reaches its maximum level of 2.5% when the deviation is greater than 10 percentage points. If the loan stock as a ratio of GDP deviates from its trend by 2–10 percentage points, the capital buffer rate varies linearly in the range of 0–2.5%. Loan stock has been determined as the total debt burden of the non-financial sector – resident and non-resident private persons and non-financial companies – in the economy.

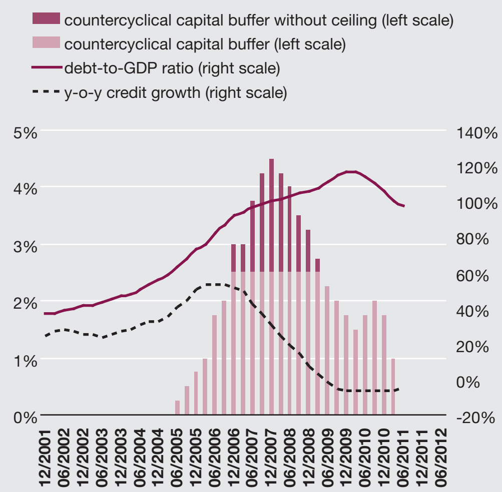
Figure 16. Calculated countercyclical capital buffer according to the financial account



Financial account data show Estonian national authorities should have taken the decision to implement the countercyclical capital buffer requirement for the first time in 2006. Banks should have applied this requirement for a second time from at least the fourth quarter of 2009 until the end of the second quarter of 2011, when the signs of excessive credit growth had actually abated from the economy (see Figure 16). The credibility of this calculation model is questionable due to the financial account's short historical data series, which does not include the cyclical component.

Calculations based on banking statistics describe the pre-crisis situation more adequately. They show that the countercyclical capital buffer requirement should have been applied in Estonia a few years before the onset of the global financial crisis (see Figure 17). Credit growth exceeded its long-term trend in 2004 and this should have been followed by a decision to establish the capital buffer requirement and the enforcement of the requirement within at most 12 months. Since 2005, credit growth became so rapid that banks should have fulfilled a counter-cyclical capital buffer requirement of at least 2.5% or even higher.

Figure 17. Calculated countercyclical capital buffer according to banking statistics



The impact of changes in Swedbank's legal structure on the aggregate balance sheet and capital of the Estonian banking sector

The history of the Baltic sub-consolidation group of Swedbank dates back to the second half of the 1990s, when the bank's predecessor Hansapank expanded to the two countries to the south, Latvia and Lithuania. In 2005, Swedbank acquired Hansapank along with its developed structure, and the sub-consolidation group Swedbank Baltic Banking was established in Estonia. To a certain extent, the liquidity and capital of the Baltic group were managed in Estonia, which entailed higher buffers at the level of the Estonian unit. As, on average, Swedbank's assets have comprised 55% of the assets of the Estonian banking sector since the beginning of this century, such risk management significantly distorted the liquidity and capital indicators of Estonian banking. In addition, the intermediation of funds between Swedbank and its Baltic subsidiaries in Latvia and Lithuania had an impact on balance of payments data.

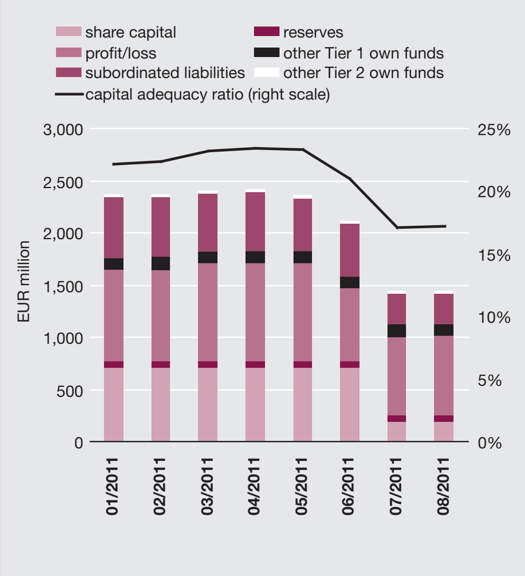
On July 2011, the Estonian-registered Swedbank AS sold its Latvian and Lithuanian subsidiaries to its Swedish parent bank Swedbank AB. Under the new legal structure, the Latvian and Lithuanian subsidiaries and their affiliates no longer belong to the consolidation group of Swedbank AS.

To reduce the high capitalisation fuelled by the structural changes, Swedbank AS lowered its share capital from 603 million to 85 million euros and repaid the parent bank over half of its subordinated loan stock. The capital level also fell after dividends were paid to the parent bank from the earlier profits earned in Latvia and Lithuania. All in all, by the end of July the Estonian banking sector's own funds shrank by 0.9 billion euros, or 40%, due to which the aggregate solo capital adequacy dropped from 23% in May to 17% at the end of July[6] (see Figure 18).

As a result of the transaction, banks' financial investments in affiliated companies decreased by 96%. In addition, in the third quarter this created a significant growth in net profit, which increased over five-fold compared to the previous quarter, while without the impact of this transaction the net profit of the quarter would have risen by 27%. The extraordinary profit also boosted liquid assets substantially: in two months, claims on other banks rose by nearly 40%, although this was also affected by other market factors.

[6] In earlier years, Eesti Pank has based the capitalisation stress tests of the Estonian banking sector on a capital level that did not include capital calculated in respect of the claims of subsidiaries located abroad.

Figure 18. The structure of banking sector's own funds on a solo basis and the capital adequacy ratio



The change in legal structure should improve the efficiency of the bank's capital management and simplify the bank's management by reducing its levels. The structural change is also positive from the perspective of banking supervision and crisis management.

INSURANCE COMPANIES

The Estonian insurance sector is operating on strong grounds and capitalisation is still high. At the end of 2010, the own funds of life and non-life insurance companies registered in Estonia exceeded the required solvency margin by four times.

However, the first half of 2011 was more difficult for the insurance companies than the previous year. The market and credit risks, which pose the greatest threat to the insurance sector, have reduced investment income (see Figure 19). Moreover, the slow recovery of domestic economy has made the insurance landscape difficult by causing strong competitive and price pressures, especially in non-life insurance. The cancellation rate of contracts has risen to over 2% and the small number of new contracts is not sufficient to replace the high contract termination rate. Therefore, with the first six months of 2011, the premiums of the insurance sector on insurance contracts fell by 4% in total (see Figure 20).

However, the economy is gradually recovering and the non-life insurance market is already showing some signs of growth. The drop in the sales income of non-life insurance companies operating in Estonia has halted, although the insurance premiums collected in the first and second quarters of 2011 still posted 1% less than in the first half of 2010. The non-life insurance market is largely shaped by developments in motor third party liability insurance and casco insurance, which are the prime types of insurance. What is positive is that the sale and leasing of new cars has gone up.

Although pension insurance has been on the rise since the beginning of 2011, the Estonian life insurance sector still largely relies on unit-linked insurance products. The share of the sales income from these contracts in ratio to total life insurance premiums, however, has dropped to 40% from a year ago. While in 2010 the favourable investment environment restored the interest of policy holders in unit-linked insurance products, in 2011 the insecurity in financial markets has inhibited the collection of insurance premiums. The stock market situation was quite negative in the first half of 2011. In addition, the public debt issues of Greece and other European border countries have made investors cautious. Life insurance companies collected 14% less insurance premiums from Estonian residents in the first six months of 2011 than they did over the same period last year.

In life insurance, income on both equity capital and the investment portfolios of policy holders shrank. Year-on-year, the return on investment remained below 3%. In unit-linked life insurance, which makes up 45% of the total assets of insurance companies, the investment risk is fully incurred by the policy holder and does not affect the creditworthiness of the companies. On the one hand, long-term low interest rates pose a risk, as they hinder the fulfilment of obligations arising from insurance contracts with guaranteed interest rates. The average guaranteed market interest rate is 3–4%, which has so far remained below the average return rate (4.4%) of the securities portfolios of life insurance companies (see Figure 21).

Figure 19. Net investment income

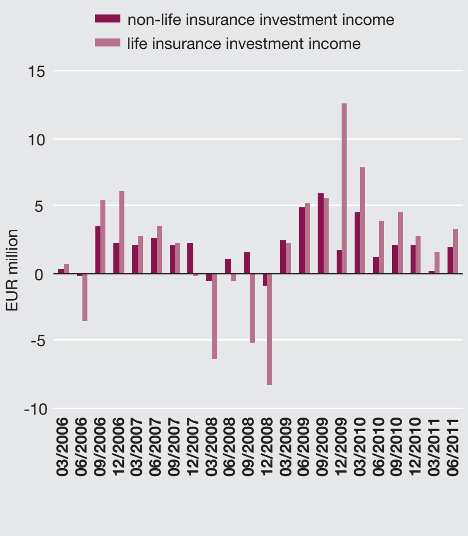
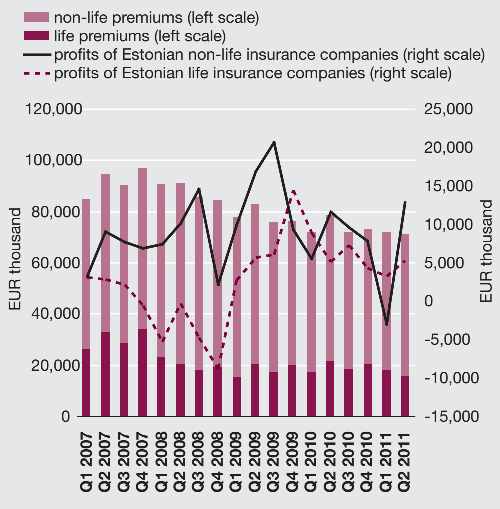


Figure 20. Profit of insurance companies and premiums from residents



Sources: Statistics Estonia, Eesti Pank

Figure 21. Distribution of guaranteed rate contracts by interest rates

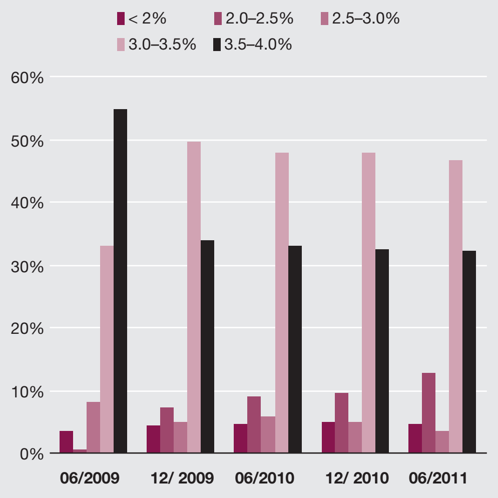
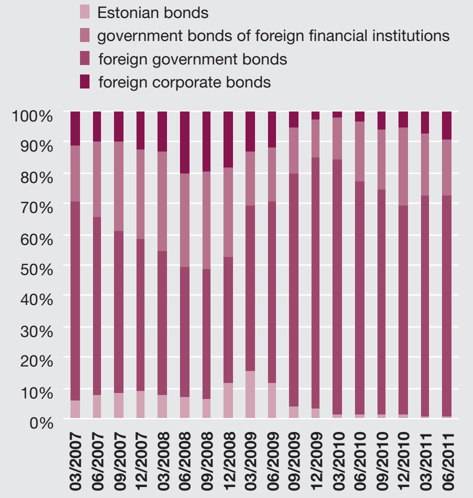


Figure 22. Debt security investments of life insurance companies by issuer

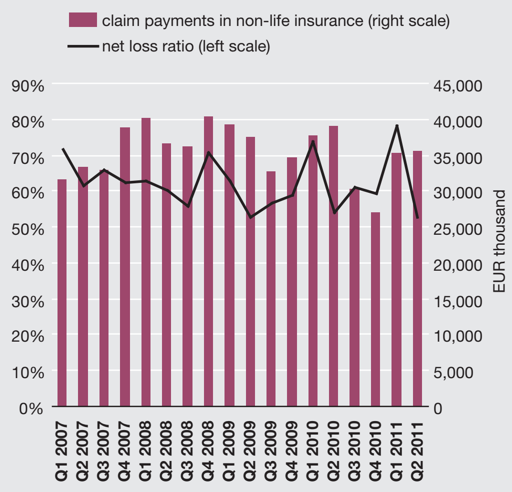


On the other hand, should interest rates hike abruptly, it would exert a negative impact on bond prices and reduce net income from the investments of life insurance companies. Investments in bonds and other fixed-income securities comprise about 60% of the financial investments of insurance companies. Despite financial problems in some European countries, no significant changes in the allocation of assets have been made and insurance companies still prefer to invest in fixed-income government bonds[7] (see Figure 22).

In the first and second quarters of 2011, the profit of both life and non-life insurance companies was nearly 40% smaller than a year ago. In addition to the decreased income from sale and investments, profitability has also been curbed by higher operational costs. With a year, conclusion costs have risen by over 20%. The economic results of non-life insurance companies were also affected by the difficult winter,

[7] Investments in foreign government bonds total 72%, of which 16% are German, 25% French, 15% Italian and 13% Lithuanian government bonds.

Figure 23. Claims and net loss ratio in non-life insurance



Sources: Statistics Estonia, Eesti Pank

which increased the frequency of insured events. The net loss ratio[8] rose to 78% in the first quarter (see Figure 23), but abated to an acceptable level of 53% by the end of the second quarter. Despite the remarkable decline, the sector still remains profitable and liquidity risk is minimal. The liquidity buffer of life and non-life insurance companies continues to be sufficient at 163 and 199 million euros respectively.

[8] Net loss ratio = the occurred net claims from reinsurance / earned net premiums from reinsurance.

IV. SYSTEMICALLY IMPORTANT SETTLEMENT SYSTEMS

PAYMENT AND SETTLEMENT SYSTEMS OF EESTI PANK

In the first half of 2011, around 96,638 payments a day were settled through the interbank payment and settlement systems managed by Eesti Pank at a total value of 1,240.3 million euros. The total value of Eesti Pank's payment and settlement systems was 71% higher than in the first half of 2010. Despite the increase in the total value of payments, the number of payments settled in the payment and settlement systems of Eesti Pank decreased by 1% (see Figure 1).

In the first half of 2011, 91% of the total value settled in the payment and settlement systems of Eesti Pank originated from payments made through TARGET2-Eesti, which posted 317 payments, or 0.3% of the total volume of payments. The value of payments settled in TARGET2-Eesti has increased significantly in the first six months of 2011. In part this follows the closure of the EP RTGS after Estonia joined the euro area and the channelling of EP RTGS payments to TARGET2-Eesti. However, the second and more important reason is that banks use TARGET2-Eesti actively for large-scale cross-border bank-to-bank payments (see Figures 2-3).

In the first half of 2011, the vast majority of interbank payments were still settled in the Settlement System of Ordinary Payments, the ESTA, with 99.7% of payments going this way. The average size of payments settled in the ESTA has been increasing since the end of 2009 and now exceeds the previous peak it reached in October 2008.

RISKS TO THE PAYMENT AND SETTLEMENT SYSTEMS AND THE OVERSIGHT ASSESSMENT

In overseeing systemically important payment and securities settlement systems, Eesti Pank follows its own framework for the oversight

Figure 1. Payment and settlement systems of Eesti Pank

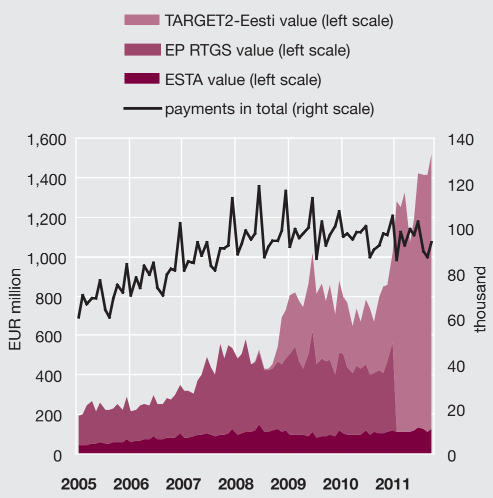
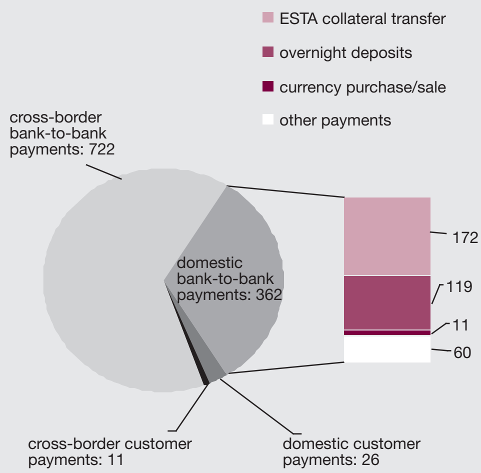


Figure 2. Average daily value of TARGET2-Eesti (EUR million), I hy 2011



of settlement systems[1]. In Estonia the systems subject to oversight are the ESTA, TARGET2-Eesti and the securities settlement system operated by the Estonian Central Securities Depository.

There were no incidents in the operation of the Estonian payment and settlement systems in the first half of 2011 that could have threatened financial stability or significantly hindered the performance of settlements. The third quarter of 2011 started with an incident in TARGET2, which also affected the performance of the ESTA and the securities settlement system.

In the payment and settlement systems of Eesti Pank the changes that stemmed from the adoption of the euro, notably the closure of the EP RTGS and its replacement with TARGET2-Eesti, and the reduction of the reserve requirement, meant there was a danger of operational risks being aggravated. Some banks have come very close to failing to fulfil the reserve requirement, but luckily these situations have been solved. In addition, there have been occurrences where some banks have not started their ESTA day on time, as their funds have been insufficient for them to make a collateral transfer to the ESTA or the transfer has been delayed. To prevent the problems caused by an insufficiency of funds, banks have now resorted to preventative measures. These operational problems have so far never turned into a long-term liquidity risk.

The banks' reserve requirement diminished following the accession to the euro area and as a result, the funds of the banks in Eesti Pank decreased. This has significantly curbed the liquidity buffer for the settlement of payments in the payment and settlement systems of Eesti Pank, but it has not entailed any liquidity issues.

[1] See Appendix *Oversight of payment and settlement systems*.

Figure 3. Average daily number of payments in TARGET2-Eesti, I hy 2011

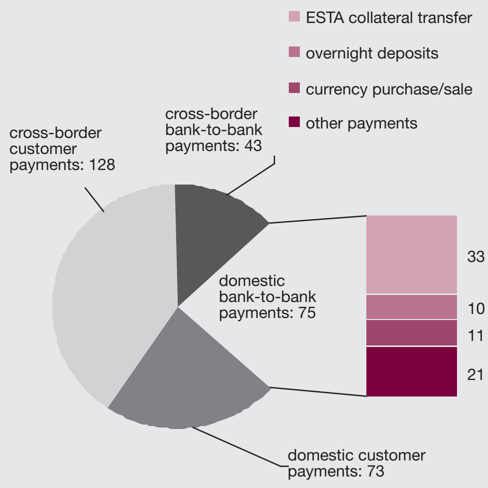
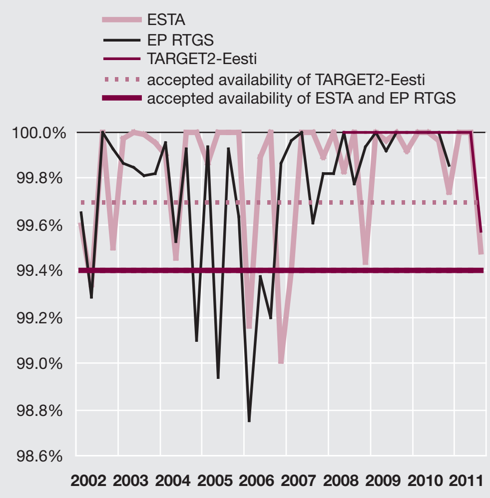


Figure 4. Availability of interbank payment and settlement systems



In the first and second quarters of 2011, the ESTA and TARGET2-Eesti operated flawlessly, which means that their **availability** was 100% (see Figure 4).

Because of the Easter Monday holiday of TARGET2 on 25 April 2011, it was not possible to settle domestic or cross-border interbank euro payments in Estonia, as the trans-European settlement system TARGET2, its component system TARGET2-Eesti and the Settlement System of Ordinary Payments ESTA were closed.[2] This, however, did not affect the availability of the ESTA, as it was not a settlement day for the systems.

A greater failure in the payment and settlement systems of Eesti Pank occurred in the third quarter of 2011, when the operation of the single technical platform of TARGET2 was interrupted for 2 hours and 58 minutes at the beginning of the business day on 25 July due to a software error. This meant it was not possible to settle payments in TARGET2 at the beginning of the day and for the first time in the history of TARGET2 a contingency module was employed.

Due to the failure in TARGET2, it was also impossible to perform collateral transfers to the ESTA and start the settlement of domestic interbank payments in the ESTA. The operation of the ESTA was interrupted for 3 hours and 20 minutes.

The Estonian Central Securities Depository (ECSD) introduced a new securities settlement system called Depend at the time of the changeover to the euro. Both changeovers were successful.

Just like the ESTA, the securities settlement system was closed due to the holiday of TARGET2 on Easter Monday on 25 April 2011; therefore, no domestic or cross-border securities transactions were performed on that date, either free of payment or delivery-versus-payment.

The failure of TARGET2 that occurred on 25 July 2011 also affected the securities settlement system, because account operators were unable to make payments through TARGET2-Eesti to their liquidity accounts in the securities settlement system. This entailed a 2.5-hour delay in the delivery-versus-payment settlements of securities transactions between account operators.

On 30 June the agreement[3] between the ECSD and the Finnish Central Depository managed by Euroclear Finland was terminated due to the significantly lower-than-expected usage of the link.

According to the **oversight assessment**, the ESTA and the securities settlement system operated by the ECSD are important for Estonia. Therefore, the system operators must review the emergency procedures and improve the operation rules of the system. This would help to avoid situations stemming from the holidays of TARGET2 or failures of the single technical platform of TARGET2, where it is not possible to perform domestic interbank payments or securities transactions in Estonia on a local working day or where long-term delays would occur in the performance of payments owing to failures in TARGET2.

[2] The holiday of TARGET2 did not affect the performance of intrabank payments.

[3] The agreement between depositories enabled a free of payment transfer of Estonian securities listed on the Tallinn Stock Exchange from an account opened in the Estonian Central Securities Depository to an account in the Finnish Central Depository and a free of payment return transfer from an account in the Finnish Central Depository to an account opened in the Estonian Central Securities Depository.

Oversight of payment and settlement systems

Background information

The efficiency of the financial system depends on the smooth functioning of various payment and settlement systems, since all monetary transactions are conducted through one or several payment and settlement systems. To ensure the smoothness of the financial system, it is necessary to keep various payment and settlement systems in line with the country's legal framework and to avoid disruptions that could have a negative effect on the country's financial system.

The essence of payment and settlement systems

Settlement systems mean infrastructure and the related legal framework that enables the settlement of mutual cash and financial instruments related claims and obligations. Payment and settlement systems include both settlement systems aimed at settling mutual claims and obligations between the participants of the system (hereinafter *settlement systems*), and various instruments used for initiating payments (hereinafter *payment instruments*). The purpose and necessity of different settlement systems have been discussed in detail in Annex 1.

In Estonia, settlement systems include:

Settlement systems of payments:

- settlement systems of intrabank payments, operated by the respective credit and payment institutions;
- settlement system of interbank payments, operated by Eesti Pank, consisting of different settlement systems, including the TARGET2-Eesti component system and ESTA;
- settlement system of card payments, operated by Nets Estonia AS;
- the interbank direct debit system, operated by AS Itella.

Settlement systems of financial instruments:

- settlement system of securities, operated by the Estonian Central Securities Depository (ECSD).

Payment instruments denote the methods of initiating payments, such as payment orders initiated through the Internet banking and other means.

Role of Eesti Pank

Pursuant to the internationally acknowledged standards, the Treaty on the Functioning of the European Union, the Eesti Pank Act, the Credit Institutions Act, and the Eesti Pank Governor's decrees enacted based on these legal acts, Eesti Pank fulfils three key roles in the field of settlement systems:

1. **operator of settlement systems** – Eesti Pank is the owner and service provider of the interbank payment and settlement systems it manages;
2. **regulator of settlement systems** – Eesti Pank enforces legal acts concerning the settlement systems of interbank payments;
3. **overseer of settlement systems** – Eesti Pank assesses and guides the operation and development of settlement systems.

These functions are mainly fulfilled by the Eesti Pank's Payment and Settlement Systems Department which also **participates in the development of financial sector infrastructures and in the design and implementation of financial sector infrastruc-**

tures policies and regulation (see Annex 2 for details). Eesti Pank facilitates and coordinates the development of settlement systems, above all, through the Estonian Council of Payment System Experts and the TARGET2-Securities Estonian National User Group. Where necessary, Eesti Pank cooperates and exchanges information with the Ministry of Finance and the Financial Supervision Authority on the basis of the cooperation agreement entered into in 2007[1].

The payment and settlements systems managed by Eesti Pank are operated by the Operations and Back-office Division of the Payment and Settlement Systems Department. Oversight is the responsibility of the Policy and Oversight Division of the Payment and Settlement Systems Department. Independence of the oversight of settlement systems is ensured and the conflict of interests within the Payment and Settlement Systems Department is minimised pursuant to the procedure and rules provided in the internal documentation of Eesti Pank. According to these rules and procedures, the Policy and Oversight Division is directly responsible to the Executive Board of Eesti Pank, independently of the role and interests of the Payment and Settlement Systems Department as the operator of payment and settlement systems. The Legal Department provides the legislation on payment and settlement systems, with the required support provided by the Payment and Settlement Systems Department.

In fulfilling the role as the overseer, Eesti Pank is also governed by the oversight framework of settlement systems.

1 http://www.eestipank.ee/pub/en/yldine/pank/stabiilsus/lepe_1207.html

Oversight framework of settlement systems

Purpose of oversight

According to international standards and best practices, central banks have to guarantee that the settlement systems operated by them fully comply with international standards and to oversee important settlement systems operated by the private sector. The central banks are also responsible for oversight of various payment instruments. The aim of oversight is to ensure effective, smooth and sustainable functioning of settlement systems.

For the central bank, the smooth functioning of its settlement systems is essential for implementing effective monetary policy, ensuring the stability of the economic and financial system and arranging for the smooth operation of currency circulation. The oversight of settlement systems is thus one of the key functions of a central bank, since the smooth and sustainable functioning of the systems is directly related to meeting the main objectives of the central bank. In turn, the achievement of these main objectives ensures price stability through the reliability of the monetary system and public confidence of the currency.

A central bank has several tasks as the overseer of settlement systems. Eesti Pank

- differentiates between the systemically important and important settlement systems on the settlement systems market (see classification in Annex 3);
- establishes the international standards applicable to settlement systems operating in Estonia and assesses compliance with these standards;
- establishes or approves the principles and rules of settlement systems;

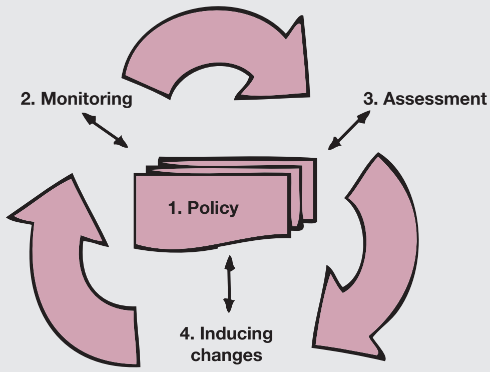
- identifies potential risks in and to the settlement systems (see Annex 4 for details);
- participates in the facilitation of the development of settlement systems and in the design and implementation of the policy and legal framework in accordance with the oversight principles, independent of Eesti Pank's role as the operator in consideration of the market needs;
- participates in the oversight of international settlement systems as a member of the European System of Central Banks. For this purpose, a memorandum of understanding has been concluded between the European Union central banks and banking supervisors in 2001, as amended in 2004[2].

Process of oversight

Oversight of settlement systems means that the central bank monitors the existing systems as well as the systems under development, and assesses their compliance with the international and central bank requirements. Where necessary, the central bank gives recommendations for enhancing the efficiency and security of the systems.

Oversight of settlement systems is an ongoing process where, at first, the relevant principles or policy is formulated (see Figure 5). The central bank monitors and assesses the market and systems on the basis of these principles and employs various instruments or measures to intervene in the functioning of the systems. Then the process begins anew, the difference lying in the refining of the relevant policy if needed at the beginning of the process cycle, based on market needs and the country's general economic development.

Figure 5. Process of settlement systems oversight



Eesti Pank conducts oversight of all important and systemically important payment and securities settlement systems. This means that the systems must comply with the central bank's policy objectives[3] and expectations with regard to settlement systems, as well as international requirements. Important settlement systems include the TARGET2-Eesti component system and ESTA, operated by Eesti Pank, and the securities settlement system operated by the ECSD.

Monitoring of settlement systems

In order to fulfil its role, the overseer must have sufficient information on the performance of financial sector infrastructures on the market, and the interdependencies

[2] http://www.ecb.int/press/pr/date/2001/html/pr010402.en.html, http://www.ecb.int/press/pr/date/2004/html/pr040721.en.html

[3] Operating reliable and well-functioning payment systems.

between the systems. Key sources of information include system rules, the principles for ensuring business continuity, regular reports or ad hoc reports and extraordinary meetings, self-assessments of system operators, meetings of the system operator and participants, evaluations of legal experts and/or auditors, information provided by other central banks or supervisory authorities. A summary of the monitoring of settlement systems is published by the Eesti Pank, mainly in the Financial Stability Review.

Assessment of settlement systems

Information collected through monitoring of settlement systems is used for two purposes. Firstly, the central bank provides a general assessment of the performance of the financial sector infrastructures and for the establishment of the oversight framework, including for determination of the appropriate requirements. Secondly, the central bank assesses the systems that are subject to assessment under the oversight framework.

All important settlement systems must be assessed in a timely and relevant manner. This means that the central bank conducts a comprehensive assessment of these systems once every five years. In the meantime, an assessment is conducted of the changes planned in the system. Where the principles of oversight are changed (e.g. new minimum requirements are established for the system upon amendment of international standards[4]), a new comprehensive assessment is carried out upon enforcement of the new requirements.

[4] E.g. in 2012, the Bank for International Settlements and the International Organization of Securities Commission will establish new principles for financial market infrastructures. These principles are currently in development. See http://www.bis.org/publ/cpss94.htm.

Inducing changes: initiating the development of settlement systems

The result of the monitoring and assessment of settlement systems can either be positive, i.e. the system complies with the requirements, or (partially) negative, i.e. the system does not (partially) comply with the requirements. If the system does not comply with the requirements, the overseer will give the system operator recommendations for improving the system. The overseer's recommendations exert moral suasion, for instance by establishing conditions for the system operator. If the system operator is not fulfilling the requirements established by the overseer, the system will not be used or accepted for certain transactions or in certain cases. Eesti Pank informs the public of the non-compliance in its assessment reports.

As mentioned above, assessments of Eesti Pank are stemming from international standards and best practices (see Annex 5). The Core Principles for Systemically Important Payment Systems of the Bank for International Settlements (BIS) are used as the minimum requirements (standards) for payment settlement systems. The Recommendations for SSSs[5] of BIS and the International Organization of Securities Commissions (IOSCO) are used in case of securities settlement systems.

In the oversight of TARGET2-Eesti, Eesti Pank applies, in addition to the oversight framework of settlement systems, the Guide on the Implementation of the Eurosystem's TARGET2 Oversight Function. The European System of Central Banks, including the Eurosystem and the non-Eurosystem central banks connected

[5] Eesti Pank has assessed the system operated by the ECSD based on Eurosystem requirements, which are stricter than the BIS/IOSCO recommendations.

to TARGET2, are responsible for the oversight of TARGET2 as a whole. The European Central Bank plays the lead role in the oversight of the TARGET2 Single Shared Platform. As the TARGET2 component systems are legally and operationally decentralised, the main responsibility for the oversight of the TARGET2-Eesti component system lies with Eesti Pank.

The central bank focuses on the following aspects in the oversight of settlement systems:

- operational structure of the settlement system (technical solution and reliability of the system);
- legal framework for the settlement system (legislation, regulations and system rules);
- acknowledgement of risks (risks to the system and system participants);
- risk management (measuring and management of risk, minimising of excessive risk);
- business continuity;
- efficiency of the settlement system;
- system access;
- governance of the settlement system.

Annex 1. Purpose and essence of different settlement systems

Although there are several settlement systems of different types in Estonia, they all serve the common purpose of enabling the system participants to settle or mediate settlement of mutual claims and obligations.

Settlement systems are required for several reasons. Firstly, settlement systems allow safe and timely settlement of monetary obligations between participants of the system. For private persons, a payment settlement system is important for receiving wages, benefits etc. and paying bills. Businesses use settlement systems for buying and selling goods. The state needs settlement systems for collecting taxes and paying out benefits.

Secondly, the settlement system of interbank payments provides bank customers greater freedom in choosing a commercial bank as their main service providing bank. In initiating payments, customers need not worry about which commercial bank holds the beneficiary's account. The customer can thus pay more attention to factors such as the availability of suitable services, commission fees or quality of services.

Thirdly, the settlement system of card payments allows retailers who are customers of one bank to accept card payments of customers whose cards have been issued by another commercial bank.

Fourthly, settlement systems form the basis for the effective functioning of financial markets. The claims and obligations arising from securities transactions as well as monetary claims and obligations deriving from the purchase and sale of securities are settled through the respective settlement system.

Annex 2. Facilitating the development of settlement systems[6] and participating in the designing and implementation of policies and legal framework

The central bank's role in facilitating the development of settlement systems and designing the policies and legal framework depends mainly on the central bank's policy as the operator of settlement systems, as well as the level of development of the country and its financial sector. As the operator of settlement systems, Eesti Pank serves as the owner and operator of interbank settlement systems, TARGET2-Eesti and ESTA. The central bank develops these systems and designs the related policies.

In addition, Eesti Pank as a member of the Eurosystem participates in the designing of the policies and functions related to the centralised infrastructures of the financial sector – the cash settlement system TARGET2, the securities settlement platform TARGET2-Securities and the collateral management infrastructure. The development of the Estonian financial sector and its infrastructures over the last two decades has been inevitable, considering the history of our country and the changing environment[7], and is natural part of the development of a state. Eesti Pank has facilitated this progress in cooperation with commercial banks and the public sector.

Eesti Pank as the facilitator of the development of financial sector infrastructures:

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[6] The terms *facilitator* and *catalyst* are used internationally.

[7] Including globalisation, integration, euro area initiatives and establishment of the Single Euro Payments Area (SEPA).

1. has developed smoothly and safely functioning interbank payment settlement systems in accordance with the internationally acknowledged standards and the Estonian market needs, and continues to operate and develop these systems;
2. monitors the development of payment and securities market infrastructures in Estonia, publishing the related reviews in its publications;
3. governs the work of the Estonian Council of Payment System Experts, its sub-units, and the TARGET2-Securities Estonian National User Group;
4. participates in the European Payments Council (EPC) Estonian Committee and, if necessary, other working groups related to the activities of the central bank and headed by the Estonian Banking Association;
5. develops the legal framework for payment services and securities market infrastructures in cooperation with the public sector and market participants;
6. participates in the Eurosystem and other international committees and working groups related to financial infrastructure policy and development, considering the needs of Estonia.

Annex 3. Classification of settlement systems by importance

In Estonia, a settlement system is considered an important settlement system, if it is the only one of its kind in Estonia and/or if it settles positions between members received from other settlement systems.

An important settlement system is considered a systemically important settlement system – a system important for the sustainability of the Estonian financial system – if the average daily turnover of the important settlement system in the last six monthly makes up more than 10% of the total average daily turnover of important settlement systems in the last six months.

Annex 4. Settlement system risks

In Estonia, as well as in any other modern society, the entire financial system is based on settlement systems. Therefore, it is essential to ensure the smooth functioning of settlement systems so as to maintain a stable and smooth financial system of a country. This means, first of all, management and minimising of various risks. Identification, measuring, monitoring and management of risks help to prevent transfer of risks to domestic and international financial markets, which can lead to major financial crises.

Due to the domino effect (also called a systemic risk), the default of one system participant or a technical malfunctioning can cause liquidity or credit problems to other participants of the settlement system. Although the likelihood of a systemic risk is small, it can lead to a major financial crisis.

Risks related to settlement systems of payments:

- Systemic risk or the risk that temporary or constant liquidity problems of one participant of the system could lead to similar problems for some other participant of the system. In other words, the systemic risk concerns the potential chain reaction triggered by the liquidity or credit risk that can lead to an economic and financial crisis in the entire country or a group of countries. Thus, the systemic risk can arise in the emergence of other risks.

- Credit risk or the risk that a participant of the system will be unable to fully meet its financial obligations within the system either when due or at any time in the future.
- Liquidity risk or the risk that a participant of the system will have insufficient funds to meet financial obligations within the system when expected, although it may be able to do so at some time in the future. In other words, this is a situation when a system participant experiences a temporary shortage of settlement assets.
- Operational risk or the risk that the smooth functioning of the settlement system will be disrupted by software or hardware failure, human error or malicious activity, which will cause unforeseeable financial obligations to participants of the system. The realisation of the operational risk could, in turn, lead to the realisation of credit or liquidity risks.
- Legal risk or the risk that weak legal framework or unexpected interpretation of legislation will cause unforeseeable financial losses to the operator or participants of the settlement system. Realisation of the legal risk could, in turn, lead to the realisation of credit or liquidity risks.
- Security risk or the risk that fraud or misuse of the system will harm the functioning of the system.
- Risks related to settlement systems of securities:
- All the above-listed risks of settlement systems;
- Custody risk or the risk that the custodian does not keep separate books for its own securities and the securities of its customers. In other words, it is the risk that the custodian would carry out transactions with the securities of its customer without the latter's knowledge.

Annex 5. Main international standards and best practices

Central bank oversight of payment and settlement systems, 2005 (Committee on Payment and Settlement Systems (CPSS), Bank for International Settlements (BIS))

1. Standards on payment settlement systems

1.1. Global standards

1.1.1. Report of the Committee on Interbank Netting Schemes of the central banks of the Group of Ten countries (Lamfalussy Report), 1990 (BIS)

1.1.2. Core Principles for Systemically Important Payment Systems, 2001 (CPSS, BIS)

1.1.3. Policy issues for central banks in retail payments, 2003 (CPSS, BIS)

1.1.4. General guidance for national payment system development, 2006 (CPSS, BIS)

1.1.5. General principles for international remittance services, 2007 (CPSS, BIS)

1.2. EU and EMU standards

1.2.1. Eurosystem oversight policy framework, 2011 (ECB)

1.2.2. Oversight Standards for Euro retail payment systems, 2003 (ECB)

1.2.3. Business continuity oversight expectations for systemically important payment systems, 2006 (ECB)

1.2.4. Guide for the assessment against the business continuity oversight expectations for systemically important payment systems, 2007 (ECB)

1.2.5. Guide on the implementation of the Eurosystem's TARGET2 oversight function, 2008, (ECB)

1.2.6. Policy statement on euro payment and settlement systems located outside the euro area, 1998 (ECB)
1.2.7. The Eurosystem policy principles on the location and operation of infrastructures settling euro-denominated payment transactions, 2007 (ECB)
1.2.8. The Eurosystem policy principles on the location and operation of infrastructures settling euro-denominated payment transactions; specification of „legally and operationally located in the euro area", 2008 (ECB)

2. Standards on payment instruments

2.1. EU and EMU standards
2.1.1. Harmonised oversight approach and oversight standards for payment instruments, 2009 (ECB)
2.1.2. Report on electronic Money, 1998 (ECB)
2.1.3. Electronic Money systems security objectives, 2003 (ECB)
2.1.4. Oversight framework for card payment schemes – Standards, 2008 (ECB)
2.1.5. Oversight framework for card payment schemes – Standards, 2008 (ECB)
2.1.6. Oversight framework for credit transfer schemes, 2010 (ECB)

3. Standards on securities settlement systems

3.1 Global standards
3.1.1. Recommendations for securities settlement systems, 2001 (BIS, IOSCO)
3.1.2. Recommendations for Central Counterparties, 2004 (BIS, IOSCO)
3.2. EU and EMU standards
3.2.1. Recommendations for securities clearing and settlement systems in the European Union, 2009 (ESCB, CESR)
3.2.2. Standards for the use of EU Securities Settlement Systems in ESCB credit operations, 1998 (European Monetary Institute)
3.2.3. The Eurosystem's policy line with regard to consolidation in central counterparty clearing, 2001 (ECB)
3.2.4. Eurosystem statement on central counterparties and interoperability, terms of reference, 2008 (ECB)
3.2.5. Central counterparty clearing (CCP) for OTC credit derivatives, Decision taken by Governing Council, 2008 (ECB)