

FINANCIAL STABILITY REPORT

2009

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ABBREVIATIONS

CAR – capital adequacy ratio
CEBS – Committee for European Banking Supervisors
CPI – consumer price index
CSB – Central Statistical Bureau of Latvia
EBRD – European Bank for Reconstruction and Development
EC – European Commission
ECB – European Central Bank
ECOFIN – Economic and Financial Affairs Council
ESFS – European System of Financial Supervisors
EKS – electronic clearing system of the Bank of Latvia
ESRB – European Systemic Risk Board
EU – European Union
EU15 countries – EU countries before 1 May 2004
EU27 – current EU countries (historical data are calculated consistently with the current EU membership)
Eurostat – Statistical Bureau of the European Union
FCMC – Financial and Capital Market Commission
FSA – Financial Services Authority (UK)
FRS – US Federal Reserve System
G20 – group of major developed and developing countries
GAP – repricing gap or difference between RSA and RSL
GDP – gross domestic product
HICP – Harmonised Index of Consumer Prices
IMF – International Monetary Fund
JSC – joint stock company
LCD – Latvian Central Depository
lr – liquidity ratio
Ltd. – limited liability company
MFI – monetary financial institution
NBFS – non-bank financial sector
ROA – return on assets
ROE – return on equity
RSA – interest rate sensitive assets
RSL – interest rate sensitive liabilities
RWA – risk weighted assets
SAMS – interbank automated payment system of the Bank of Latvia
S & P – Standard & Poor's
Treasury – Treasury of the Republic of Latvia
UK – United Kingdom
US – United States of America
VaR – the maximum expected losses over a certain period of time and with a given probability (Value-at-Risk)
VAT – value added tax
VNS – securities settlement system of the Bank of Latvia

Data on the subsidiaries of foreign banks registered in the Republic of Latvia have been disregarded for the purposes of calculating ROE, CAR and tier 1 CAR, open foreign exchange positions, the liquidity ratio set by the FCMC; nor have they been used for liquidity and credit risk stress tests or bank sensitivity analysis with regard to currency and interest rate risks.

Sources: the CSB, the FCMC, LURSOFT (Database of the Republic of Latvia Register of Enterprises), the Latvian Central Depository, Reuters, Latio Ltd., Ober Haus Real Estate Latvia Ltd., Arco Real Estate Ltd., the ECB, Eurostat, the State Unified Computerised Land Register, the State Land Service, NASDAQ OMX Riga, the Treasury and the Bank of Latvia.

Charts have been compiled on the basis of data provided by the ECB (Chart 1), Reuters (Chart 2), the State Unified Computerised Land Register (Chart 1.1), the State Land Service, Latio Ltd., Ober Haus Real Estate Latvia Ltd., Arco Real Estate Ltd. (Chart 1.2), the CSB (Charts 1.3, 1.4, 4.1 and 4.8–50), Latio Ltd. (Charts 1.4, 1.6, 1.7 and 4.1), MG Media Ltd. (Charts 1.5–1.7), the Bank of Latvia (Charts 1.6, 1.7, 3, 4, 4.1, 5–10, 16, 17, 19, 21, 7.1a–7.4, 26–29, 42, 51–66 and 68), NASDAQ OMX Riga (Chart 4.1), the FCMC (Charts 4.1, 11, 20–23, 30–32, 41 and Table 1), the ECB (Chart 18), Eurostat (Chart 18), and the Latvian Central Depository (Charts 67 and 69), bank lending surveys conducted by the Bank of Latvia (Charts 6.1a–6.5), and estimates prepared by the Bank of Latvia, also based on the FCMC data (Charts 24, 25, 33–38, 40–48 and Table 2).

Figures featured in the charts are rounded values.

The respective indicator of the previous year is provided in braces.

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EXECUTIVE SUMMARY

In 2009, the banking sector weathered the shock caused by a considerable rise in credit risk, absorbing record-high losses as well as increasing the capital adequacy level to an all-time-high. A number of indicators speak about the beginning of economic recovery, and this is why systemic risks to financial stability have lessened.

2009 was year when global economy started to emerge from the broad-based crisis. Overall, in 2009 Latvia's economy posted the most pronounced contraction among the EU countries despite the reviving activity in the external sector in the second half of the year, the measures taken by domestic economic agents towards restoring competitiveness and the signs of an improving economic confidence.

With Latvia's economy immersed in a recession, the creditworthiness of banks' borrowers deteriorated significantly, leading to a rapid growth of loan delinquency.

The cost optimisation undertaken by the Latvian businesses in 2009 in general was not able to make up for the considerable decline in turnover that resulted in a dramatic fall of corporate profitability and deterioration of solvency. The heavy debt burden, low profitability and the tight financing standards applied by banks were a serious constraint for non-financial corporations regarding the prospects for debt refinancing and conditions.

Along with the gradual recovery of the economy, in 2010 several banks anticipate the demand from non-financial corporations for loans to increase somewhat. However, one can still expect a further weakening of financial indicators in the sectors with the heaviest debt burden, namely, real estate business, hospitality and catering as well as trade and construction, while manufacturing is projected to improve owing to a revival of external demand and the measures taken by corporations towards enhancing their competitive capacity.

With the steep rise of unemployment rates and a decline in wages and salaries and other income sources, the financial vulnerability of households deepened notably. In a nearby future, the paying capacity of the borrowers who have restructured their loans in earlier periods could comprise a serious risk with a potentially negative impact on the quality of the banks' loan portfolio.

The risks related to general economic sector-specific outlook, together with persistently deteriorating household paying capacity and change in the value of collateral demanded continue to be the main restraints why banks do not loosen the tight lending standards.

In response to the deteriorating quality of the loan portfolio, banks were compelled to build sizeable provisions for non-performing loans, thereby suffering record-high losses. In the second half of the year, the rise of credit risk was contained by a marked deceleration in the growth of loans past due over 90 days. However, considering that the riskiest loans (past due over 180 days) continue to grow, enhancing the management strategies *vis-à-vis* loans in work-out process (including the property taken over) is going to be a key challenge for banks in 2010.

One can anticipate the quality of bank loan portfolio to deteriorate further also in 2010, nevertheless it will happen at a much slower pace than in the previous year.

In the second half of 2009, positive changes in the dynamics of deposits, driven by progressively steadying domestic and global financial markets, adoption of the Law "On State Budget 2010" in due time. As to the global interbank market, though confidence tensions eased and the associated liquidity situation improved, the reservedness towards emerging markets in general and Latvia in particular still persisted. Therefore, the access to market funding will continue to be limited. In 2010, the success of liquidity risk management in Latvian banks will largely depend on the achieved stability of deposit base.

The crisis lessons demonstrate the crucial role of fiscal policy in supporting economic recovery and stabilising the financial system. Adoption of the Law "On State Budget 2011" that is structural reform-oriented will ease the risk perceptions of financial market participants and instigate higher foreign investors' interest.

Positive shifts in investors' and lenders' approach to the national economy and the financial sector will be the key factor determining the progress of reforms and the regaining of the economic competitiveness.

1. BANKING MACROFINANCIAL ENVIRONMENT

1.1 External Economic and Financial Environment

The pessimism and uncertainty, related to the economic recovery outlook, prevailing on the global financial markets in early 2009, were replaced by an increase in the economic activity in the second half of the year as the economic environment improved gradually. As a result of the positive effects of the measures taken by governments towards stimulating the economic growth and expansionary monetary policy pursued by the central banks, signs of economic stabilisation and recovery could be observed in several Latvian export trade partners.

A fall in global financial markets in 2008 as well as bankruptcies of several influential financial institutions caused concern regarding the financial status of other market players. Availability of funding became a really complicated issue not only for non-financial corporations and households but also for governments of several emerging economies. With the situation in the economy and financial markets aggravating, exposure to financial stability risks increased and risk aversion of the global financial market participants grew notably.

The first signs of crisis bottoming out could be observed in the second quarter of 2009: the GDP rate of decrease moderated and the activity on the financial markets increased. In many countries, the economic growth resumed in the second half of the year as the cross-border trade and capital flows recovered. Nevertheless, lending, that to households and small companies in particular, still remained limited. In the developed countries, the outlook for the economic growth in 2010 is subdued (2.1%)¹. Due to fiscal stimuli, the amount of government debt will expand considerably. The emerging economies, however, could expect more pronounced growth (6.0%)² on account of stable domestic consumption and fiscal and monetary stimuli. Overall, according to IMF analysts' forecasts, global GDP is expected to grow by 3.9%³ in 2010.

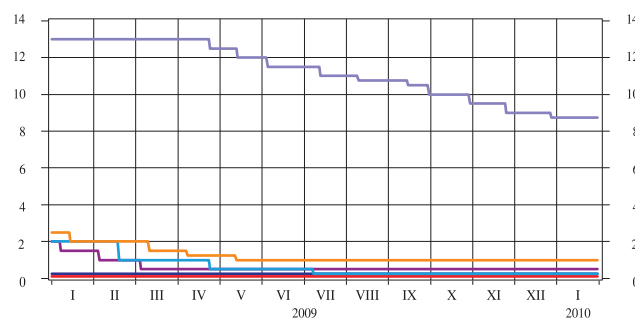
With the external and domestic demand contracting, the overall inflation was low in 2009. In the future, the rise in inflation will be contained by market participants' low inflationary expectations. Companies have not yet fully resumed the capacity utilisation they had before the drop in demand, thus enabling output growth without notable price increases.

Already by the beginning of 2009 the major central banks of the world had used all opportunities of lowering policy rates when the FRS target range for the federal funds rate stood at 0–0.25%, the key ECB interest rate, Bank of England bank rate and Bank of Japan policy rate reached 1%, 0.5% and 0.1% respectively (see Chart 1).

Chart 1

BASE RATES OF MAJOR WORLD CENTRAL BANKS (%)

— FRS
— ECB
— Bank of England
— Bank of Japan
— Sveriges Riksbank
— Central Bank of the Russian Federation



The quantitative monetary instruments of the world's major central banks played a more significant role. Already in the first quarter of 2009, the FRS created an essential turnaround in the financial market by expanding the amounts of asset purchase programmes implemented by it and allocating up to 300 billion US dollars for the purchases of long-term Treasury securities; up to 1.25 trillion US dollars for Fannie Mae and Freddie Mac mortgage-backed securities; and up to 200 billion US dollars for the purchases of government-sponsored agency debt. On 5 March, the Bank of England also announced launching an asset purchase programme with an initial amount of 75 billion British pounds sterling which was increased to 200 billion British pounds sterling over the year. The Bank of Japan also undertook similar programmes. The ECB in its turn launched a programme under which it intended to purchase euro-denominated covered bonds in the amount of 60 billion euro; later, at the beginning of the third quarter and up to the end of the year the initial amount remained unchanged. The central banks made efforts to ensure access for the financial market

¹ IMF, World Economic Outlook (data updated in January 2010).

² IMF, World Economic Outlook (data updated in January 2010).

³ IMF, World Economic Outlook (data updated in January 2010).

participants to funding required by them. With the economic situation improving, the ECB and FRS announced gradual phasing out of the non-standard monetary instruments at the end of the year.

In 2009, governments continued to provide assistance to large financial institutions as their bankruptcy could have had a detrimental effect on investor confidence in the financial sector. At the beginning of January, the Irish government took over Anglo Irish Bank. The UK government increased its stake in Royal Bank of Scotland. In June, the German government took over one of the major lenders in the country (Hypo Real Estate). In the Netherlands, DSB Bank was acknowledged bankrupt, although its bankruptcy is not directly related to the impact of the financial crisis. In order to support withdrawal of the risky financial assets from the market, the German government passed the Bad Bank Act which enabled financial institutions to exchange the bad assets for debt securities, guaranteed by a financial market stabilisation fund, established by the government (Finanzmarktstabilisierungsfonds), in a special purpose vehicle/asset management company. To support withdrawal of low value/subprime mortgage loans from bank assets, the Irish government, in its turn, established the National Asset Management Agency for managing bad assets.

Although the fiscal stimuli of the largest countries promoted economic activity in the second half of the year, they resulted in an increase in the budget deficits of the developed countries of up to 10% of GDP on average. According to the forecasts, by 2014 the public debt ratio to GDP for the developed countries of the G20 group could reach as high as 115% of GDP⁴.

In the first half of 2009, the US economic growth declined on account of a drop in both domestic and external demand. Businesses cut their investment and stock levels. The housing market saw stabilisation of the fall in levels of trade and construction activity. In the second half of the year, fiscal and monetary stimuli for expanding domestic consumption, as well as stock building promoted recovery of economic activity. In the fourth quarter, the rate of increase in the number of the unemployed moderated whereas the overall annual unemployment rate rose from 7.7% to 10.0%. According to IMF analysts' forecasts, GDP is likely to increase by 2.7% in the US in 2010, with the unemployment rate remaining high⁵.

In the UK, GDP continued on a gradual downward trend in 2009, partly on account of slower private consumption growth due to narrowing employment, falling real estate value and tight lending standards. As of 1 January 2010, the VAT rate was raised from 15% to 17.5%, therefore Bank of England expects inflation to remain close to the 2% inflation target in medium term. According to IMF forecasts, GDP growth in the UK will be 1.3% and 2.7% in 2010 and 2011 respectively⁶.

Oil price rises and economic stimulus measures implemented by the government reduced the economic downslide in Russia in the second half of 2009. Nevertheless, in 2009 Russia saw the most pronounced GDP fall (7.9%) since 1994. After the transmission of the impact of the depreciation of the Russian rouble subsided, inflationary pressures continued to ease, and for the first time in the second half of 2009 inflation rate was zero for three consecutive months (in August, September and October)⁷. IMF experts forecast moderate recovery of the economic growth in Russia in 2010, with GDP increasing by 3.6%⁸. It largely reflects the base effect and changes in inventory cycle. The relatively high oil prices notwithstanding, the domestic demand is expected to remain weak due to tighter bank lending policies. In 2009, the Central Bank of the Russian Federation (Bank of Russia) lowered its policy rate on several occasions (overall from 13% to 8.75%).

Following a GDP downslide observed for several months, economic activity resumed in the euro area in the second half of 2009. Inventory cycle and export recovery as well as the launched macroeconomic stimuli and measures taken for resuming the functioning of the financial system contributed positively to the economic growth. Nevertheless, the unemployment rate reached 9.8% in October (a euro area high since December 1998). After a five-month period of negative inflation, HICP turned positive in November and December (0.5% and 0.9% respectively). This rise reflects the upward base effects, mostly caused by a drop in global energy prices in 2008. According to the ECB staff macroeconomic projections of March 2010, HICP annual inflation may amount to 0.8%–1.6%⁹ in 2010 while the annual real GDP growth is likely to range between 0.4% and 1.2% in 2010 and between 0.5% and 2.5%¹⁰ in 2011.

⁴ IMF, Global Financial Stability Report, September 2009.

⁵ IMF, World Economic Outlook (data updated in January 2010).

⁶ IMF, World Economic Outlook (data updated in January 2010).

⁷ Минэкономразвития России, *Об итогах социально-экономического развития Российской Федерации в 2009 году*, p. 26.

⁸ IMF, World Economic Outlook (data updated in January 2010).

⁹ ECB Monthly Bulletin, March 2010, p. 80.

¹⁰ ECB Monthly Bulletin, March 2010, p. 80.

The shrinking international trade had a particularly unfavourable impact on the export-oriented economy of Germany. Although the government took measures stimulating economic growth, inter alia tax cuts, in 2009 GDP posted a fall of 5%, the sharpest drop since World War II in Germany. Employment indicators also reflected contraction of economic activity. In November 2009, the unemployment rate reached 7.6%. At the same time, the widely used reduced working time arrangement, particularly so in the industrial sector of Germany, had a negative impact on the dynamics of labour productivity. In view of a breach of the budget deficit limit (3% of GDP) provided for by the EU, the ECOFIN initiated an excessive deficit procedure for Germany on 2 December 2009, stipulating that a budget deficit below 3% of GDP should be reached by 2013. According to Deutsche Bundesbank's experts, Germany's GDP in 2010 and 2011 will grow by 1.6% and 1.2% respectively.

After a prolonged downslide, the economy in Sweden recorded a positive growth rate in the second quarter of 2009, underpinned by tax rate reductions and low interest rates, as well as higher activity in the foreign trade market. In October, industrial production and exports showed positive results. However, with labour demand weakening, the unemployment rate rose from 6.2% in 2008 to 8.5% in 2009¹¹. Sveriges Riksbank experts expect GDP to move up by 2.7% in 2010¹².

In the third quarter of 2009, export growth and private consumption underlay the recovery of Finland's economy from the recession which had started at the end of 2008. Nevertheless, the low economic activity resulted in declining employment rates in several sectors of the economy, the goods-producing sector in particular. In 2009, the unemployment rate reached 8.2% (6.4% in 2008). Industrial output (metalworking and electronic products sectors) shrank considerably. Inflation eased on the backdrop of moderating oil and raw material prices, low interest rates, and a reduction of the VAT rate for food. According to the fiscal sustainability report, published by the EC in October 2009, which assessed the financial sustainability of EU27 countries in 2008–2060, Finland is the only one in the euro area to have been evaluated as a low-risk country¹³. According to Suomen Pankki – Finlands Bank experts, the GDP decline is likely to stop in 2010 (0.0%)¹⁴.

Although signs of economic stabilisation were observed in the second half of 2009, the Baltic States saw the steepest GDP fall of all EU countries in 2009. In Lithuania and Estonia, GDP shrank by 15.0%¹⁵ and 14.1%¹⁶ respectively. The pronounced downslide in Latvia's both neighbouring countries is related to the internal and external imbalances developed over the last few years. In Lithuania, the most pronounced decrease in the economic activity was observed in construction, transportation and manufacturing while in Estonia the most notable decline was recorded in agriculture, mining, and manufacturing. Inflation decreased in both countries, mostly on account of an increase in the unemployment rate and tightening of the lending standards driving down consumption, but Estonia saw a more rapid fall. According to Eurostat, in 2009 annual HICP inflation in Estonia stood at 0.2% (compared to 4.2% in Lithuania). Eesti Pank forecasts Estonia's GDP to grow by 1.4% and 4.7%¹⁷ in 2010 and 2011 respectively while Lietuvos bankas expects GDP to increase by 0.5% and 3.4%¹⁸ in Lithuania in 2010 and 2011 respectively.

Overall, the most important precondition for the recovery of the economic growth in the Baltic States in 2010 is the recovery of external demand. The fiscal consolidation measures implemented in Estonia in 2009 explicitly demonstrate the role of the fiscal policy in the stabilisation of the macroeconomic environment, contributing to the bottoming out of the economic downslide and restoring foreign investor confidence. According to Eesti Pank experts, in 2010 Estonia will be able to attain full compliance with Maastricht criteria (including requirements with respect to the general government budget deficit)¹⁹.

The economic situation in Central and East European countries stabilised in 2009. In the second and third quarters, Hungary and Romania saw a more moderate fall in real GDP. In the Czech Republic, with the economic growth strengthening, real GDP grew positive in the second quarter and continued on its upward

¹¹ Sveriges Riksbank, Monetary Policy Update, December 2009, p. 13.

¹² Sveriges Riksbank, Monetary Policy Update, December 2009, p. 3.

¹³ European Commission, Brussels, 2009. Sustainability Report 2009, European Economy 9/2009.

¹⁴ Suomen Pankki – Finlands Bank, Economic Outlook 2/2009, Forecast tables.

¹⁵ Department of Statistics to the Government of the Republic of Lithuania. Press release 26.02.2010. Gross domestic product second estimate (<http://www.stat.gov.lt/en/news/view?id=8462>).

¹⁶ Statistics Estonia. News release 11 March 2010. Last year the biggest downfall of the GDP was recorded in the 2nd quarter (<http://www.stat.ee/37908>).

¹⁷ Eesti Pank, The Estonian Economy and Monetary Policy, 2/2009.

¹⁸ Lietuvos bankas, Economic outlook for Lithuania in 2010–2011 (<http://www.lb.lt/news/pg.dli?lng=EN&did=2453>).

¹⁹ Eesti Pank, Economic policy statement of Eesti Pank, 3 March 2010 (http://www.eestipank.info/pub/en/press/Press/kommentaariid/Arhiiv/_2010/_242.html).

trend in the third quarter. Due to the strong private consumption growth Poland was the only EU Member State recording positive growth in the first two quarters of 2009 which continued also in the third quarter. In December 2009, annual HICP inflation remained high in Hungary, Poland and Romania (5.4%, 3.8% and 4.7% respectively), while in the Czech Republic it was low (0.5%). In Hungary and Romania, the price rise was driven by an increase in the indirect tax rates, while in Poland food and energy price rises mostly contributed to it. In 2009, the national central banks of the four abovementioned countries conducted expansionary monetary policy, reducing their key rates.

According to IMF analysts' forecasts, GDP is likely to increase by 2% in 2010 in the countries of Central and Eastern Europe against a 4.3% decrease in 2009²⁰.

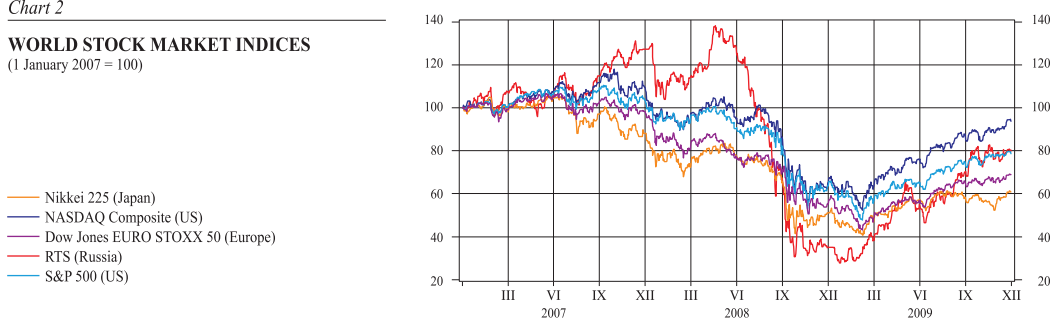
The growing confidence of the global financial market participants in the economic recovery and their risk appetite promoted a rise in risk asset prices. Thus already from the beginning of the year oil and stock prices recorded a gradual pickup. Stabilisation in the global banking sector (banks' efforts to increase their capital and improvement in their profitability) underlay a rise in the major global stock price indices. Deterioration in the quality of loans issued by the banking sector remained one of the risk factors. According to the conclusions published in the IMF Global Financial Stability Report, in 2009 the US banks wrote off their losses at a more rapid rate than European banks, hence they might sooner recover: regain their profitability and lending capacity.

Oil prices surged from 35 US dollar per barrel at the end of 2008 to 78 US dollar per barrel at the end of 2009. Market participants' expectations with respect to the potential oil demand developments in the future was one of the factors affecting oil price dynamics in 2009.

In March, the global stock markets saw a relative bottoming out of the stock price downward trend (see Chart 2). The major global stock price indices managed to regain a substantial share of the losses. Overall, the US stock market index S & P 500 increased by 23.5% in 2009, the most liquid stock index DJIA moved up by 18.8%, and NASDAQ Composite surged by 43.9%. The European stock market index Dow Jones EUROSTOXX 50 rose by 24.2%.

Chart 2

WORLD STOCK MARKET INDICES
(1 January 2007 = 100)



In the first quarter, the US dollar tended to appreciate against the euro; in March, however, following the FRS statement about the purchase of the government long-term securities, the US dollar started to depreciate against the euro. The US dollar depreciation trend continued throughout the year until December, mostly on account of the fact that the positions in traditionally safer currencies decreased as the market participants' risk appetite grew, and low FRS policy rates persisted. At the end of 2009, financial markets were shocked by developments in Greece, demonstrating the topicality of the issue of the sustainability of public finances also in 2010, and not only in Greece but also in other countries and regions. Therefore the US dollar started to appreciate in December. Over the year, the euro slightly appreciated against the US dollar.

Although many factors suggest that optimism of the financial market participants has increased in 2009, their opinion is not unanimous. At the end of 2009, the yield on the US government 10-year bonds rose from 2.1% to 3.8%, and that on the 10-year bonds of the German government moved up from 3.0% to 3.4%. The persistently high demand for government securities in the market was driven by the fact that, for instance, financial institutions freed up additional funding and they were willing to invest it government securities as well.

²⁰ IMF, World Economic Outlook (data updated in January 2010).

Box 1. A new European financial supervisory framework

The global financial crisis revealed essential shortcomings in the supervision of the European and global financial systems, thus questioning its effectiveness. One of the most essential development trends of the single European financial market today is the rapid development of the cross-border operation of its participants. The crisis confirmed the necessity of strengthening the macro-prudential monitoring, transferring from the current geographically fragmented supervision which focuses on assessing risks of individual financial institutions to regulating and supervising the financial sector as a whole. The crisis experience also demonstrated a need to conduct a comprehensive and timely assessment of different sources of systemic risk and their impact on the financial system.

Being aware of the need to strengthen the financial supervisory system, in November 2008 the EC commissioned a group of high-level experts chaired by Jacques de Larosière (the de Larosière Group) to draft recommendations for improving the European financial supervisory system.

In March 2009, the EC and the European Council supported the report of the de Larosière Group and agreed to use the recommendations therein as the basis for proceeding with this issue. In May, the EC published several proposals for reforms, offering a new model of two-pillar supervisory system. In June, the European Council endorsed the EC proposals and ECOFIN opinions, thereby passing a decision on launching the reform.

In compliance with the assignment commissioned by the European Council, the EC developed and in September published a package of draft legislation with a view to eliminate the shortcomings of the financial supervisory system, and with respect to the macro-prudential and micro-prudential supervision establishing the following:

- the European Systemic Risk Board (ESRB) – a new independent institution responsible for the macro-prudential supervision of the EU financial system;
- the European System of Financial Supervisors (ESFS) – a set of supervisory institutions responsible for the micro-prudential supervision of individual financial institutions.

The EC legislation initiatives stipulate that the ESRB mission will be related to the prevention or mitigation of systemic risks, supporting smooth functioning of the internal market, thus ensuring a sustainable contribution of the financial sector to economic growth.

The key tasks of the ESRB are as follows:

- identification and assessment of systemic risks;
- issuance of warnings and recommendations to EU countries for remedial action.

The President of the ECB, the Vice-President of the ECB²¹, Governors of the national central banks of Member States, a Member of the EC, and Chairpersons of the three European Supervisory Authorities of the ESFS will be members of the General Board of the ESRB with voting rights. The members of the General Board without voting rights will be as follows: one high level representative per Member State of the competent national supervisory authorities, and the President of the Economic and Financial Committee.

It is envisaged that the ECB will ensure the Secretariat to the ESRB, thus providing analytical, statistical, administrative and logistical support to the ESRB.

As regards the micro-prudential supervision, it should be noted that currently three committees with only advisory powers are in place in the EU (CEBS, the Committee of European Insurance and Occupational Pensions Supervisors, and the Committee of European Securities Regulators). The new micro-prudential supervisory framework stipulates that the day-to-day supervision functions of the financial sector will remain the task of the national supervisory authorities. ESFS will form the network of these institutions in close cooperation with the three new European Supervisory Authorities (ESAs): the European Banking Authority (EBA), the European Insurance and Occupational Pensions Authority (EIOPA) and the European Securities and Markets Authority (ESMA). The three new Authorities will take over all functions of the above Committees, but the scope of their tasks, functions and powers will be much wider. The key tasks of the ESAs are as follows:

- support for developing high-quality common regulatory and supervisory standards and practice, inter alia developing draft technical standards;

²¹ Only in the event the President of the ECB has been elected the Chair or Vice-Chair of the ESRB.

²² G-20 communiqué (2009); The Turner review (FSA 2009); The de Larosière Group report (2009) etc.

- support for consistent application of EU legislation, creating common supervisory culture;
- dispute settlement between the national supervisory authorities.

It is envisaged that the ESRB and ESFS will launch their operation in 2011.

Box 2. The role of macro-prudential supervision in mitigating systemic risks and procyclicality

The recurrence of financial crises in the world and the increasing crisis resolution costs that are covered by tax-payers urge the economic policy makers to assess carefully what are the right steps taken in regulating the financial system, and what should be improved. In several official reports²² it has been acknowledged that "more regulation" is not always the best solution, although the issue of how practicable it is to apply regulation also to some financial institutions which currently are not subject to regulation has been considered. The main task would be "better regulation" that would incorporate the approach of macro-prudential supervision to a greater extent. Ten years ago only some economists used the concept "macro-prudential supervision". Today this term has become part of the policy makers' vocabulary all over the world.

What is macro-prudential supervision?

The macro-prudential supervision aims at achieving overall financial system stability while the micro-prudential supervision focuses on the stability of each individual financial institution. Could these two views be controversial? The current crisis experience suggests that it could be so. For example, sale of the assets which have lost their value could be regarded as a prudential and sensible reaction of the bank, and the existing regulation also supports such a step. However, if several market participants act like that simultaneously, the price of such assets will fall dramatically, triggering increasingly larger sales of assets. The wave of sales will affect other assets as well, amplifying market volatility and thus causing liquidity to dry up in the markets. In such a way, prudent behaviour of market participants may result in an increase in systemic risk. With the effort to strengthen safety, the behaviour of each bank makes the overall system more unsafe.

The macro-prudential supervision approach is based on the awareness of the fact that the financial system risk is not merely a sum of risks of individual institutions – it also comprises the risks ensuing from the collective behaviour of individual institutions. The above applies not only to the downslide stages of business and lending cycles but also to the upward ones when risks seem to be very low. On the backdrop of the overall economic optimism during the period of price surges for real estate and other assets, market participants tend to underestimate the risks. In such conditions, both the amounts of bank borrowings in the financial markets and lending to economic agents post accelerated growth. In view of the fact that the maturity of the funding attracted by banks is mostly much shorter than that of the granted loans, maturity imbalances of assets and liabilities continue to increase. Thus the whole financial system becomes vulnerable to potential negative changes in the economy and financial markets. Had the macro-prudential supervisory measures improved the shock absorption capacity of the financial system in the pre-crisis years and contained the excessive injections of loans into the economy by market participants, the consequences of the crisis would be considerably smaller.

The incorporation of the macro-prudential supervisory considerations into the regulatory provisions of financial institutions is the task of the Basel Committee on Banking Supervision (the Basel Committee).

In order to prevent recurrence of so severe crises in the future and eliminate the consequences of the crisis, particular attention is paid to the issue of procyclicality when assessing the causes of the global financial crisis, improving the regulation of financial institutions and developing supervision reforms.

Procyclicality is defined as follows:

1. the stimulating effect of the banking regulations and accounting standards in the stage of economic growth, and the limiting effect during the economic downturn. For example, the capital requirement for credit risk exposure, calculated on the basis of ratings (external or internal), decreases during upsurge, enabling the bank to expand lending also without changing its capital base. The International Accounting Standards provide for the valuation of two asset classes at their fair value; hence, as the market price of these assets rises, the revaluation gains are recognised and the capital base increases, providing an additional opportunity to expand bank activities. During a downslide these mechanisms reverse, i.e. the growing

²² G-20 communiqué (2009); The Turner review (FSA 2009); The de Larosière Group report (2009) etc.

capital requirements and the reduced equity as a result of losses considerably dampen bank activity;

2. ability of the financial system to affect economic activity during the entire business cycle, enhancing the economic cyclicality. During favourable economic development, the procyclicality of the financial system strengthens the growth, thus providing easily available funding for the real economy that are intended for different expenses and investment; during the crisis, however, it manifests itself in financial restrictions driving the fall and hampering recovery from the crisis.

Both these phenomena are interlinked and demonstrate that rational behaviour on a micro-level creates undesirable consequences on a macro-level which in their turn have a negative effect on the financial status of each individual financial market participant. The reform of the banking regulation and supervision focuses on the reduction of procyclicality in the first meaning of the term.

Generally the procyclical effect of the Basel II framework is recognised; however, not so long time has passed since its implementation, therefore it is too early to assess its impact on the unwinding and progress of the crisis. Nevertheless, some shortcomings were explicitly revealed during the crisis, therefore improvement of Basel II framework is under way. The procyclical aspect of Basel II framework was discussed during its implementation stage, incorporating elements reducing its potential procyclical effect within Pillar II. However, the counter-cyclical elements turned out to be inadequate, and new proposals are being discussed on an international level at the Basel Committee. The draft Amendments to the Capital Requirements Directive, published by the EC, also stipulate counter-cyclical proposals. They provide for the implementation of the debt leverage ratio in order to reduce the procyclicality of risk-sensitive capital requirements, a requirement to create a capital buffer, and a new approach to making provisions.

Discussions on potential instruments for reducing procyclicality of the financial system had already been held before, mostly focusing on the procedure of accumulating bank provisions. Pursuant to the International Accounting Standards, banks shall accumulate provisions for covering incurred losses. These losses shrink during the stage of the economic upswing and increase during the economic downswing. Accordingly, the level of capital required for complying with the regulatory requirements is lower during the economic growth; it expands during the crisis when it is particularly difficult and expensive to increase it. There are several approaches to building up provisions in order to ensure solution of this issue. The main argument in favour of creating adequate or dynamic provisions for the expected losses is the easing of bank credit standards during an economic upsurge as the assessment of credit risk is optimistic; and considerable tightening of credit standards during an economic downslide. To put it in other words, the wrong decisions causing losses are made during the stage of economic growth. The higher the competition in the banking market, the more pronounced this phenomenon is. Dynamic provisioning actually allows for levelling out the expenditure for provisions in the so-called good and bad times, i.e. for accumulating capital buffers during the period when the actual losses are lower, allowing for the bank to cover losses when they become real.

Spain was one of the first countries to introduce the practice of dynamic provisioning in 2000. In addition to special and general provisions, banks accumulate dynamic provisions on the basis of historical information on loan losses, provided by the credit register. Although such approach to building provisions could not prevent cyclicality, in particular in lending for real estate and construction, nevertheless the buffer accumulated from dynamic provisions promoted the stability of the banking sector. Spain's experience in the dynamic provisioning is studied carefully, and the EC is assessing the usefulness of incorporating a similar provisioning procedure in the Capital Requirements Directive; however, this solution is not the sole remedy for reducing procyclicality. Being aware of the specifics of this instrument, e.g. limited opportunities to apply it for cross-border bank groups, other solutions are also being considered. Since 2007, adjustment of equity capital has been stipulated in Latvia in cases when the prudently estimated provisions for doubtful debts exceed the provisions provided for by the International Accounting Standards.

When reducing the Basel II procyclical effect, it is important to ensure that limiting procyclicality does not cut back on the incentives for improving risk management.

Capital requirements and regulation for building provisions are instruments of micro-prudential supervision for monitoring operation of individual institutions. Its main goal is to ensure safeguarding of interests of depositors and investors. It is essential to supplement micro-prudential supervision with elements of macro-prudential supervision to reduce procyclicality in the second meaning of the term.

1.2 Domestic Financial and Economic Environment

Latvia's economic downslide was the most buoyant among the EU Member States in 2008 and 2009, as risks triggered by unbalanced growth of the previous years materialised. Private consumption and investment contracted notably against the background of limited access to financial resources, while the adjustment of the economy, gradually restoring its competitiveness, continued. The signs of stabilisation were observed at the end of 2009 and gradual return of foreign investors and international lenders' confidence was expected; however, uncertainty surrounded the pace of financial sector recovery in Latvia.

A description of general macroeconomic conditions

In 2009, persistently tense global financial and economic environment contributed adversely to Latvia's economy as well. Real GDP contracted by 18.0% in 2009, with both external demand and exports and domestic demand shrinking and investment and private consumption declining. The contraction of economic activity had a negative effect on the labour market and the average rate of jobseekers reached its historical high in the fourth quarter (19.7%). A lower demand accounted for optimisation of corporate costs, including labour costs. Fiscal situation deteriorated rapidly as tax revenue fell and social expenditure rose. In 2009, the general government consolidated budget deficit amounted to 9.0% of GDP on the accrual basis (in accordance with the methodology of the European System of Accounts 1995). To curb the rapidly expanding budget deficit, fiscal consolidation was implemented in mid-2009 resulting in reduction of both wages and salaries and jobs in public sector. In the economy, wages and salaries shrank on average by 3.9% year-on-year. The accelerated decline in wages and salaries was substantial in the second half of 2009 – in the fourth quarter, wages and salaries dropped by 12.1% quarter-on-quarter. Rising unemployment, decreasing wages and salaries as well as the measures of fiscal consolidation contributed to abating domestic demand and increasing financial vulnerability of households and non-financial corporations. The above developments and falling global energy and food prices accounted for the decline in consumer prices. The average annual inflation of 2009 stood at 3.5%, while annual deflation was recorded in the last three months of the year.

Notwithstanding a notable deterioration of economic indicators in 2009 overall, a number of export-oriented manufacturing sectors started to rebound in the second half of the year, with external demand gradually recovering and non-financial corporations pursuing measures towards restoring competitiveness. Hence exports expanded and Latvia's export market share increased on the markets of several trade partner countries. The difference in the degree of weakening of the domestic and external demand accounted for a rapid improvement of the trade balance. The above development and surplus in the income account accounted for a pronounced improvement in the current account, with the surplus reaching 9.4% of GDP in 2009.

The behaviour of the monetary aggregates mirrored the economic processes and the annual money supply M3 decreased by 2.8% overall. This development was mainly driven by financial market tension and GDP deceleration observed in the first half of 2009, with money supply resuming growth in autumn. The development trends of monetary aggregates were also affected by drying out inflows of financing in Latvia, particularly in the banking sector; however, the funding received by the government from international lenders as well as the EU funds and inflows of foreign direct investment amounting to 5.8% of GDP in the fourth quarter had an upward effect on money in circulation at the same time. Both the supply and demand side factors contributed to the subdued availability of credit funds and loans granted to non-financial corporations and households decreased by 7.3% in 2009 overall.

With a number of signs supporting the economic stabilisation at the end of 2009, an export-based growth of Latvia's economy has also been projected in the second half of 2010. It is expected that growth in manufacturing and exports will be promoted in 2010 by woodworking performing above the level of the previous year already in 2009, and production of metal, chemical products and pharmaceutical preparations, electrical equipment and trailers as well as manufacture of textiles. An increase in external demand for competitive goods and improved access to credit resources, especially current assets, are fundamental preconditions for a positive development of the export-based manufacturing.

Meanwhile, a downslide is expected to continue in construction, all domestic demand-related branches of the services sector as well as transport and communication. Disposable income of households has notably dropped on account of declining wages and salaries and rising unemployment. Against the backdrop of uncertainty surrounding the future development of the economy and personal finances, the procyclical behaviour of the households has further contributed to the fall. Moreover, household expenditure is also

contained on account of the notable debt accumulated in the previous years. A decrease in private consumption and persistently low consumer confidence will have a further effect on expansion of retail trade and imports. Although construction confidence has improved slightly as a result of an inflow of EU funds and low costs, it has remained at a very low level and recovery to the pre-crisis level is not to be expected within a year. The real estate market situation also contributes to the above development – although prices are bottoming out, the limited access to credit resources and a decline in the revenues from private sector will account for a slow recovery of the sector. Prospects for the recovery of transport sector improve as global activity accelerates, albeit competition from the neighbouring countries has hampered the improvement of performance indicators of the above sector.

Box 3. Latvia's real estate market

An inflection point in Latvia's real estate market was reached in 2009: in summer, standard apartment prices in Riga had bottomed out and in autumn even recorded a rise. The prices of new projects also stabilised, and rent became stable at the end of the year.

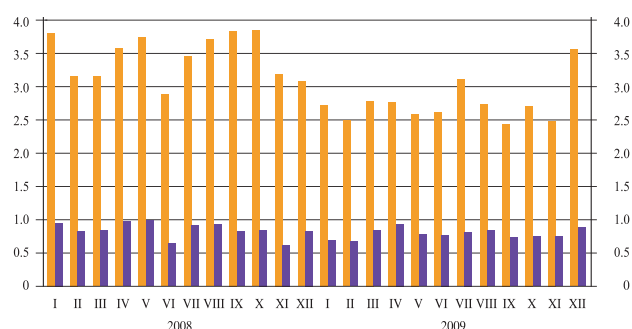
Overall, the activity on the real estate market declined slightly in the country, while remaining relatively unchanged in Riga (about 800 purchase agreements concluded per month). In Latvia, the total number of purchase agreements was by 20.3% lower year-on-year, albeit in Riga only by 7.2% smaller (see Chart 3.1).

Chart 3.1

REAL ESTATE TRANSACTIONS REGISTERED WITH THE LAND REGISTER (in thousands)

(in thousands)

■ In Latvia
■ of which in Riga



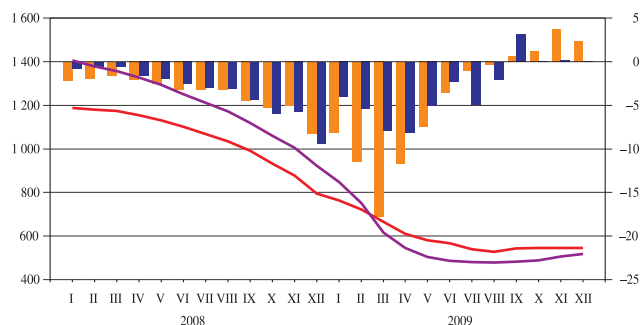
A rapid increase in the number of purchase agreements was reported in December mainly on account of legislative amendments. As of 1 January 2010, a tax on capital gains²³ has to be paid for the sale of a real estate and hence, in order to evade the above tax, the real estate sellers were interested in concluding the transaction by the end of 2009. As of 1 January 2010, housing tax²⁴ has also been introduced and a requirement to certify the respective payment by registering the real estate with the Land Register has been established. The above might delay the transaction registration with the Land Register, resulting in a notable decrease in the number of purchase agreements in January 2010. However, statistics of the following months is likely to reveal the amount of transactions.

The decline in standard apartment prices was buoyant at the beginning of 2009, whereas from April onwards it narrowed and shrank until August by 48.1% in comparison with the end of the previous year, with the lowest average price reaching 479 EUR/m². The average price began to edge up from September onwards, rising by 8.1% by the end of the year and amounting to 518 EUR/m² (see Chart 3.2).

Chart 3.2

STANDARD APARTMENT AVERAGE SELLING PRICE IN RIGA AND ITS MONTHLY RATE OF CHANGE (euro per square meter)

■ Growth rate of the average price by brokers (Arco Real Estate Ltd., Latio Ltd., Ober Haus Real Estate Latvia Ltd.; %, right-hand scale)
■ Growth rate of the average price by the State Land Service (%; right-hand scale)
— Average price by brokers (Arco Real Estate Ltd., Latio Ltd., Ober Haus Real Estate Latvia Ltd.)
— Average price by the State Land Service



²³ "Amendments to the Law 'On the Personal Income Tax' ", 1 December 2009.

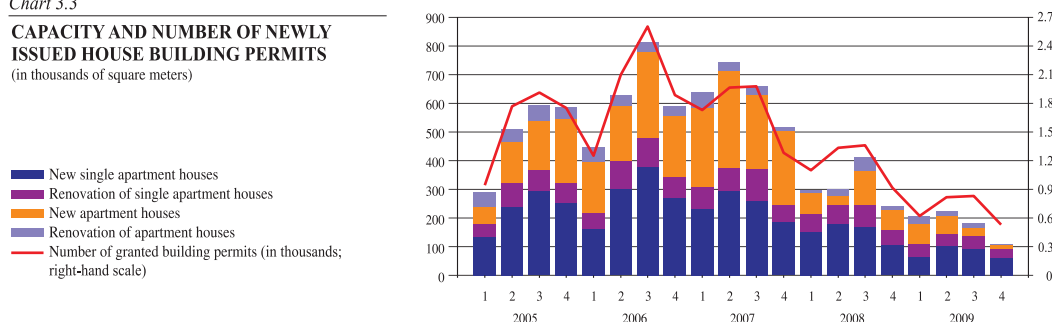
²⁴ "Amendments to the Law 'On Real Estate Tax' ", 1 December 2009.

Despite the fact that prices started to increase, the average price level remained low at the end of the year: 69.7% down the maximum average price level recorded in April 2007. According to the data compiled by Latio Ltd, similar price level was recorded in the second half of 2004. Price rise was mainly attributable to the declining offer of cheap real estate and the fact that the property previously offered for very low prices had already been purchased or withdrawn from sale. Price increase was negligible in the groups of higher prices. The prices of larger two-room and three-room apartments which had recorded a more pronounced decline than the standard apartment average prices during the period of falling prices expanded most. Price stabilisation was observed on the new project market in 2009, and some quality projects even recorded a slight price rise at the end of the year. The offers of new projects with prices below 1 000 EUR/m² were, however, increasingly rare. Statistical data on the apartment prices compiled by the State Land Service point to a similar trend in the intermediation of real estate trading – prices have moved up during the second half of 2009.

For the construction sector and new project developers the year 2009 can be assessed as unfavourable. With excessive supply persisting on the market and tight lending standards established on financial market, the activity in construction was lower than in the previous year. The total number of building permits decreased by 40.7%, while that of permits issued for new buildings declined even faster (by 45.7%). The space planned in the building permits for new private buildings declined more buoyantly than the space planned for apartment houses (by 47.6% and 42.0% respectively; see Chart 3.3). Construction of new buildings at current prices posted a more pronounced decrease than the number of building permits granted, with the construction of apartment houses shrinking by 78.0%. However, the substantial fall is also attributable to a drop in construction costs (10.9%) mainly on account of declining wages and salaries.

Chart 3.3

CAPACITY AND NUMBER OF NEWLY ISSUED HOUSE BUILDING PERMITS
(in thousands of square meters)



Although the decrease in real estate prices continued to foster the household purchasing power in 2008 and the first half of 2009 (see Chart 3.4), the renewed price rises and narrowing net average wages and salaries resulted in weakening purchasing power from August onwards. The purchasing power continued to follow a downward trend by the end of the year and 1.1²⁵ average monthly wages were necessary for buying one square meter of a standard apartment (considerably lower level in comparison with the ratio (4.1) reached in March 2007). A similar purchasing power was observed at the end of 2001. The withdrawal of particularly cheap offers from the market notwithstanding, the contribution from the relatively high purchasing power to the demand for real estate was insignificant, as very tight lending standards still persisted and household concerns about the expected income increased.

Real estate prices are expected to increase further in 2010, however, their growth rate will be minor as neither increase in (household) income nor substantial easing of lending standards is expected. Price stagnation is also possible, with the average price fluctuating around the current level until the economic growth rebounds in the country.

In 2009, an excessive supply persisted on the rental market of housing in Riga creating a further downward pressure on the rent, and consequently the latter declined more buoyantly than in the previous year (see Chart 3.5). In 2009, the average rent for apartments in new projects and that for apartments in the centre of Riga that are in good condition levelled out, while the average rent for standard apartments recorded a slightly steeper fall than that for new projects and apartments in the centre of Riga, and the spread between the rent for apartments in new projects and standard apartments widened in 2009. The rapid decline in the rent for standard apartments may have enhanced a faster stabilisation of rent prices – the average rent

²⁵ The ratio of real estate prices to average wages and salaries is derived by dividing the average price of standard apartments in Riga in euro by the average net wages and salaries of the respective month in Riga in euro.

Chart 3.4

**AVERAGE NET WAGE AND SALARY AND
STANDARD APARTMENT AVERAGE PRICE**

■ Ratio of real estate prices to net wage and salary
— Average net monthly wage and salary in Riga (in thousands of euro; right-hand scale)
— Standard apartment average price per square meter in Riga (in thousands of euro; right-hand scale)

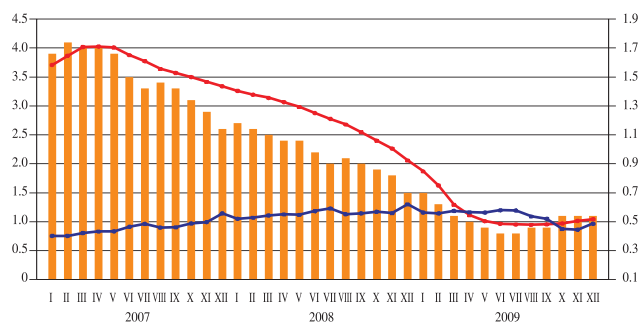
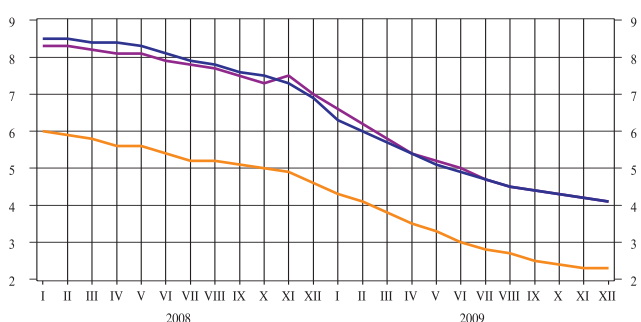


Chart 3.5

**AVERAGE RENT PRICES
(UTILITY COSTS EXCLUDED)**
 (per month; lats per square meter)

— Apartments in the centre of Riga that are in good condition
— Standard apartments
— Apartments in new projects



price for standard apartments remained unchanged in the last two months of 2009. The excessive supply diminished over the year as individuals were actively involved in moving to other rental housing due to the declining rent.

With the average standard apartment prices increasing and housing rent continuing on a downward trend, both the gross rental yield²⁶ and net rental yield²⁷ started to decrease²⁸ (see Charts 3.6 and 3.7), and at the end of the year, the net rental yield almost reached the level of the weighted average interest rate on loans for house purchase. Although it is less lucrative to let real estate for rent, long-term investments may be based on the currently low level of prices due to the fact that, with rent prices resuming rise, the rental yield on apartments may only increase.

**GROSS RENTAL YIELD AND WEIGHTED
AVERAGE INTEREST RATE ON LOANS TO
HOUSEHOLDS FOR HOUSE PURCHASE
IN 2009**

(%)

— Gross yield
— Weighted average interest rate on loans



Following a notable decline in the previous year, the commercial real estate rent started to stabilise in 2009, as the majority of non-financial corporations which were willing and able to afford changing premises had already changed them, thus reducing excessive supply. The supply of office and production premises of lower quality and office and retail premises of inferior location still remains high; however, given the current level of prices, there is no demand for the above premises due to their quality.

²⁶ The gross rental yield curve reflects the income of an apartment owner if the apartment is purchased and let out. Gross yield (per annum) = (average rent per square meter x 12 months) / (average selling price per square meter) x 100.

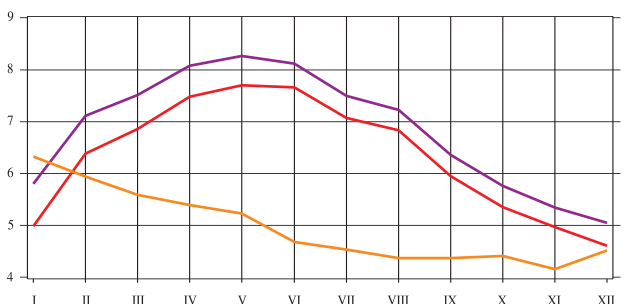
²⁷ Net rental yield indicates the income of an apartment owner if the apartment is purchased, a loan maturing in 25 years is taken and the purchased apartment is let out. Net yield (per annum) = (average rent per square meter x average apartment space x 12 months x loan maturity in years – aggregate interest rate on credit) / (average selling or market price of apartment x loan maturity in years) x 100.

Chart 3.7

NET RENTAL YIELD IN 2009 WITH LOAN MATURITY OF 25 YEARS

(%)

— Loan with uniform payment schedule
 — Loan with decreasing payment schedule
 — Interest rate on loans for house purchase (right-hand scale)



Note: The calculation of yields is based on the average rental price per square meter of standard apartments in Riga housing estates quoted in MG Media Ltd. internet catalogue Rent in Riga; the interest rate is the weighted average interest rate on loans in all currencies to private persons for house purchase.

Monetary policy of the Bank of Latvia and domestic financial market developments

In view of the economic downslide, the Bank of Latvia continued to pursue accommodative monetary policy in 2009. In response to the marked slowdown in economic activity, easing inflation and sluggish lending, the Bank of Latvia lowered the refinancing rate on two occasions in 2009: from 6.0% to 5.0% as of 24 March and from 5.0% to 4.0% as of 24 May. The Bank of Latvia also reduced the overnight deposit facility rate on two occasions: from 3.0% to 2.0% as of 24 January and from 2.0% to 1.0% as of 24 March. The overnight deposit facility rate was lowered with a view to provide additional incentive for banks to channel the ample funds they had accumulated with the Bank of Latvia as excess reserves into the economy. However, the continued resorting to the overnight facility indicated that changes in interest rates have had little effect on banks' behaviour and they still used to prefer safety as opposed to the uncertainty entwining the prospects of the credit market.

The marginal lending facility rate was left unchanged (7.5% in case the respective bank had resorted to the lending facility no more than 5 working days within the previous 30 day period; 15% in case the bank had resorted to the lending facility 6–10 working days within the previous 30 day period; 30% in case the bank had resorted to the lending facility for more than 10 working days within the previous 30 day period).

In 2009, developments in the money market were put in the shade by the declining economic activity and the need to make massive cuts in government expenditure. The main impact was on risk perception. Though this did not lead to any slowdown in the lats money market business, the quoted rates and the rates in the lats money market trades reached the highest points since the previous peaks in April 1996. The lats money market index RIGIBOR, calculated since the end of 1997, on 26 June 2009 hit its all-time high (see Charts 3 and 4).

Chart 3

RIGIBOR (%)

— Overnight
 — 3-month
 — 6-month
 — 1-year

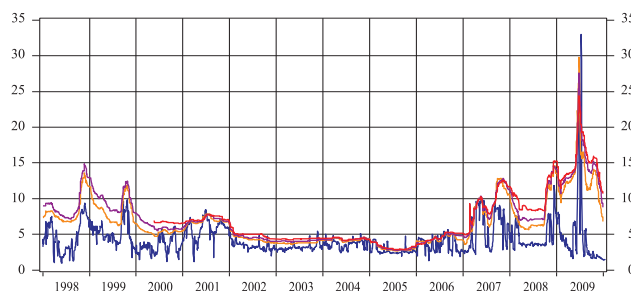
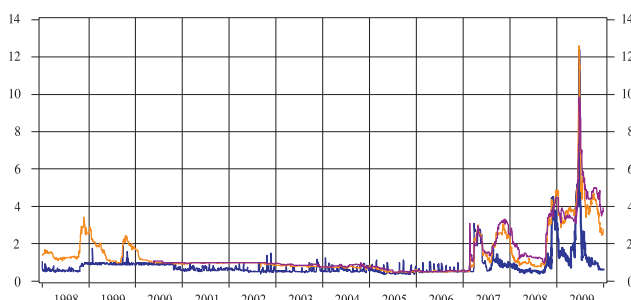


Chart 4

THE SPREAD BETWEEN MONEY MARKET DEPOSIT AND LENDING RATES

(in percentage points)

— Overnight
 — 3-month
 — 1-year



RIGIBOR on overnight loans reached 33.00%, 3-months RIGIBOR – 29.80%, while 12-month RIGIBOR – 24.40%. The overnight rate on individual lats trades even reached 125% in June, whereas that on transactions with a one-month maturity was 110%. Nevertheless, the weighted average rate on business between Latvian banks in lats was considerably lower in June: 21.55% for overnight business and on average 22.30% for all maturities.

The tensions in the lats money market heightened the lats demand in June, and already in the first half of the month banks started buying lats from the Bank of Latvia. As a result, banks' lats liquidity improved notably and shorter term interest rates dropped rapidly, while longer term interest rates subsided gradually. In October, longer term interest rates temporarily increased again, whereas adoption of the Law "On State Budget 2010" fostered a further decline of interest rates on lats.

The average annual 3- and 6-month RIGOBOR was 13.17% and 14.45% respectively, representing a 5.19 percentage point and 5.55 percentage point increase over the previous year, whereas at the end of the year it declined to 6.80% and 8.81% respectively.

At the beginning of 2009 the governing uncertainty concerning the economic situation and the sustainability of the lats exchange rate induced the banks to sell lats to the Bank of Latvia in exchange for euro. Starting from the beginning of the year and ending with the first week of June, as part of interventions, banks sold lats to the Bank of Latvia in exchange for euro at total value of 645 million lats.²⁸ Later on, however, banks purchased lats from the Bank of Latvia, because the amount of lats no longer met the minimum reserve requirements. Due to the constrained lats liquidity and owing to the confirmation obtained from international lenders regarding upcoming loan disbursements following the cuts on the expenditure side of the government budget, tensions and speculations in the foreign exchange market eased and the demand in lats rebounded. The Treasury became a major player in the foreign exchange market, especially in the latter part of the year when budget expenditure typically is higher. This is why it converted euros into lats at the Bank of Latvia and purchased 610 million lats in the remaining part of the year.

Development prospects and challenges to the Latvian economy

In 2009, the critical role of fiscal policy in fostering the economic recovery and steadying the financial sector manifested itself explicitly. Fiscal consolidation may trigger the necessary shift in sentiment, so that the pace of economic growth is above the average of euro area. The observations made during the last months of 2009 evidenced that the exercise of adjusting the public finances has had an important role in stabilising the national economy. This includes the adoption of the Law "On State Budget 2010", which falls within the framework of the agreement with international lenders, because there was less uncertainty in the financial market: interbank interest rates went down and were also mirrored in decreasing lending rates.

In 2010, the investors' and lenders' approach to the Latvian economy will largely depend on the progress of the reforms and the recovery of competitiveness.

The positive developments in exports are not yet capable of providing sufficient stimulus for softening the fall of domestic demand, and year 2010 will continue to witness a downturn, though much slower than in the previous year, with real GDP declining by 2.5%.

Also in 2010, the expected growth of exports and the persistently weak domestic demand will determine the significance of the surplus of goods and services in securing a surplus in the current account. According to the forecasts, deflation is expected to persist in the nearest future and average at 3.6% in 2010, given the low demand and businesses continuing to optimise their costs towards consolidation of their competitive power.

The business surveys, compiled and published by the EC early in 2010 and based on the CSB business survey data, suggest a revival of competitiveness, expectations of an increase in demand and employment that in general will help to push down the unemployment rates. Yet, one cannot expect the unemployment to subside rapidly, because the production processes will be less labour-intensive as a result of the continued improvements of the corporate operational efficiency. Significant improvements in the labour market conditions are anticipated only when economic growth becomes stronger, and in 2010 the unemployment rate will still be above the previous year's average 21.3% and decline somewhat only at the end of the year. Fiscal consolidation should be continued in 2010 in order to further contain the government budget deficit – this is essential for fiscal sustainability and introduction of the euro and is also stipulated in the agreement with international lenders, and therefore a significant decrease in government expenditure is expected.

²⁸ Interventions in the foreign exchange market after the contract date.

JSC *Parex banka* that was taken over by the government at the end of 2008 and also in 2009 continued to operate under the restrictions imposed by the Cabinet of Ministers of the Republic of Latvia and the FCMC that related to providing financial services and meeting liabilities. The stabilisation of the bank operations was carried on actively, thus supporting its return to the market as a full-fledged financial services provider. In 2009, JSC *Parex banka* share capital and subordinated capital were raised by altogether 215 million lats.

The aim of the government is to dispose of its holding in JSC *Parex banka* at the best possible price. Therefore, seeking for strategic investors who would be willing to acquire the state-owned shares and proceed with the stabilisation of JSC *Parex banka* is a key challenge for the future. This aim was partly attained already in 2009 when the EBRD, with its considerable experience in bank restructuring, became a JSC *Parex banka* shareholder with 25% plus one vote. The EBRD involvement in JSC *Parex banka* share capital is a weighty contribution towards boosting the bank's development potential.

In November 2009, the government of Latvia agreed in concept on the inception of JSC *Parex banka* restructuring or splitting up. In January 2010, the international consultant Nomura International plc was contracted for services comprising the preparation and implementation of a restructuring plan for JSC *Parex banka*.

Consequently, despite the measures taken towards restoring the competitive power, the improving business confidence and expected improvements in investors' perception together with better outlooks assigned by rating agencies add to Latvia's growth potential, the uncertainties as to developments in the export markets, credit squeeze and the elevated unemployment rates nevertheless continue to be the main risks to further economic growth and the development of Latvia's financial system.

2. FINANCIAL POSITION OF THE BANKING SECTOR

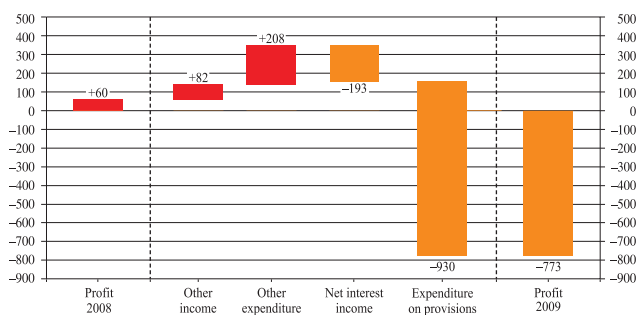
2.1 Profitability

Growing loan delinquency and progressively rising expenditure on provisions resulted in losses for the banking sector.

Banking sector profitability was negative in 2009. Shrinking net interest income and rapidly growing expenditure on provisions (an annual increase of 930 million lats reaching 1 266 million lats at the end of the year) resulted in losses for the banking sector (see Chart 5).

Chart 5

CONTRIBUTION OF CHANGES IN INCOME AND EXPENDITURE ITEMS TO ANNUAL PROFIT/LOSS
(in millions of lats)



The profitability of the banking sector is expected to remain in a negative territory in the nearest future due to the low interest rates, loan delinquency and default and the related increase in the provisions.

In 2009, the operating income of the banking sector amounted to 663.6 million lats, representing a 150.5 million lats or 18.5% decline over 2008. It was also smaller than in 2007, yet higher than in 2006 and 2005 when the ROE peaked. At the end of 2009, ROE was -41.6% (see Charts 6 and 7), whereas ROA stood at -3.5%.

Banks with a negative ROE in 2009 accounted for over 80% of the banking sector assets (see Chart 8).

Net interest income which is the main income source and was also one of the fastest growing items in the profit and loss statements of the previous years retreated almost to the level of 2006 in 2009 (see Chart 9).

Net income from commissions and fees also shrank in 2009, whereas income from trades and revaluation of financial instruments doubled in comparison with 2008 as a result of the losses reported by the banking

Chart 6

ROE DEVELOPMENTS
(%)

— ROE
— ROE (before taxes and expenditure on provisions)

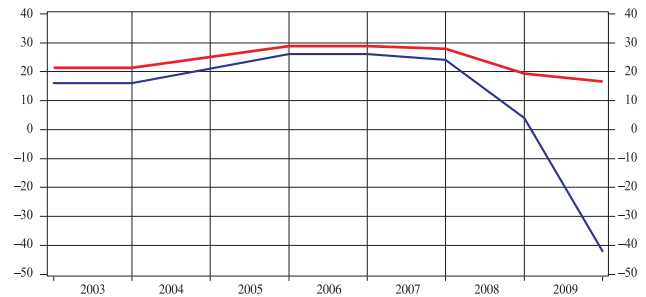


Chart 7

DISPERSION OF BANKS' ROE
(%)

■ Spread between the highest and the lowest value
■ Interquartile range
◆ Median
○ Weighted average
— 90th percentile
— 10th percentile

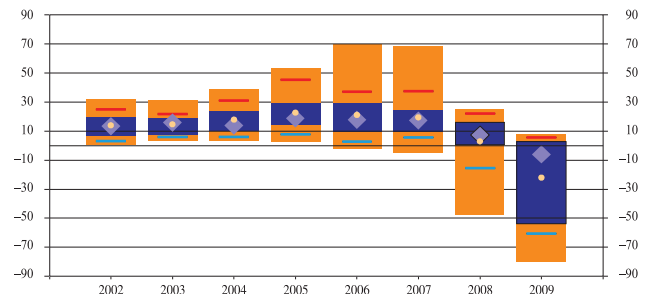


Chart 8

SHARE OF BANKS IN AGGREGATE ASSETS BASED ON THEIR ROE
(%)

■ >10
■ 5-10
■ 0-5
■ <0

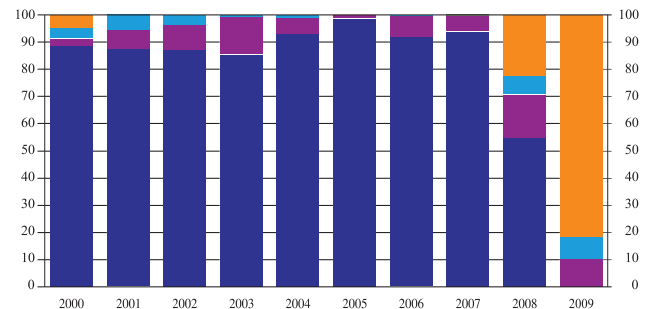
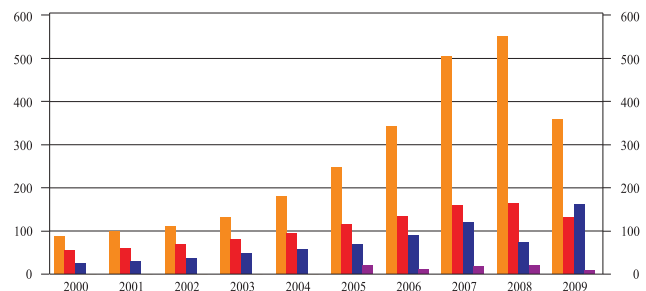


Chart 9

OPERATING PROFIT DEVELOPMENTS
(in millions of lats)

■ Net interest income
■ Net commissions and fees
■ Profit from trade and revaluation of financial instruments
■ Other income



sector in 2008 under the item "Valuation of debt securities and shares" due to the significant fall in the prices of financial assets caused by the global financial crisis.

The banks with the largest loan portfolios and highest expenditure on provisions for doubtful loans and liabilities were the ones to sustain the biggest losses in 2009. Several banks primarily engaged in business with non-residents operated with a profit.

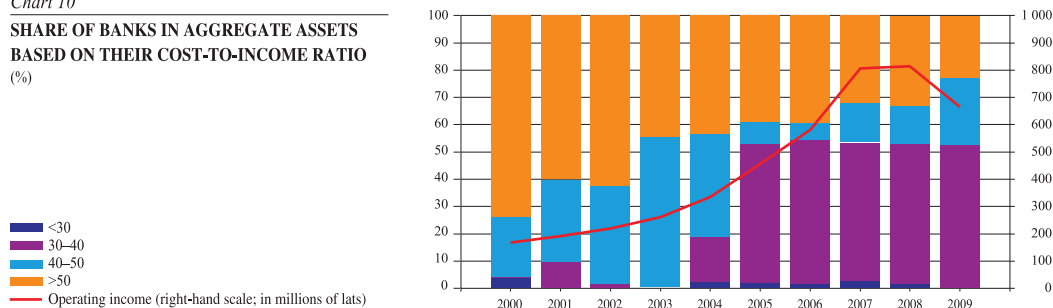
Falling income caused the banks to cut expenditure. Operating costs decreased by 13% year-on-year in 2009. Personnel wages and salaries experienced the most significant fall (an annual decrease of 18%) resulting in a decline of the share of this particular item in operating costs from 43% in 2008 to 40% in 2009. Wages and salaries of councils and boards decreased by 14%, whereas their respective share remained below 3%.

Other expenses (expenses on business trips, postal and communications services etc.) totalled 46% of the operating costs and decreased in the course of the year, albeit not as significantly as the wages and salaries.

The banks' cost efficiency or the cost-to-income ratio improved slightly in 2009: the share of the banks with the ratio above 50% in assets contracted (see Chart 10).

Chart 10

SHARE OF BANKS IN AGGREGATE ASSETS
BASED ON THEIR COST-TO-INCOME RATIO
(%)



Further shrinking of the operating costs is expected also in 2010. It will be supported by both further decline in income and growing importance of remote banking. Banks may continue to lay off staff. Wage and salary developments could also be affected by the Regulations concerning the core principles of remuneration policies adopted by the FCMC in December 2009. They were prepared on the basis of the High-Level Principles for Remuneration Policies of the Committee of European Banking Supervisors and the EC Recommendation on remuneration policies in the financial services sector as well as the provisions of the European Parliament and Council directive.

The banking sector is expected to incur further losses in 2010 as the quality of loan portfolios will continue to deteriorate, although to a significantly smaller extent than in 2009. Banks will have to make additional provisions for doubtful loans, write off the lost loans, and their interest income from lending will be lower.

Box 4. Financial stress index of Latvia's banking sector

During the last decade, international institutions and central banks have paid increasingly more attention to financial stability issues. One of the systemic stability oversight tools, believed to be supplementary to stress tests and early warning systems, is the financial stress (or stability) index (hereinafter referred to as stress index). Similar indices have been developed by several central banks, e.g. the Swiss National Bank, Bank of Canada, De Nederlandsche Bank un Česká národní banka. A significant advantage of the stress index is the opportunity to compare the functioning of the financial system in different periods: you can, for instance, look at the overall stress level of the system during the previous crisis and recession and compare it against the current stress level of the system. The stress index of Latvia's banking sector takes into account information from various sources (market price indicators, balance sheet indicators of banks, macroeconomic indicators), characterising the potential stress symptoms in the banking sector:

- shrinking bank profitability;
- increase of the provisions ratio (an estimate of credit risk growth);
- rapid dry-up of lending (banks become extremely prudent during a crisis);
- dampening of interbank lending (a sign of mistrust in the banking sector);
- rising interest rate index (reflects problems with drawing liquidity from interbank markets);
- resident and non-resident deposit run (characterises the depositors' lack of confidence in the financial sector);
- falling real estate prices (impairs the value of mortgage collateral);
- real GDP drop (signals serious problems in the economy);
- diving stock exchange index (signals significantly higher risk perception regarding the corporate sector on the part of investors).

The more intensive the individual stress symptoms, the higher the value of the stress index. Standard methodology was used when calculating the stress index on the basis of the above variables. The variables comprised in the index were standardised and aggregated using identical weights:

$$I_t = \sum_{i=1}^k \frac{X_{i,t} - \bar{X}_i}{\sigma_i}$$

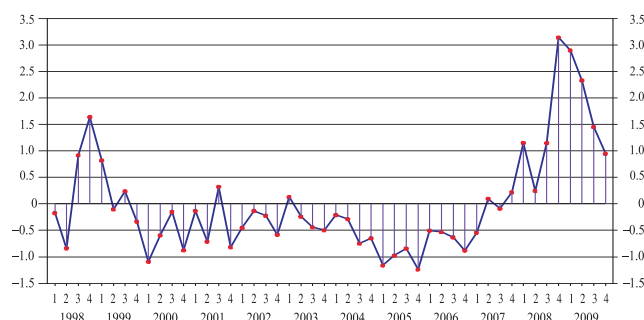
where k is the number of variables included in the index, \bar{X}_i is the mean of the variable X_i and σ_i is the standard deviation of the variable X_i .

Prior to standardisation, all the variables, except ROA, were expressed in logarithms and differenced. The resulting index was also standardised in order to express it in terms of standard deviations from the mean. As part of the data required for computing the index is only available in a quarterly breakdown, the aggregate index was also estimated on a quarterly basis.

Positive index values point to a stress level above the historical mean; therefore, the bigger the deviation of the variables from their historical means, the higher the stress level of the financial system.

Chart 4.1

FINANCIAL STRESS INDEX



Stress index values point to two periods when the stress was significantly higher than the mean: third and fourth quarters of 1998 and the period following the third quarter of 2008. In the second half of 1998, Latvia's banking sector experienced stress under the impact of the Russian financial crisis. Banks sustained significant losses from investment in securities and were adversely affected by the general short-lived economic downturn.

The period from 2004 to 2007 was marked by buoyant growth of the Latvian economy and banking sector, characterised by investment inflows, lending boom and a very low exposure to non-performing loans in the loan portfolios. Therefore, the stress index value was also lower than the long-term mean. Starting from the third quarter of 2008, the first signs of growing stress became apparent mainly as a result of the shrinking economic activity, drying-up lending and an ever accelerating fall in real estate prices. In the second half of the year, the financial stress deepened against the background of the collapse of Lehman Brothers and the subsequent liquidity squeeze and deterioration of the external economic environment. The stress level of the financial sector peaked at the end of 2008 with the take-over of JSC Parex banka and the government turning to international donors for assistance. The end of 2009 index indicates that the stress level has decreased significantly; therefore, the situation can be assumed to normalise: part of the variables characterising the financial sector stress have returned to a level close to their long-term values, yet the high provisions ratio, significant losses of the banking sector and shrinking loans still suggest that the stress level of the financial sector remains high.

Stress index is useful as a measure reflecting the summary evaluation of the condition of the financial system, as various economic and financial market indicators often point to opposite tendencies, while a stress index can summarise the trends of many factors into a single easy-to-interpret and comparable measure of the condition of the financial system.

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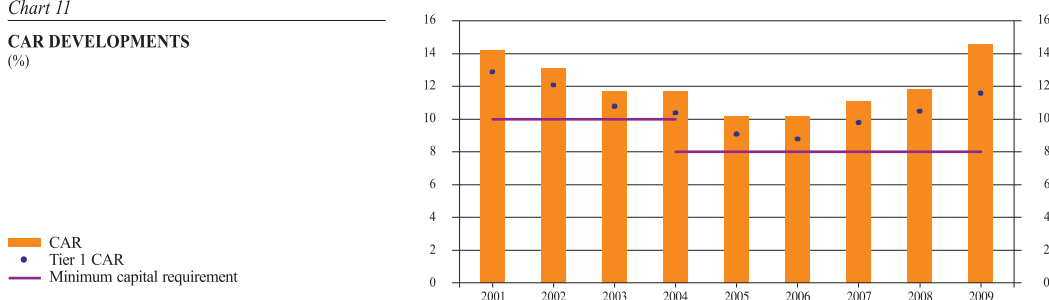
2.2 Capital Adequacy

The CAR of banks reached an all-time high.

Despite the growing provisions and written-off loans, the CAR estimated by banks reached 14.6% at the end of 2009 which is the highest level of the recent years (see Appendix) and is considerably above the statutory minimum capital requirement of 8% (see Chart 11). Tier 1 CAR amounted to 11.4% at the end of the year.

Chart 11

CAR DEVELOPMENTS (%)



The paid-up share capital of banks was increased by 728.3 million lats in 2009, whereas the subordinated capital by 201.4 million lats. The increase in banks' own funds was considerably slower (by 263.2 million lats or 14.7%) absorbing significant losses incurred by the banks in the current financial year (see Table 1).

Table 1

OWN FUNDS OF BANKS, CAPITAL REQUIREMENT AND CAR

	At the end of 2009 (in millions of lats)	Changes in comparison with the previous period (in millions of lats)				
		Year-on-year	Q4	Q3	Q2	Q1
Own funds	2 050.4	263.2	94.7	96.3	141.9	-69.7
Tier 1 capital	1 630.0	46.8	92.4	5.8	-93.2	41.8
incl. Paid-up share capital	1 616.9	728.3	342.1	173.3	175.9	37.0
Audited profit for the current financial year	2.3	-92.1	-0.8	3.1	0.0	-94.4
Profit/loss (-) for the current financial year	-717.4	-606.5	-169.5	-206.7	-282.5	52.5
Tier 2 capital	449.4	206.4	-2.8	56.4	170.4	-17.6
incl. Subordinated capital	443.2	201.4	-2.3	59.4	148.0	-3.6
Summary of capital requirements calculation	1 126.9	-81.6	-23.5	-53.3	-4.0	-0.8
incl. Aggregate capital requirement for credit risk exposure	1 016.6	-63.5	-15.9	-31.7	-15.5	-0.3
Capital requirement for operational risk	91.6	11.3	0.2	-0.2	-1.9	13.2
Changes (in percentage points)						
CAR (%)	14.6	2.7	1.0	1.2	1.0	-0.5
Tier 1 CAR (%)	11.4	1.1	0.9	0.6	-0.1	-0.3

The capital expanded on account of capital injections by shareholders, transferring of the retained earnings of the previous years to capital as well as government support.

RWA decreased by 1 020.1 million lats in comparison with the end of 2008. Although the capital requirements increased for some banks due to impaired asset quality, the aggregate capital requirements of the banks contracted by 81.6 million lats as a result of a rather steep decrease in loans. Credit risk requirement was the one to shrink the most; nevertheless, the change was different for various categories of exposures.

None of the banks had CAR below 9% or tier 1 CAR below 6% at the end of the year.

Box 5. Amendments to laws and regulations to ensure the financial stability and strengthen the supervision process

Changes in the regulatory requirements for financial and capital market participants were introduced in 2009 with a view to ensuring the implementation of directives, the guidelines of the EU institutions and the best international practice as well as to introduce or improve the regulatory framework for certain issues that came to attention during the financial crises.

The most important amendments to laws and regulations introduced in 2009 were as follows:

1. New regulations

The FCMC developed "**Regulations on Core Principles of Remuneration Policies**" (adopted on 21 December 2009; in effect as of 24 December 2009) setting a requirement for the banks to develop and comply with effective remuneration policies that would not facilitate short-term profit making which could have a negative effect on a bank's operating results in the long-term. The regulations lay out the responsibilities of a council and an executive board in developing the institution's remuneration policies and ensuring compliance. They set requirements as to the disclosures concerning the bank's remuneration policies.

In order to improve the lenders' and borrowers' understanding of the general principles for out-of-court enforcement of mortgage contracts, the FCMC adopted "**Principles and Guidelines for Out of Court Consumer Mortgage Workouts**" on 14 August 2009 (in effect as of 21 August 2009) including the general principles for ensuring out-of-court enforcement of mortgage contracts.

2. Improvement of laws and regulations

"**Regulations on Credit Risk Management**" adopted on 28 December 2009 (in effect as of 6 January 2010) contain a requirement to develop and apply the credit risk tolerance determining methodologies and lay out the rights and responsibilities of a bank's council, executive board and employees involved in credit risk management. Requirements for credit risk management strategies and the policies and procedures required for their implementation have been further specified, particularly highlighting the lending policies and procedures, and concentration risk management requirements. "Regulations on Credit Risk Management" request the banks to perform regular stress tests and develop contingency plans for the pessimistic scenario.

"**Regulations on Liquidity Requirements, Compliance Procedures and Liquidity Risk Management**" adopted on 28 December 2009 (in effect as of 1 April 2010) detail out the requirements for liquidity risk management, inter alia introducing requirements for management of funding structure, management of assets eligible as loan collateral as well as a requirement to develop a set of internal indicators for liquidity measurement. Based on three types of stress tests, a bank should determine the size of the required liquidity buffer and maintain adequate liquid assets for the liquidity buffer.

3. Amendments to laws

On 12 February 2009 and 4 June 2009, the Saeima of the Republic of Latvia adopted the Law "**Amendments to the Law 'On Deposit Guarantees'**" providing that the timeframe for the payment of the guaranteed compensation in a case of unavailability of deposits to depositors is reduced from three months to 20 business days. The definition with regard to unavailability of deposits has been further specified as well as the mechanism for involving the government budget to cover the shortage of funds in the deposit guarantee fund required for payments of guaranteed compensations. The amendments set a responsibility for a deposit taker to maintain updated information about all depositors eligible for the guaranteed compensation under this Law, and the payments payable by deposit takers to the Deposit Guarantee Fund are differentiated as of 1 January 2010 based on the risk profile of each specific deposit taker. The Law gives the right to increase the payment of a deposit taker into the Deposit Guarantee Fund for a period of up to one year and no more than twofold in the event there have been payments of guaranteed compensations from the Fund.

The Saeima of the Republic of Latvia adopted the Law "**Amendments to the Law on Consumer Rights Protection**" supplementing the Law with Article 8.1 laying out special rules with regard to mortgage loans. The amendments provide for a consumer's rights to request the lender to change the maturity and currency of the granted loan and for the lender's obligation to examine such requests. The amendments provide that under certain circumstances the lender's rights to request additional collateral for the loan granted to a consumer, claim loan collateral revaluation costs and costs associated with early repayment of the granted loan are limited.

3. BANK CREDIT RISK

3.1 Financial Vulnerability of Bank Customers

Non-financial corporations failed to reduce the overall operating costs sufficiently quickly to keep up with the significant contraction of turnover at the end of 2008 and beginning of 2009. As a result, solvency deteriorated considerably and loans past due increased notably in 2009. The tight lending

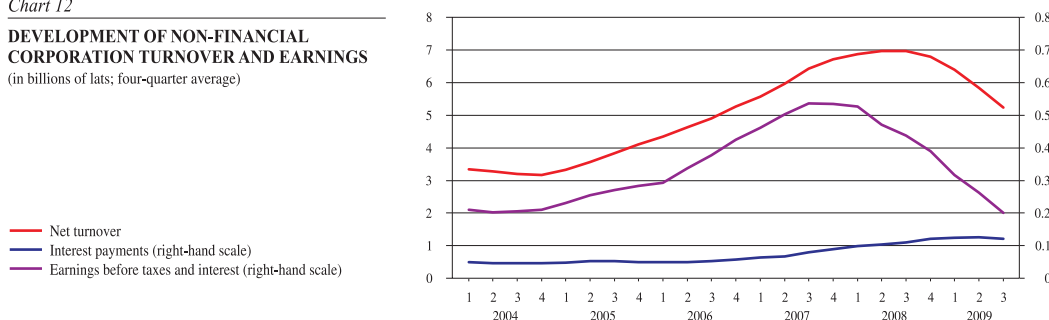
standards applied by banks further impaired the debt refinancing opportunities and their terms available to non-financial corporations. Low profitability, tight lending standards and debt burden will remain the main threat to the vulnerability of non-financial corporations also in the coming months.

Latvia's steep economic downslide was mirrored by the adverse development of the financial indicators of non-financial corporations (see Chart 12). Preliminary quarterly data show that the turnover of the non-financial corporations surveyed in 2009 decreased by 30% in the first nine months of 2009, whereas the profit shrunk more than five times. Turnover contracted in all major economic sectors, and particularly steeply in construction and trade: by 40% and 38% respectively. Plummeting demand sustained a devastating blow on the profit and profitability, with the financial performance of non-financial corporations engaged in real estate business and hotels and restaurants sector being affected particularly badly. Expenditure cutting and cost optimisation efforts of the non-financial corporations as well as the search for new markets enabled to improve the quarterly profitability of the surveyed non-financial corporations in manufacturing sector. Cost optimisation in trade allowed the non-financial corporations to adjust to the level of the domestic demand and return to operating with profit already in the third quarter.

Chart 12

DEVELOPMENT OF NON-FINANCIAL CORPORATION TURNOVER AND EARNINGS

(in billions of lats; four-quarter average)



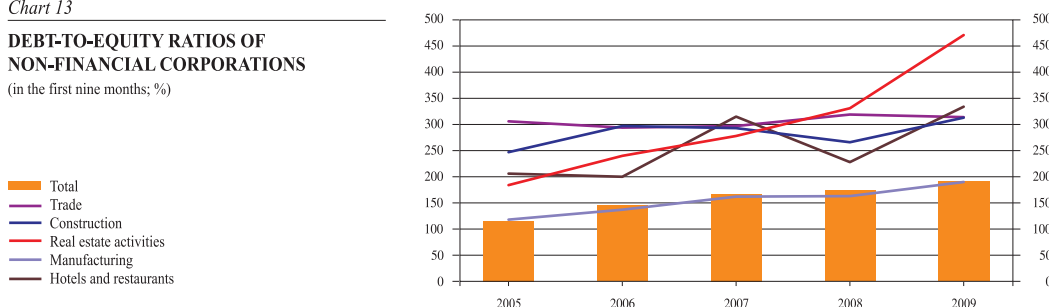
The tight lending standards, debt burden and uncertainty about the further economic development prospects will be the decisive factors determining the insolvency risk of the non-financial corporations in the near future. Amendments to tax laws adopted at the turn of 2009 in relation to the adoption of the "Law on State Budget 2010" will increase the overall tax burden. For instance, amendments to the Law "On Real Estate Tax" raised the tax rate applicable to land and buildings used in business from 1% to 1.5%, and increased the scope of application of this tax to include also engineering and technical constructions. Tax legislation amendments provide for an increase of the annual transport vehicle duty. Amendments to the Law "On Corporate Income Tax" provide for a 1.5 times increase of the part of expenses that are not related to the business activity and losses that have been caused by the maintenance of social infrastructure facilities which may not be excluded for the purposes of determining taxable income.

The low profitability and heavy debt burden explains the deterioration of solvency observed in the non-financial corporations sector in 2009. The low profits and losses limit the deleveraging capacity of the non-financial corporations. At the same time, the debt burden on the surveyed non-financial corporations has reached an all-time-high (see Chart 13). The level of debt has increased on account of both the growing long-term borrowing and debt of the affiliated and associated corporations as well as the shrinking equity. Limited further availability of external financing under such circumstances can aggravate the liquidity and default risks, with the number of insolvency cases and bank losses growing accordingly.

Chart 13

DEBT-TO-EQUITY RATIOS OF NON-FINANCIAL CORPORATIONS

(in the first nine months; %)



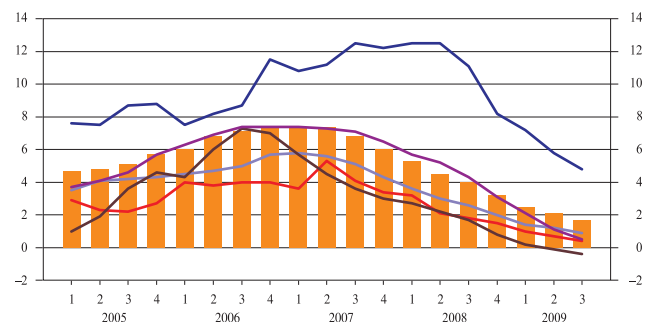
Although the euro interbank market rates have reached an all-time-low, it had only a marginal effect on the interest payments of the surveyed non-financial corporations. The bank losses and growing credit risk were mirrored by the credit terms and conditions offered by the banks: margins increased for both average and riskier loans, and collateral requirements were tightened (see Box 6). The low level of profits of the first nine months of 2009 contrasting with the minor decrease in interest payments has pushed the estimated interest coverage ratio in several sectors (real estate, hotels and restaurants, trade) down to a critically low level (below 1), suggesting that the number of insolvency petitions could continue to grow particularly in those sectors (see Chart 14).

Chart 14

INTEREST COVERAGE RATIOS OF NON-FINANCIAL CORPORATIONS

(times; four-quarter average)

■ Total
■ Trade
■ Construction
■ Real estate activities
■ Manufacturing
■ Hotels and restaurants



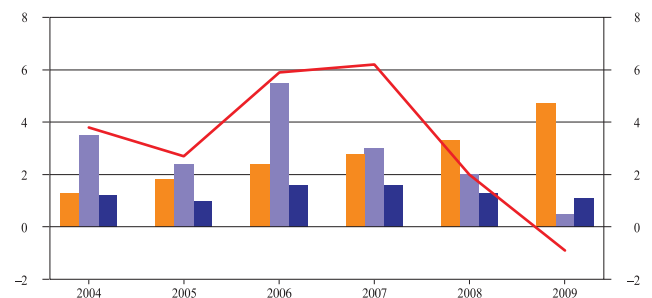
Financial performance of the real estate sector accounting for 35.5% of loans granted to non-financial corporations deteriorated significantly in 2009 (see Chart 15). The operational losses of the non-financial corporations surveyed in this sector continued to grow, which was mirrored also by the shrinking own funds. At the same time, the dependence of the non-financial corporations of this sector on external financing deepened mainly on account of growing long-term loans as a result of debt restructuring and other funding raised.

Chart 15

FINANCIAL PERFORMANCE OF THE REAL ESTATE ACTIVITIES SECTOR

(in the first nine months; times)

■ Debt-to-equity ratio
■ Current ratio
■ Interest coverage ratio
■ Return on assets (%)



The low activity on the real estate market and price adjustments had a downward effect on turnover (a reduction of 18%) resulting in an ever growing default risk in the sector against the backdrop of rising debt liabilities and interest burden. Although these bank loans are collateralised, the significant impairment of the value of the underlying assets poses an additional risk for the banks.

Deteriorating financial performance of non-financial corporations translated into a significant rise in the number of insolvency petitions. According to the statistics published by LURSOFT, 2 580 initiated solvency cases of corporations were registered in 2009, representing a 59% increase over 2008. The information released by LURSOFT suggests that the highest number of insolvency proceedings has been initiated for wholesale and retail companies (30%), and building companies (21%). Weakening of the economic activity continued the downward trend in the number of newly-registered businesses that started in 2008: 9 228 entities were registered with the Commercial Register of the Enterprise Register of the Republic of Latvia in 2009, representing a 19% decline in comparison with 2008.

Although an increase in the number of financially troubled non-financial corporations can be expected, it does not always mean bankruptcy. Global experience shows that bankruptcy means higher losses for both businesses and creditors as well as fewer opportunities to preserve the existing business and the asset value of these corporations. Highly important amendments to the "Insolvency Law" and "Civil Procedure Law" came to effect on 1 July 2009, giving hope for an increase in the number of restructured companies. The

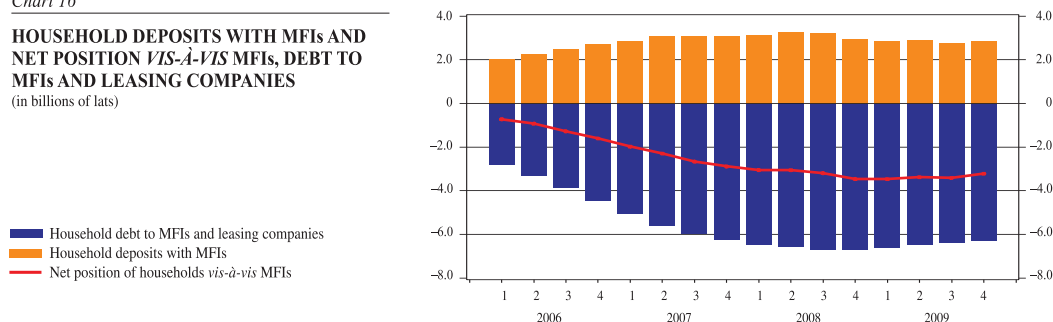
legal protection proceedings, previously acknowledged ineffective in dealing with financial problems, have been improved by both extending the duration of the legal protection as well as reducing the proportion of creditors whose consent is needed for the plan to go ahead. The above amendments to the "Insolvency Law" also introduce entirely new proceedings: out-of-court workout proceedings. The main advantage of these proceedings over the legal protection proceedings is that they are available to all non-financial corporations of Latvia. For the proceedings to start, the consent of creditors whose claims represent over a half of all creditor claims on the non-financial corporation is required, and the creditors elect an administrator themselves. More information about these proceedings can be found in the guidelines on "Out-of-Court Debt Restructuring in Latvia" adopted by the Advisory Council on Insolvency Issues, which are based on the best international practice. Statistics published by LURSOFT also confirm the advantages of the new proceedings: in the second half of the year, out-of-court workout proceedings were initiated already for 55 companies as compared to 28 legal protection proceedings initiated in 2008.

With lending decelerating, household debt and interest payments also continued to shrink, yet due to the soaring unemployment and falling income the financial vulnerability of households deepened further. That was mirrored also by the growth of loans past due. As the bulk of household debt consists of loans for house purchase and the real estate prices have plummeted during the last two years, households failing to cover their liabilities because of falling income find it very difficult to sell their properties on the market for a price that would cover at least the loan balance. Further shrinking of income will remain the main financial vulnerability risk for households also in 2010.

The aggregate household debt²⁹ contracted by 5.8% in nominal terms in 2009, whereas deposits decreased by only 2.4%. That facilitated a slight improvement in the net position of households³⁰ *vis-à-vis* MFIs and leasing companies by 242.7 million lats on an annual basis (see Chart 16). Nevertheless, the steep fall of the GDP resulted in a decline in the ratio of the net position of households to GDP to -24.3% (-21.3% at the end of 2008).

Chart 16

HOUSEHOLD DEPOSITS WITH MFIs AND NET POSITION *VIS-À-VIS* MFIs, DEBT TO MFIs AND LEASING COMPANIES
(in billions of lats)



As a result of the shrinking GDP, the ratio of the aggregate household debt *vis-à-vis* MFIs and leasing companies to GDP increased during the year reaching 47.6% at the end of 2009, which is the highest registered level of the household debt to GDP ever (see Chart 17). EURIBOR and RIGIBOR decreased year-on-year in 2009 and the interest payments of households declined by 25.4%. Such a steep fall of the interest payments, however, was caused not only by the reduction of interest rates, but also by the growing loan delinquency and the resulting increase in interest payments past due. Based on the data on household loans and average interest rates provided by MFIs, the interest payments of households should have been about 15% higher in 2009.

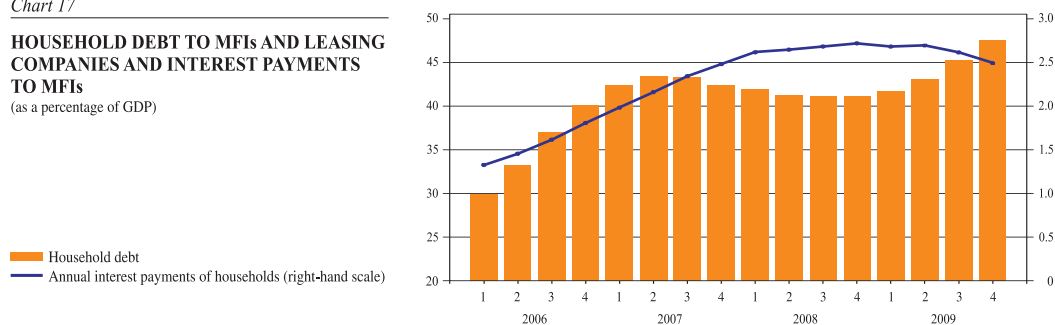
The reported employment income of households started to shrink in the second half of the year, thereby adding to their financial vulnerability: average monthly gross employment income³¹ declined by 11.7% year-on-year at the end of 2009, whereas the net income contracted by 11.3% respectively. The fall of income was steeper in the public sector where the net income decreased by 22.0% (4.6% in the private sector), which can be partly explained by the fact that the private sector mainly uses lay-offs and higher workloads to optimise costs instead of compressing wages.

²⁹ Household aggregated liabilities to banks, credit unions and leasing companies.

³⁰ Household debt to credit institutions and credit unions exceeded deposits.

³¹ Source: CSB. Average monthly gross wage and salary is estimated by dividing the gross or estimated wage and salary fund by the average number of staff in full-time equivalents.

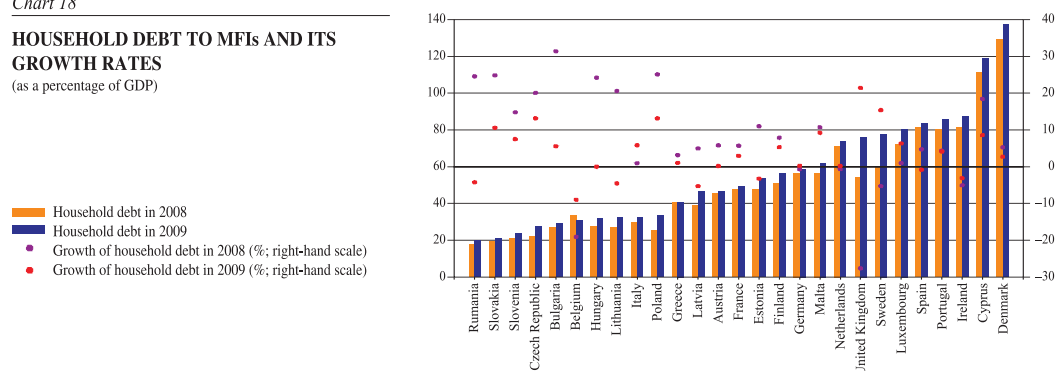
Chart 17

HOUSEHOLD DEBT TO MFIs AND LEASING COMPANIES AND INTEREST PAYMENTS TO MFIs
 (as a percentage of GDP)


Bank loans for house purchase account for more than three fourths of the household debt. At the end of 2009, the number of such loans reached 152.4 thousand, representing a 3.4% year-on-year increase. Assuming that each household with a loan for house purchase has taken one loan on average, 16.9% of households have a loan for house purchase. The average balance of household loans for house purchase decreased slightly to 31.9 thousand lats in 2009, which can be explained by the general reduction of the loan portfolio, i.e. loan repayments by households exceeded the new loans.

Despite the strong growth, the ratio of household debt to GDP in Latvia remained similar to that of the EU Member States like Greece and Austria in 2009. In most EU Member States, including the three Baltic States, the growth of the household debt decelerated in 2009 in comparison with the previous year (see Chart 18).

Chart 18

HOUSEHOLD DEBT TO MFIs AND ITS GROWTH RATES
 (as a percentage of GDP)


Note: For some countries, the projected GDP for 2009 has been used in the debt ratio calculations.

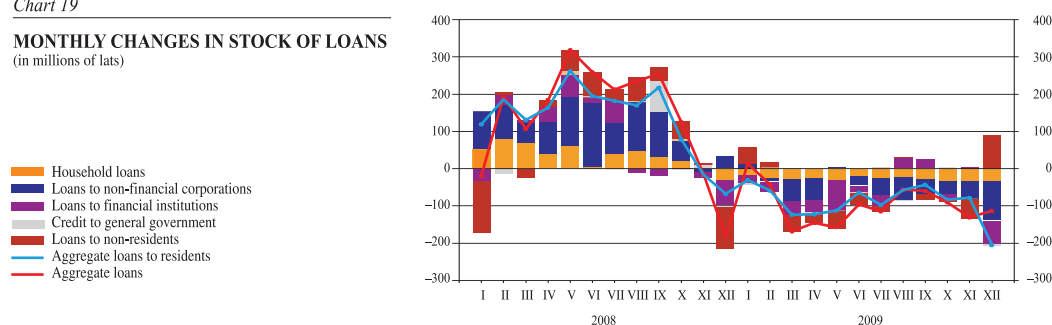
3.2 Banking Sector Loan Portfolio Shifts and Quality

Credit risk increased significantly in 2009, becoming the most significant risk to the financial stability. With the recession deepening, the quality of the banks' loan portfolio deteriorated sharply in the first half of the year. In the second half of the year, the growth of the loans past due over 90 days decelerated considerably, albeit remained significant. In the fourth quarter, loans past due even decreased. The quality of the loan portfolio is expected to deteriorate further in 2010, although significantly less than in 2009. Considering that the share of loans past due over 180 days has become rather substantial (13.1% of the total loan portfolio as at the end of 2009) and that a major part of those loans are already in the recovery process³², foreclosures and implementation of the property rental or sales strategies pose an important challenge to the banking sector in 2010.

In 2009, the stock of bank loans continued the downward trend that started already at the end of 2008. The loan portfolio shrank under the combined impact of the demand and supply factors. In absolute terms, the decline was the steepest for the loan portfolio of non-financial corporations (see Chart 19). When granting loans to non-financial corporations, banks give very careful consideration to their potential in the currently adverse economic environment; therefore, only the most competitive non-financial corporations quickly adjusting to the changing circumstances and developing promising business projects are able to receive funding. Gradual improvement of external demand and rising competitiveness of Latvia's non-financial

³² Loans for which the borrower has failed to make the payments stipulated in the loan agreement and which are being recovered on the basis of an individual loan recovery programme (including, for instance, exercising of a legal lien or calling a guarantee, initiating insolvency proceedings) or by a separate organisational unit or specially assigned staff of the bank (a third party).

Chart 19

MONTHLY CHANGES IN STOCK OF LOANS
(in millions of lats)

corporations will contribute to the development of the export-orientated manufacturing sector in the second half of 2010. That, in turn, could provide an incentive to expand lending to exporters. Nevertheless, overall it can be expected that the balance of loans granted to non-financial corporations will continue to shrink gradually in 2010, as the current corporate loan portfolio is dominated by domestic market-orientated sectors whose financial position is not likely to improve significantly, thereby furthering the decline in the stock of loans.

The decrease in household loans was rather even throughout 2009 and, considering the fall in household income and rising unemployment, this trend is expected to continue in 2010.

Box 6. Bank lending survey

In 2009, the Bank of Latvia continued conducting a survey of bank lending to non-financial corporations and households. The survey results combine information about the 2009 trends in the development of the banking sector lending as well as provide forecasts for the first half of 2010. Nine banks covering over 85% of the aggregate banking sector loan portfolio vis-à-vis non-financial corporations and households participated in the survey. The responses received overall suggest that the shrinking of the loan demand and tightening of credit standards has moderated in the course of the year. Troubled loans were the focus of the banks' attention.

Credit standards and demand

The survey results showed that the period of tightening the credit standards applied to non-financial corporations and households was approaching an end. With most banks indicating that the credit standards remained unchanged in the second half of 2009, the net percentage of banks reporting tightening of credit standards also approached zero (see Charts 6.1a and 6.1b). Some banks further tightened the credit standards for loans to real estate activities, construction and trade. The responses also confirm that the banks have no plans of further tightening their credit standards in the first half of 2010.

Chart 6.1a

CHANGES IN CREDIT STANDARDS FOR NON-FINANCIAL CORPORATIONS
(net percentage of banks reporting tightening of credit standards)

Latest survey results suggest that the underlying factors that previously determined the tightening of credit standards in all banks have diminished. The number of banks reporting that the general economic activity expectations, industry-specific outlook and risk on collateral demanded contributed to tightening of lending standards to non-financial corporations has decreased (see Chart 6.2). Better bank liquidity position is mentioned as a factor contributing to easing the credit terms and conditions for non-financial corporations.

Similarly, the importance of the underlying factors that previously contributed to tightening of credit standards both for loans for house purchase and consumer credit (general economic activity expectations, housing

Chart 6.1b

CHANGES IN CREDIT STANDARDS FOR HOUSEHOLDS
(net percentage of banks reporting tightening of credit standards)

— Actual
— Bank forecast

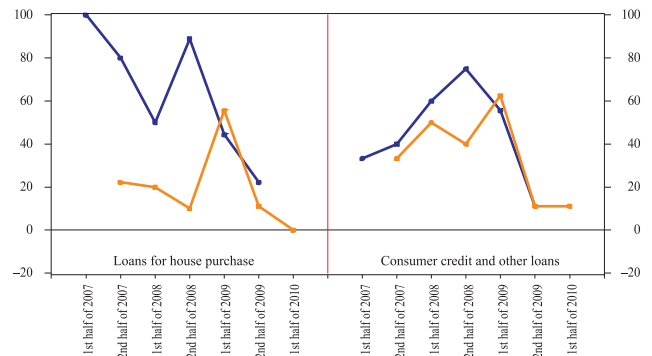
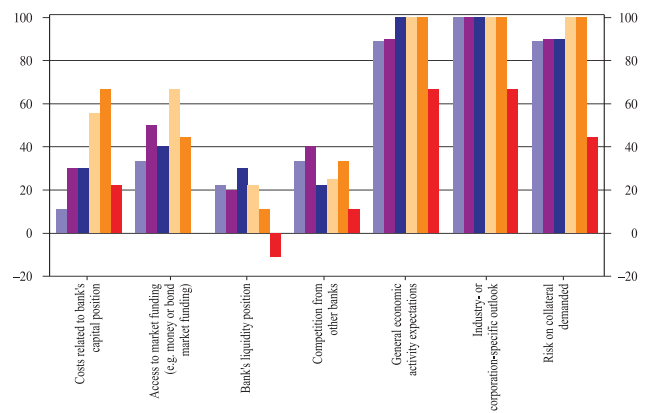


Chart 6.2

IMPACT OF UNDERLYING FACTORS ON TIGHTENING OF CREDIT STANDARDS FOR NON-FINANCIAL CORPORATIONS
(net percentage of banks reporting positive contribution of factors)

■ 1st half of 2007
■ 2nd half of 2007
■ 1st half of 2008
■ 2nd half of 2008
■ 1st half of 2009
■ 2nd half of 2009



market prospects, cost of funds and balance sheet restrictions, and borrowers' creditworthiness; see Charts 6.3a and 6.3b) lessened also for households.

Chart 6.3a

IMPACT OF UNDERLYING FACTORS ON TIGHTENING OF CREDIT STANDARDS FOR HOUSEHOLDS
(net percentage of banks reporting positive contribution of factors with regard to loans for house purchase)

■ 1st half of 2007
■ 2nd half of 2007
■ 1st half of 2008
■ 2nd half of 2008
■ 1st half of 2009
■ 2nd half of 2009

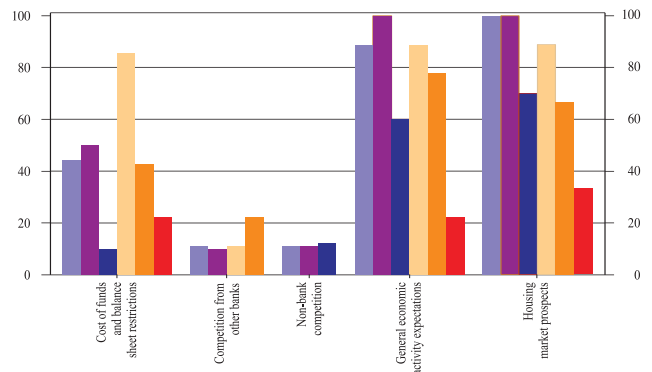
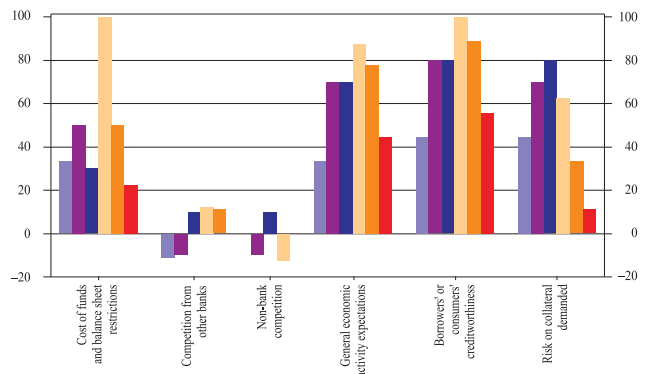


Chart 6.3b

IMPACT OF UNDERLYING FACTORS ON TIGHTENING OF CREDIT STANDARDS FOR HOUSEHOLDS
(net percentage of banks reporting positive contribution of factors with regard to consumer credit and other loans)

■ 1st half of 2007
■ 2nd half of 2007
■ 1st half of 2008
■ 2nd half of 2008
■ 1st half of 2009
■ 2nd half of 2009



Although tighter credit standards were applied less often, the banks offset their operational losses and growing credit risk in 2009 by tightening the terms and conditions of loans, as banks continue to report that they have raised the margins on both riskier loans as well as average loans.

Demand for loans

In the second half of 2009, banks have assessed the loan demand from non-financial corporations and households to be broadly unchanged in contrast to the decline observed in the previous survey rounds, particularly with respect to household loans (see Chart 6.4a and 6.4b). Debt restructuring and shrinking internal financing of non-financial corporations as well as better expectations regarding the housing market prospects on the part of households were mentioned as the reasons for such changing trends in demand. With gradual economic recovery, several banks expect the loan demand of non-financial corporations to increase slightly.

Chart 6.4a

CHANGES IN NON-FINANCIAL CORPORATIONS' DEMAND FOR LOANS OR CREDIT LINES

(net percentage of banks reporting increased demand)

— Actual
— Bank forecast

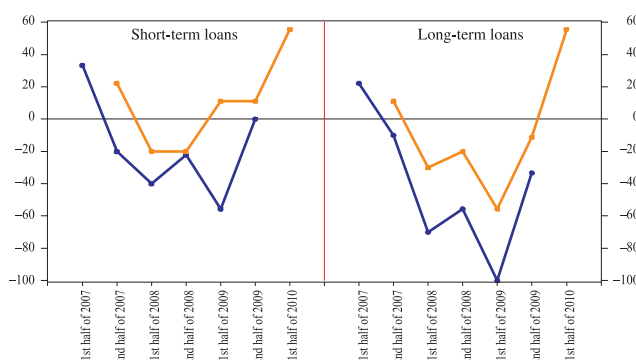
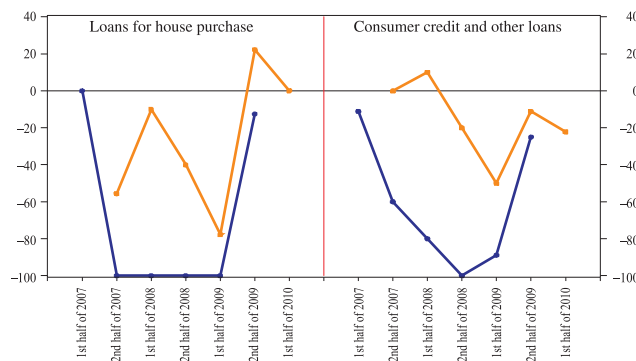


Chart 6.4b

CHANGES IN HOUSEHOLD DEMAND FOR LOANS

(net percentage of banks reporting increased demand)

— Actual
— Bank forecast



Borrowers' financial position

According to banks' assessment, deterioration of the financial position of the major economic sectors decelerated in 2009. The latest survey data suggest that banks have different views about the development paths for the financial positions of various economic sectors in the next six months. Most banks expect improvement in the financial position of the manufacturing sector and deterioration in trade and construction (see Chart 6.5).

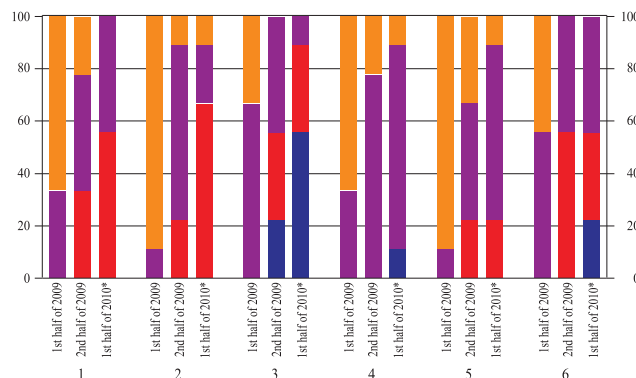
Chart 6.5

BREAKDOWN OF REPLIES REGARDING ASSESSMENT OF CHANGES IN FINANCIAL POSITION OF HOUSEHOLDS AND COMPANIES IN INDIVIDUAL SECTORS

(%)

■ Broadly unchanged/will not change
■ Worsened/will worsen slightly
■ Worsened/will worsen significantly
■ Improved/will improve slightly

- Households
 - Real estate activities
 - Manufacturing
 - Trade
 - Construction
 - Transports
- * Forecast.



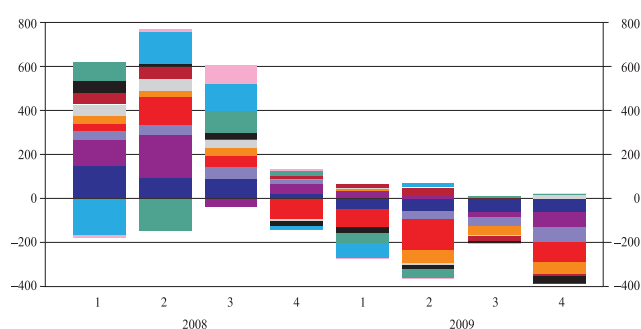
Looking by segment, loans to financial intermediation, trade, manufacturing and household loans for house purchase experienced the most significant contraction in 2009 (see Chart 20).

Chart 20

QUARTERLY CHANGES IN STRUCTURE OF RESIDENT LOAN PORTFOLIO BY MAJOR SEGMENTS

(in millions of lats)

- Household loans for house purchase
- Real estate activities
- Manufacturing
- Financial intermediation
- Trade
- Construction
- Transport, storage and communication
- Electricity, gas and water supply
- Other household loans
- Other loans to non-financial corporations
- Other loans



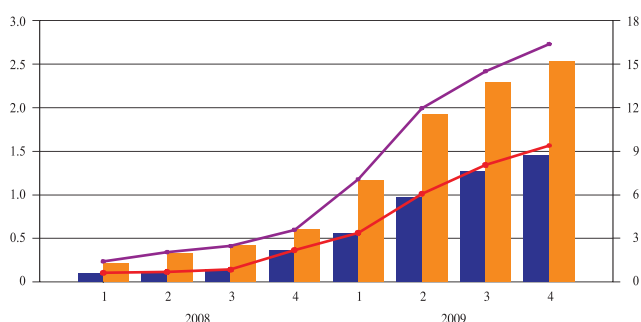
The deep economic recession substantially impaired the financial position of the borrowers, limiting their ability to settle the liabilities to banks; therefore, the quality of the banks' loan portfolio deteriorated significantly in 2009. Loans past due over 90 days reached 16.4% of the aggregate loan portfolio of the banking sector at the end of 2009 {3.6%} (see Chart 21).

Chart 21

LOANS PAST DUE OVER 90 DAYS, PROVISIONS MADE, THEIR SHARE IN AGGREGATE LOAN PORTFOLIO OF THE BANKING SECTOR

(in billions of lats)

- Provisions
- Loans past due over 90 days
- Share of loans past due over 90 days (%; right-hand scale)
- Share of provisions in aggregate loan portfolio (%; right-hand scale)



The steepest increase in those loans was observed in the first half of the year. Although the loan quality continued to deteriorate in the second half of the year, with the appearance of the first signs of recovery in the economy and stabilisation of the real estate market, the pace of deterioration decelerated considerably. The banks actively provided concessions for troubled borrowers. The stock of such restructured loans grew notably in 2009 and reached 16.1% of the aggregate loan portfolio of the banks at the end of December. There is a risk that part of the borrowers whose debt was restructured will still fail to settle the liabilities in 2010 despite the relieved schedule, and this could contribute to further deterioration of the loan portfolio quality. Considering that unemployment will continue to grow in 2010 and the income of many households is not expected to improve (it gradually shrank in 2009 and currently stands at a very low level), the number of households unable to satisfy their current liabilities *vis-à-vis* banks could grow. The solvency of sub-sectors of the non-financial sector with a high debt burden could also continue to worsen. Therefore, the share of loans past due in the loan portfolio will continue to expand in 2010, although not as fast as in 2009 (see Box 8 on credit risk modelling).

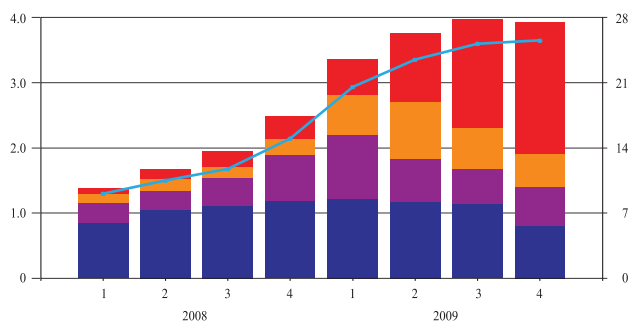
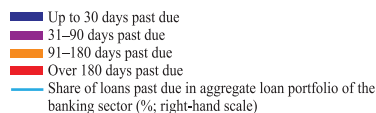
As the loan portfolio quality deteriorated, banks built considerable provisions for non-performing loans (those loans amounted to 9.4% {2.2%} of the aggregate loan portfolio of the banking sector at the end of 2009), thereby suffering record-high losses.

Although the aggregate loans past due decreased in the fourth quarter for the first time in the last two years (see Chart 22), loan migration to higher past due groups in the year 2009 overall and in the fourth quarter was strong. With loans past due up to 90 days decreasing gradually since the second quarter, loans past due over 90 days (mostly over 180 days) expanded considerably quarter-by-quarter. At the end of December, loans past due over 180 days reached 2.0 billion lats or 13.1% of the aggregate bank loan portfolio (see Chart 22). In 2010, the banks will have to decide what to do with those loans, the last option potentially being foreclosure. Several banks have already established subsidiaries to manage the real estate taken over, yet so far their number is small. In 2010, the process of putting the foreclosed properties on the balance sheets of banks and bank subsidiaries could accelerate, as many borrowers have used up all potential solutions to the problems and further restructuring of their debt is inexpedient. Loans in workout process recovery reached 1.5 billion lats or 9.5% of the aggregate loan portfolio of the banking sector at the end of December.

Chart 22

LOANS PAST DUE AND THEIR SHARE IN AGGREGATE LOAN PORTFOLIO OF THE BANKING SECTOR

(in billions of lats)



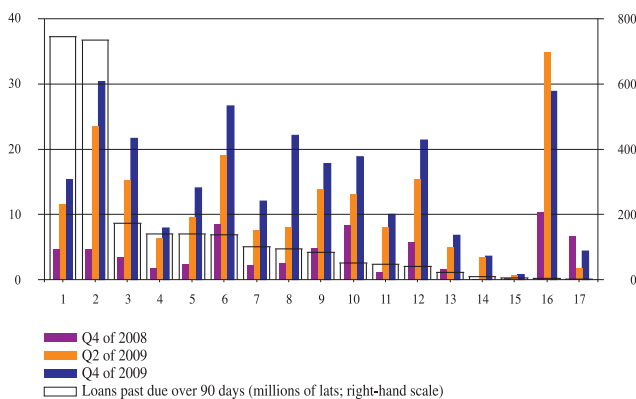
Businesses with an excessive risk appetite in the previous years were the hardest hit by the economic downturn. Mostly these were businesses directly dependent on the real estate market developments; therefore, real estate activities and building, both real-estate-related sectors, experienced sharp deterioration of the loan quality in 2009. For those sectors, the increase in loans past due over 90 days was the most significant in the first half of the year when the prices on the real estate market plunged exceptionally steeply. Under the impact of the economic recession, credit quality deteriorated significantly also in other sectors in which the banks' loan portfolio was concentrated. By segment, household loans for house purchase accounted for the largest share of loans past due over 90 days. Overall, about two thirds of the loans past due over 90 days are still concentrated in the real-estate-related segments³³.

Chart 23

LOANS PAST DUE OVER 90 DAYS AND THEIR SHARES BY MAJOR LOAN SEGMENTS

(%)

1. Household loans for house purchase
2. Real estate activities
3. Construction
4. Loans to non-residents
5. Manufacturing
6. Other household loans
7. Trade
8. Other sectors
9. Household loans for purchasing consumer goods
10. Payment card and overdraft credit to households
11. Transport and storage, information and communication services
12. Accommodation and catering services
13. Agriculture, hunting and forestry
14. Electricity, gas, heating and water supply
15. Financial and insurance activities
16. Mining and quarrying
17. Fishing



Box 7. Credit Register data analysis

According to the Credit Register data, the aggregate loan portfolio of banks and branches of foreign banks, bank subsidiaries, insurers and credit unions (hereinafter referred to as participants) amounted to 16.5 {18.0} billion lats and the average residual maturity of the loan portfolio was 9.3 {9.2} years as at the end of 2009.

Loans of almost all residual maturity groups (except short-term loans with the residual maturity of up to 6 months) shrank gradually in the course of 2009. This suggests that active debt restructuring, very often in the form of a maturity extension, did not change significantly neither the aggregate residual maturity for household loans (average residual maturity was 16.5 {17.0} years at the end of December 2009), nor that of the loans to non-financial corporations (4.6 {4.6} years respectively; see Charts 7.1a and 7.1b). This means that the maturity extension resulting from restructuring the household and non-financial corporation debt was fully offset by the shrinking of the maturities caused by loan portfolio repayments.

Although the balances of new bank loans³⁴ contracted significantly in 2009 reaching the low in the second quarter, they stabilised and even slightly increased in the following quarters (see Chart 7.2).

The balances of new loans to residents remained above 250 million lats every quarter in the second half of the year. The bulk of the loans were granted to non-financial corporations: for acquisition of fixed assets and

³³ Household loans for house purchase, real estate activities, construction.

³⁴ Quarterly amount of newly-granted loans as at the end of the quarter, i.e. taking into account the maturing amounts from the date of granting the loan to the end of the quarter.

Chart 7.1a

LOANS GRANTED BY THE CREDIT REGISTER PARTICIPANTS TO RESIDENT HOUSEHOLDS BY RESIDUAL MATURITY

(in millions of lats)

■ Q4 of 2008
■ Q2 of 2009
■ Q4 of 2009

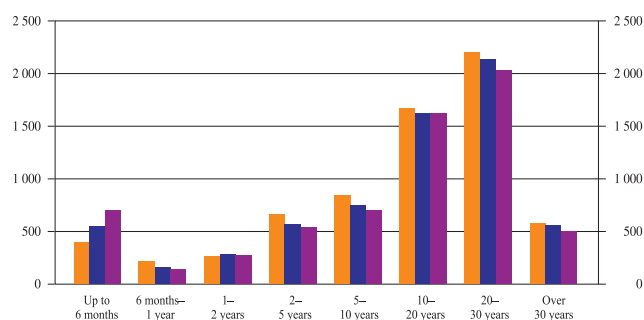


Chart 7.1b

LOANS GRANTED BY THE CREDIT REGISTER PARTICIPANTS TO RESIDENT NON-FINANCIAL CORPORATIONS BY RESIDUAL MATURITY

(in millions of lats)

■ Q4 of 2008
■ Q2 of 2009
■ Q4 of 2009

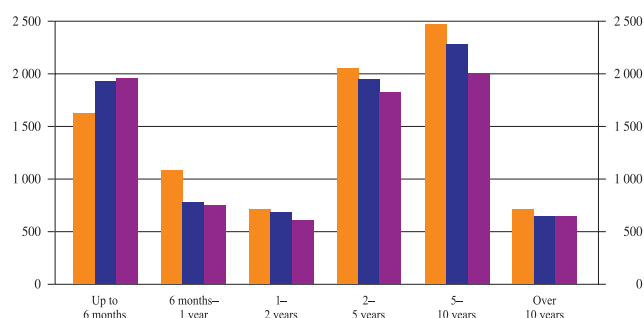
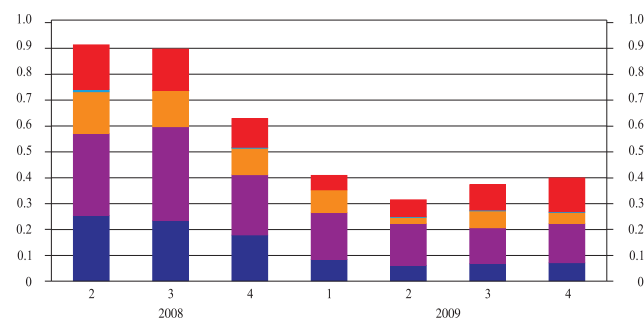


Chart 7.2

QUARTERLY BALANCES OF NEW BANK LOANS

(at the end of period; in millions of lats)

■ Households
■ Non-financial corporations
■ Financial institutions
■ Local governments
■ Non-residents



financing other long-term investment projects as well as increasing the current assets. Hardly any new mortgage loans to non-financial corporations and new loans to households were granted in the second half of the year.

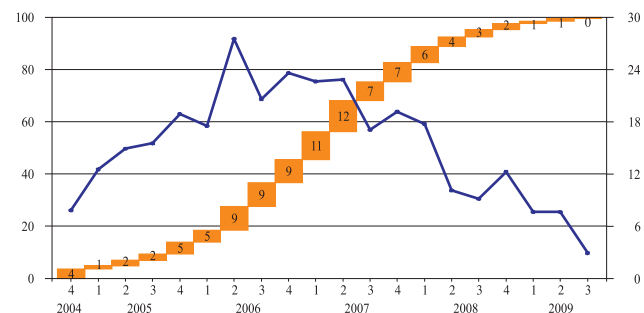
More than a half (55.6%) of loans past due over 90 days as at end of December 2009 were granted in the period from 2006 to the first half of 2007, i.e. during the lending boom when the economy was highly imbalanced (see Chart 7.3). For loans that were granted in 2006 and in the first half of 2007, the share of loans past due over 90 days in aggregate loans granted during the respective period is also exceptionally high.

Chart 7.3

LOANS PAST DUE OVER 90 DAYS BY PERIOD OF GRANTING AND THEIR SHARES IN AGGREGATE BALANCE OF LOANS GRANTED IN THAT PERIOD

(%)

■ Share in aggregate loans past due
— Share in aggregate balance of loans granted in the period (right-hand scale)



The Credit Register data enable to evaluate the quality of the loans granted to households depending on the loan balance. Although the share of loans past due over 90 days grew in all size groups of loans outstanding (see Chart 7.4), yet the households who took large loans (the balance of which exceeded 100 000 lats at the end of 2009) face the biggest difficulties in servicing the debt. Such loans amounted to 45% of the balance of all household loans past due over 90 days.

Chart 7.4

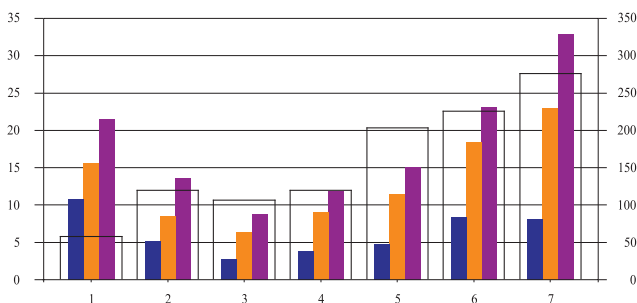
LOANS PAST DUE OVER 90 DAYS GRANTED TO RESIDENT HOUSEHOLDS BY SIZE OF BALANCE

(% of aggregate loan balance within the particular size group)

- 1. Up to 1 000 lats
- 2. 1 000–10 000 lats
- 3. 10 000–30 000 lats
- 4. 30 000–50 000 lats
- 5. 50 000–100 000 lats
- 6. 100 000–200 000 lats
- 7. Over 200 000 lats

■ Q4 of 2008
 ■ Q2 of 2009
 ■ Q4 of 2009

□ Loans past due over 90 days (millions of lats; right-hand scale)



3.3 Credit Risk Shock-Absorption Capacity

With bank capitalisation increasing significantly in 2009, their credit risk absorption capacity improved.

In light of the considerable changes in the methodology for assessment of the banks' credit quality proposed by the FCMC³⁵, the Bank of Latvia improved the methodologies for estimating the banks' sensitivity to credit risk increases, setting the share of loans past due over 90 days in aggregate loans as the main credit risk shock variable. Running a sensitivity test based on the expected increase of provisions, the banks' CAR values as a result of the shock materialising and additional capital required to meet the minimum reserve requirements are estimated.

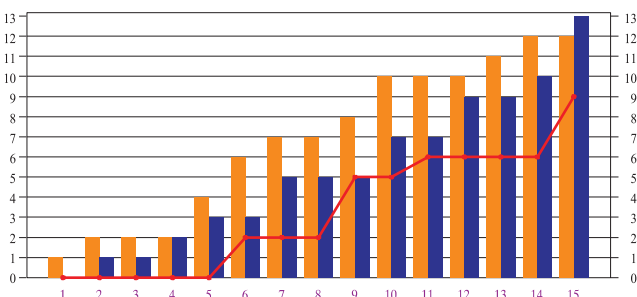
In 2009, the banking sector weathered a considerable credit risk shock, absorbing record-high losses as well as increasing the capital adequacy level to an all-time-high. This had a positive effect also on the sensitivity test results showing³⁶ that the banks' ability to absorb an increase in the share of loans past due over 90 days in their aggregate loan portfolios had improved at the end of 2009 in comparison with the end of the previous year. Overall, at the end of 2009 Latvian banks would have been able to absorb a potential increase in the credit risk resulting in the share of loans past due over 90 days expanding from 16.4%³⁷ to 21.4% of the aggregate loan portfolios (by 5 percentage points; see Charts 24 and 25) without any capital injections. That, in turn, leads to a conclusion that Latvian banks would have been able to absorb about 30% increase in the loans past due over 90 days without any capital injections.

Chart 24

GENERAL CREDIT RISK SHOCK ABSORPTION CAPACITY

(number of banks with CAR below minimum capital requirement; increase in share of loans past due over 90 days (in percentage points) in aggregate loans)

■ Q4 of 2008
 ■ Q2 of 2009
 ■ Q4 of 2009



³⁵ The FCMC "Regulations on Assets Quality Assessment and Provisioning" came to effect on 28 March 2009 containing a significantly modified definition of non-performing loans. Therefore, the latest observations of the time series of non-performing loans are not comparable with the historical observations.

³⁶ Sensitivity test results provide an indication of the scale of losses resulting from growing credit risk that banks would be able to absorb before their CAR falls below the minimum capital requirement. Sensitivity tests reflect bank losses as the need to make additional provisions for loans past due over 90 days whose volume and hence also the share in total loans grow as a result of increasing credit risk. The estimate uses the provisioning ratio (60%) proposed by the FCMC reflecting the share of the additional aggregate provisions made by the bank in the growth of loans past due over 90 days. It is assumed that the banks' profit for the reporting year is zero, and their capital and risk weighted assets are reduced by the amount of the required additional provisions. The estimates take into account the banks' capital expansion plans for 2010.

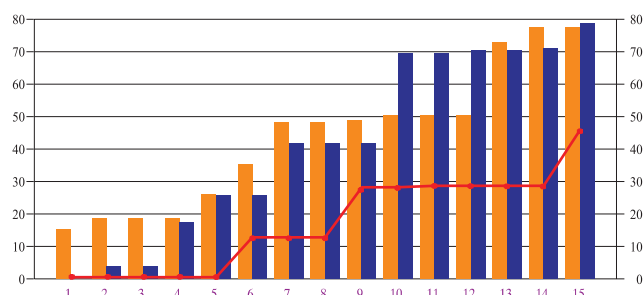
³⁷ The share of loans past due over 90 days in the banks' loan portfolio as at the end of 2009.

Chart 25

**GENERAL CREDIT RISK SHOCK
ABSORPTION CAPACITY**

(share of banks with CAR below minimum capital requirement in aggregate bank assets; increase in share of loans past due over 90 days (in percentage points) in aggregate loans)

■ Q4 of 2008
■ Q2 of 2009
— Q4 of 2009

**Box 8. Bank of Latvia's credit risk model for macroeconomic stress testing**

During the last decade, the number of working papers modelling the links between the credit risk and macroeconomic environment has increased notably. Credit risk is the main source of risk in Latvia's financial system, as reflected by the fact that the capital requirement for credit risk exposure amounts to 90% of the total capital requirement of Latvian banks. For the macroeconomic stress testing of credit risk, the Bank of Latvia used a macroeconomic credit risk model enabling to assess the impact of various macroeconomic development scenarios on the quality of the banking sector's loan portfolio.

Credit risk model

The share of loans past due over 90 days in the aggregate loans was used as an indicator characterising the credit risk:

$$p_t = \frac{\text{past_due}_t}{\text{loans}_t}$$

As according to the definition the potential p_t values are limited in the interval of 0 to 1, classical regression is not appropriate for estimation of the statistical relationships between p_t and macroeconomic variables. There are two approaches to modelling the shares: in one of them relationships are estimated using logistic regression, in the other a transformation is applied to the share allowing to use the classical regression model for the transformed variable (this approach is more common and used in several papers; see, for instance, [2] and [3]; both approaches were explored [1]). When modelling the share of loans past due 90 days in Latvia's banking sector, the second option was used, i.e. logit transformation was applied to the share of non-performing loans:

$$\lambda_t = \ln\left(\frac{1-p_t}{p_t}\right)$$

λ_t is the credit risk indicator: the higher the λ_t value, the better the credit quality with a lower default probability.

The credit risk indicator values depend on macroeconomic factors. As the credit risk indicator λ_t is not stationary, in order to arrive at consistent estimates of the model parameters the regression of the indicator's λ_t quarterly differences $\Delta\lambda_t = \lambda_t - \lambda_{t-1}$ to the macroeconomic variables was estimated:

$$\Delta\lambda_t = \beta_0 + \beta_1 x_{1,t} + \beta_2 x_{2,t} + \dots + \beta_k x_{k,t} + \varepsilon_t$$

$x_t = (x_{1,t}, x_{2,t}, \dots, x_{k,t})$ here represents the value of the set of the macroeconomic variables at the point of time t , while $\beta = (\beta_0, \beta_1, \beta_2, \dots, \beta_k)$ is the vector of the parameters. Each of them determines how deeply and in what direction the changes in the given variable impact on the credit risk indicator and thereby also on the exposure to non-performing loans; ε_t is assumed to be an independent and equally distributed random error.

Data on loans past due over 90 days are available starting from the third quarter of 2004. Given the short time series for the loans due past over 90 days, to increase the number of observations the model parameters were evaluated on the basis of panel data: seven largest banks according to the volume of granted loans were selected. The loans granted by these banks totalled 74% of the aggregate loan portfolio of the Latvian

banks at the end of 2009. Data from the third quarter of 2006 to the fourth quarter of 2008 were used for model evaluation. The particular time interval has been selected because starting from the third quarter of 2006 loans past due over 90 days are on an upward trend. Due to absence of a full business cycle in the sample, the historical data referring to the buoyant economic growth period from the third quarter of 2004 to the second quarter of 2006 are of little use when modelling under the circumstances of an economic downturn.

In order to determine the optimal multivariate model, the set of explanatory macroeconomic variables was split into the following groups: cyclical indicators, household indicators, price stability indicators and interest rates. At the beginning all univariate models are evaluated (including the dependant variable at the point of time t and the values of the explanatory variables at the point of time t as well as up to 4 lags inclusive). These estimates were used as indicators of the dependence of the credit risk indicator on the macroeconomic variables. After that all the possible regressions were evaluated, including no more than one variable from each group (up to 4 lags inclusive of the same variables and their combinations were also examined). The resulting regressions were arranged according to the values of the adjusted R^2 . Models with illogical (from the point of view of the economic theory) signs or insignificant parameters were discarded. In the next step, the coefficient stability of the best models was tested by evaluating the same model in various sub-samples. Based on the results of these proceedings, a credit risk model was selected which, on the one hand, yielded a sufficiently high value of the adjusted determination coefficient and, on the other hand, also displayed sufficient stability of the coefficient estimates.

The macroeconomic credit risk model links the credit risk indicators of the selected banks with the real GDP, unemployment and CPI developments. The GDP is used as an indicator characterising the state of borrowers' income and the business cycle, CPI as an indicator of the price stability level and unemployment as an indicator characterising the financial position of households.

$$\Delta \lambda_{it} = 5.88 * (\Delta \ln IKP_REAL_t + \Delta \ln IKP_REAL_{t-1}) / 2 - \\ - 1.28 * \Delta \ln Unemployment_{t-2} - 10.86 * \Delta \ln PCI_t$$

Quarterly data of a seven banks panel from the third quarter of 2006 to the fourth quarter of 2008 were used for model parameter estimation (70 observations overall). All model parameters are significant at 1% significance level; fixed effects are insignificant.

In order to illustrate the usability of the model in macroeconomic stress testing, the impact of two scenarios on the share of loans past due over 90 days in aggregate loans was analysed.

Scenarios

Baseline scenario is based on the quarterly macroeconomic forecasts of the Bank of Latvia and projects a slow recovery of the Latvian economy in 2010. Latvia's GDP growth is expected to remain in a negative territory (-2.5%) and unemployment measured as the rate of jobseekers to reach 21.3%. The annual inflation will also remain negative at -3.6%.

Stress scenario analyses the potential reaction of the Latvian economy to a significant external demand shock (-15%) that could materialise if the economic recovery of the euro area is significantly slower than currently expected. The impact of this shock was simulated using Latvia's macroeconomic model (see Beņkovskis, K., Stikuts, D. Latvia's Macroeconomic Model. Riga: Bank of Latvia, 2006. Working Paper No 2/2006). The results of the modelling show that such a shock could significantly delay the economic recovery process. The GDP growth will be 4 percentage points lower than in the baseline scenario, unemployment measured as the rate of jobseekers will be 1.3 percentage points higher than in the baseline scenario, whereas inflation will remain quite similar to the baseline scenario and will be 0.1 percentage point lower.

The results of modelling the impact of macroeconomic scenarios on credit risk

The obtained model parameters were used to model the development of the Latvian banking sector loans past due over 90 days for the period of up to the fourth quarter of 2010.

According to the baseline scenario, the exposure to the loans past due over 90 days will grow to 22% as at the end of 2010. According to the stress scenario, the exposure to the loans past due over 90 days will reach 26.4% as at the end of 2010.

Bibliography

1. Boss, F., Pann, P., Schneider, U. *Modeling Credit Risk through the Austrian Business Cycle: An Update of the OeNB Model, Financial Stability Report, 17 June 2009.*
2. *Deutsche Bundesbank Financial Stability Review, November 2005, 59 p.*
3. Virolainen, K. *Macro Stress Testing with a Macroeconomic Credit Risk Model for Finland, Bank of Finland Discussion Paper, No. 18/2004.*

In order to evaluate the credit risk shock absorption capacity of banks in interconnection with the Latvian macroeconomic development forecasts, stress tests were carried out on the basis of the forecasts of the share of loans past due over 90 days in the aggregate loan portfolio of the banks as at the end of 2010 obtained by evaluating the Bank of Latvia's credit risk model. The estimates were prepared using the parameters of the baseline and stress scenarios, based on the banking sector data as at the end of 2009 (see Table 2).

Table 2

RESULTS OF MACROECONOMIC CREDIT RISK STRESS TESTS AT THE END OF 2010

	Baseline scenario	Stress scenario
Forecast share of loans past due over 90 days in the banks' loan portfolio as at the end of 2010 (%)	22.2	26.4
Number of banks with CAR below 8%	0	5
Additionally required capital (in millions of lats)	0	67.8
Additionally required provisions (in millions of lats)	538.6	927.7
Assets of banks with CAR below 8% (% of aggregate bank assets)	0	28.0
Additionally required provisions (% of aggregate bank assets)	2.5	4.3

Materialisation of the baseline scenario in 2010 would result in a need for the banks to make additional provisions in the amount of 538.6 million lats or 2.5% of the total bank assets. Estimates show that the capital base formed by the banks by the end of 2009 would allow them to absorb such an increase in losses without any problems.

In the event of the stress scenario materialising, five banks would have to increase the capital by 67.8 million lats in total, in order to absorb the rise in credit risk and satisfy the capital adequacy requirement. Additionally required provisions would grow to 927.7 million lats or 4.3% of the total bank assets.

4. BANK LIQUIDITY AND MARKET RISKS

4.1 Funding and Liquidity Risks

Liquidity risk eased visibly in late 2009 owing to a growth of bank time deposits and capital. Rating agencies too have noted signs of economic stabilisation. The launched structural reforms and fiscal consolidation need to be carried on actively in order to continue enjoying investors' favour and improve the availability of market funding.

In 2009, the global financial environment demonstrated certain signs of recovery resulting in prudent optimism as to potential investment inflows to Latvia. The fact that JSC *Parex banka* succeeded in attracting the EBRD as a shareholder with 25% plus one vote and a contribution to subordinated capital was a positive signal. At the end of the year, the international rating agencies were much more optimistic about Latvia's prospects to revive its economy and retained the assigned ratings unchanged. Given the ongoing economic stabilisation, in February 2010 S & P raised credit rating outlook for Latvia from negative to stable, and at the end of March Moody's followed suit, pointing to the notable improvements during the past six months.

At the end of 2009, bank liquidity improved rapidly owing to steadier global and domestic financial markets as well as adoption of the Law "On State Budget 2010" in due time. This is why resident and non-resident deposits with banks increased, suggesting that the confidence in the banking sector is returning. Provided that the reforms towards economic stabilisation continue, one could expect the growth of deposits to continue also in 2010.

Deposits received by banks declined by 210.4 million lats in 2009, of this resident deposits decreased by 53.0 million lats (including the 51.9 million lats deposit of the Treasury with JSC *Parex banka* that was capitalised), while non-resident deposits decreased by 157.4 million lats. At the end of 2009 such deposits totalled to 9 549.7 million lats (of this, the deposit of the Treasury with JSC *Parex banka* amounting to 622.0 million lats; see Chart 26). In the first three quarters of the year deposits received contracted by 755.6 million lats against the backdrop of the vague economic outlook for Latvia. Resident euro deposits increased, whereas the share of lats deposits in total resident deposits decreased by 9 percentage points over the year, to stand at 40%. At the end of the year the share of lats deposits in total resident deposits moved up somewhat on account of the elevated interest rates on lats deposits and the complementing of the individual income tax base with capital gains tax (effective as of 1 January 2010), allowing banks to attract deposits and pay out interest on a deposit when opening a deposit account (see Chart 27).

Chart 26

DYNAMICS OF NON-BANK DEPOSITS

(in billions of lats)

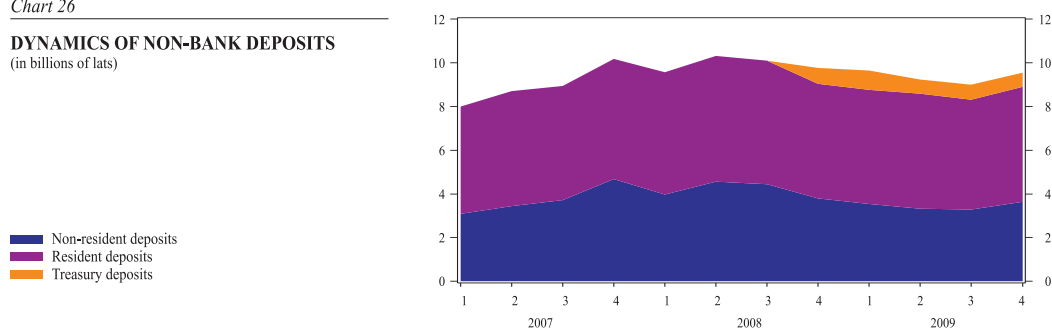
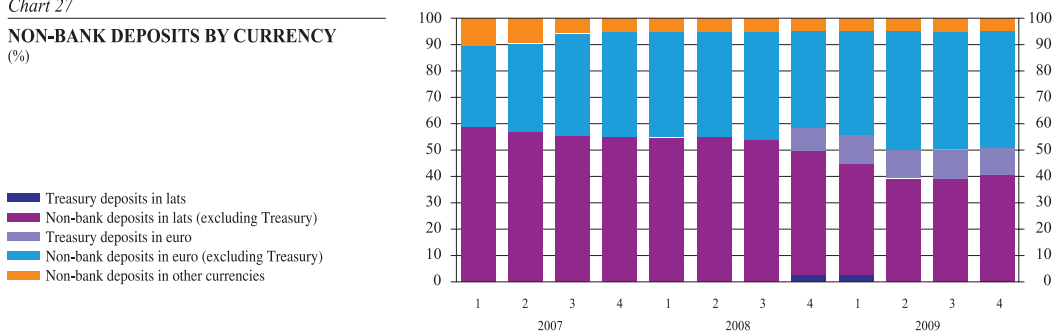


Chart 27

NON-BANK DEPOSITS BY CURRENCY

(%)



The liabilities of subsidiaries of the bank groups of EU15 countries to their parent banks decreased by 1 203.3 million lats mainly on account of a contraction of the loan portfolio by 771.7 million lats and an increase of paid-up and subordinated capital by 509.5 million lats (see Chart 28). This bank group nevertheless has the potential to resume lending swiftly, since short-term claims on parent banks increased by 355.9 million lats over the year, to stand at 794.8 million lats at the end of the year. Provided the national economy becomes stronger, part of these assets could be used for lending.

As to the rest of banks, the structure of funding was notably affected by a decrease in deposits by 211.4 million lats over the year (see Chart 29), as well as repayment of syndicated loans at total amount of 481.6 million lats. The amount of the Treasury deposits with JSC *Parex banka* did not change materially over the year. This bank group was also able to raise the paid-up and subordinated capital by 420.2 million lats and thus improve the capitalisation level. In the fourth quarter, the trust of investors was won back and banks met their obligations towards syndicated lenders; however, in a nearby future the possibility to attract funding from financial markets remains limited for this bank group.

The sensitivity of the Latvian banking sector to the funding received from foreign MFIs was substantial. It was mitigated though by a number of factors: the long maturities of the funding received by the subsidiaries of the bank groups of EU15 countries, the commitment of the EC and IMF and Nordic banks (Swedbank AB, Skandinaviska Enskilda Banken AB, Nordea Bank Finland Plc and Bank DnB NORD A/S), affirmed in September 2009 in Stockholm, to support their branches and subsidiaries in Latvia in meeting their liquidity and capital needs in compliance with the effective legislation. Conversely, for domestic banks the access to market financing is limited, hence their liabilities declining.

Chart 28

QUARTERLY CHANGES IN KEY ASSET AND LIABILITY ITEMS OF SUBSIDIARIES OF THE BANK GROUPS OF EU15 COUNTRIES

(in billions of lats)

- Claims on the Bank of Latvia
- Claims on parent banks
- Loans to non-banks
- Government securities
- Liabilities to affiliated banks
- Liabilities to other banks
- Non-bank deposits
- Paid up and subordinated capital

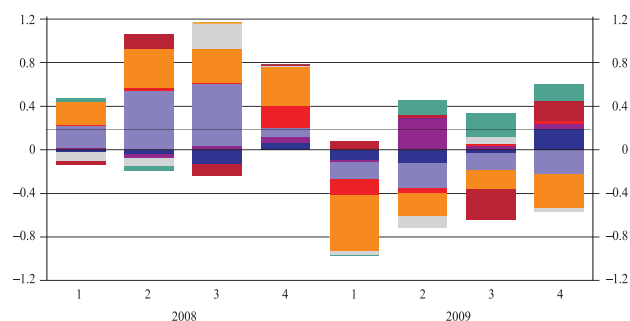
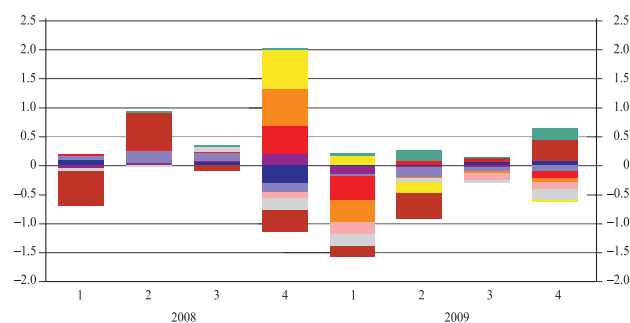


Chart 29

QUARTERLY CHANGES IN KEY ASSET AND LIABILITY ITEMS OF OTHER BANKS

(in billions of lats)

- Claims on the Bank of Latvia
- Claims on banks
- Loans to non-banks
- Government securities
- Liabilities to the Bank of Latvia
- Syndicated loans
- Liabilities to other banks
- Treasury deposits with JSC Parex banka
- Other non-bank deposits
- Paid up and subordinated capital



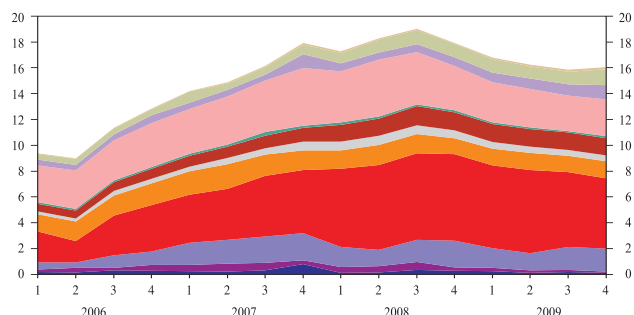
Liquidity risk was considerably reduced by long-term funding from foreign MFIs (73.0% of total MFI financing or one third of all liabilities; see Chart 30).

Chart 30

COMPOSITION OF BANK FUNDING SOURCES BY RESIDUAL MATURITY

(in billions of lats)

- MFI financing
 - On demand
 - ≤1M
 - >1M≤12M
 - >12M
- Household deposits
 - On demand
 - ≤1M
 - >1M≤12M
 - >12M
- Non-financial corporation deposits
 - On demand
 - ≤1M
 - >1M≤12M
 - >12M



In the fourth quarter, the volume of deposits expanded buoyantly, therefore the liquidity ratio³⁸ defined by the FCMC was the highest since the peak in 2002 (62.8%; see Chart 31). The comparison of liquidity ratios of the subsidiaries of bank groups of EU15 countries and other banks shows that in the previous years their levels differed notably as the business models of the two bank groups were different: the subsidiaries of the bank groups of EU15 countries allocated more funding for long-term lending. Yet, in 2009 the liquidity ratios of the two bank groups levelled out (see Chart 32), because the decline in loan portfolios of the subsidiaries of bank groups of EU15 countries was replaced with investment in liquid assets.

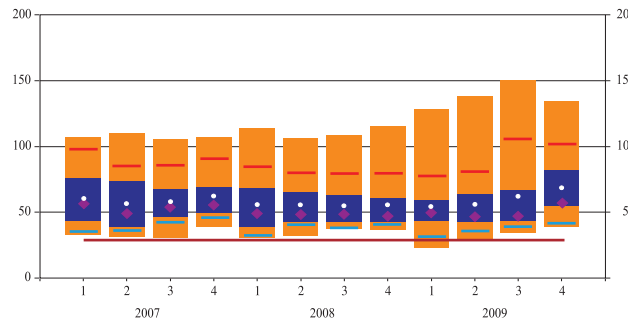
The Bank of Latvia conducts liquidity stress tests with the purpose of evaluating the possible consequences of material financial outflows. The results of the liquidity stress tests indicate the tolerance of the banks to the outflows of non-resident non-MFI deposits, resident non-MFI deposits and total (MFI and non-MFI) financing with the residual maturity of up to three months before their liquidity ratios reaching 0.

³⁸ Liquid assets (vault cash; claims on the Bank of Latvia and solvent credit institutions whose residual maturity does not exceed 30 days, and deposits with other maturity, if a withdrawal of deposits prior to the maturity has been stipulated in the agreement; investment in financial instruments, if their market is permanent and unrestricted) must not be less than 30% of banks' total current liabilities with residual maturity under 30 days.

Chart 31

DISPERSION OF LIQUIDITY RATIO (DEFINED BY FCMC)

- Minimum – maximum range
- Interquartile
- Median
- Weighted average
- 90th percentile
- 10th percentile
- Minimum ratio defined by FCMC

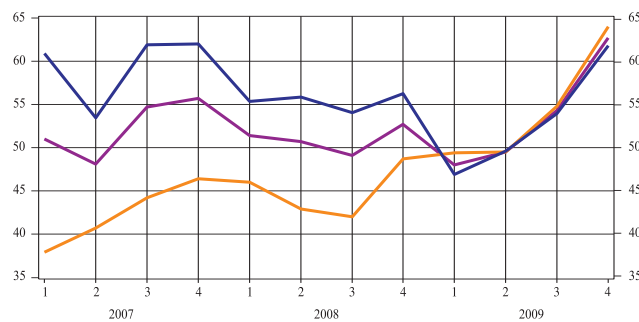


Note: Two small banks with a very high liquidity ratio are excluded.

Chart 32

LIQUIDITY RATIO (DEFINED BY FCMC) BY BANK GROUP (%)

- Banking sector – total
- Subsidiaries of bank groups of EU15 countries
- Other banks



The first stress test scenario shows the proportion of non-resident deposits that may flow out without causing liquidity deficit to banks, on the condition that banks do not borrow additional funds to offset the deposit outflows. According to the stress test results, all banks would still be able to fulfil their liabilities even when 41% of non-resident non-MFI deposits have flown out. This ratio has notably improved over the year owing to the fact that banks were able to increase the amount of their liquid assets (see Charts 33 and 34). Should outflows of all non-resident non-MFI deposits occur, 11 Latvian banks, with 32% of total bank assets in Latvia, would default on their short-term liabilities and lose liquidity. However, the data for 2009 indicate that not a single bank has experienced monthly outflows of non-resident deposits that large in size, and maximum outflow of non-resident deposits in any bank has not exceeded 15% of total non-resident deposits with that bank.

Chart 33

LIQUIDITY STRESS TEST RESULTS IN CASE OF OUTFLOWS OF NON-RESIDENT DEPOSITS (31.12.2009; number of banks)

- Illiquid banks ($I_r < 0\%$)
- Solvent banks non-compliant with the required liquidity ratio ($0\% \leq I_r < 30\%$)
- Banks compliant with the required liquidity ratio ($I_r \geq 30\%$)
- Illiquid banks (31.12.2008)
- Illiquid banks (30.06.2009)

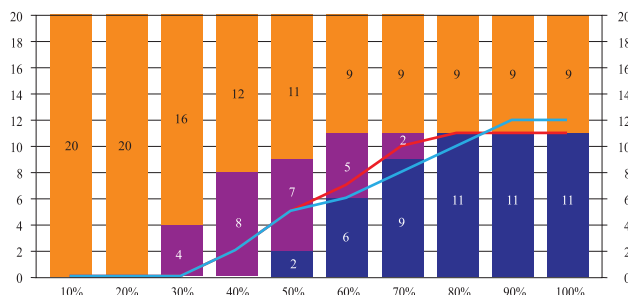
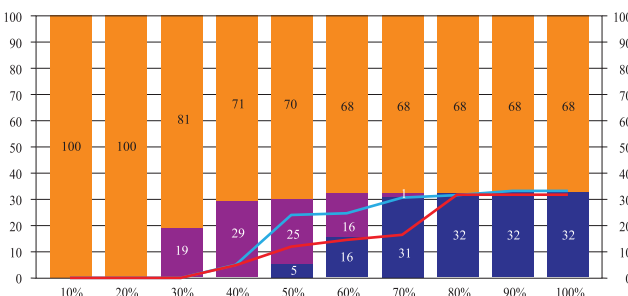


Chart 34

LIQUIDITY STRESS TEST RESULTS IN CASE OF OUTFLOWS OF NON-RESIDENT DEPOSITS (31.12.2009; % of total bank assets)

- Illiquid banks ($I_r < 0\%$)
- Solvent banks non-compliant with the required liquidity ratio ($0\% \leq I_r < 30\%$)
- Banks compliant with the required liquidity ratio ($I_r \geq 30\%$)
- Illiquid banks (31.12.2008)
- Illiquid banks (30.06.2009)



The second stress test scenario shows the proportion of resident deposits that may flow out without causing liquidity shortages to banks, on the condition that banks do not borrow additional funds to offset the deposit outflows. Liquidity stress test results lead to a conclusion that liquid assets of any bank cover not less than 28% of the bank's resident non-MFI deposits. In the first half of the year this ratio deteriorated somewhat, while the second half of the year witnessed notable improvements (see Charts 35 and 36), when the small banks had inferior ratios. Should outflows of all resident non-MFI deposits occur, 9 Latvian banks, with 69% of total bank assets in Latvia, would default on their short-term liabilities and lose liquidity. However, in 2009 the maximum monthly outflows of resident deposits in each individual bank did not exceed 15% of the bank's total resident deposits.

Chart 35

LIQUIDITY STRESS TEST RESULTS IN CASE OF OUTFLOWS OF RESIDENT DEPOSITS
(31.12.2009; number of banks)

- Illiquid banks ($lr < 0\%$)
- Solvent banks non-compliant with the required liquidity ratio ($0\% \leq lr < 30\%$)
- Banks compliant with the required liquidity ratio ($lr \geq 30\%$)
- Illiquid banks (31.12.2008)
- Illiquid banks (30.06.2009)

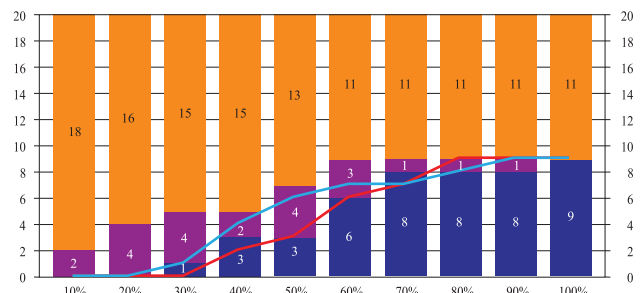
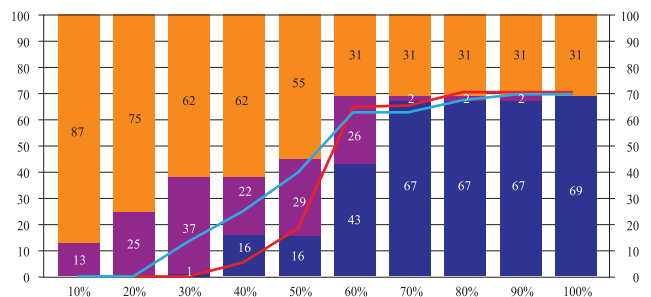


Chart 36

LIQUIDITY STRESS TEST RESULTS IN CASE OF OUTFLOWS OF RESIDENT DEPOSITS
(31.12.2009; % of total bank assets)

- Illiquid banks ($lr < 0\%$)
- Solvent banks non-compliant with the required liquidity ratio ($0\% \leq lr < 30\%$)
- Banks compliant with the required liquidity ratio ($lr \geq 30\%$)
- Illiquid banks (31.12.2008)
- Illiquid banks (30.06.2009)



The third stress test scenario assumes an outflow of all financing with a maturity of up to three months (both deposits and MFI financing). Also in this case it is evident that banks could survive an outflow of financing up to 30% (see Charts 37 and 38). Overall, the resilience to shocks strengthened in the large and medium-size banks. In the event of a 50% bank asset outflow, seven banks comprising 34% of total Latvian banking sector assets would need additional funds in the amount of up to 1.6% of the Latvian banking sector assets to restore positive liquid assets.

Chart 37

LIQUIDITY STRESS TEST RESULTS IN CASE OF OUTFLOWS OF FINANCING WITH MATURITY OF UP TO 3 MONTHS
(31.12.2009; number of banks)

- Illiquid banks ($lr < 0\%$)
- Solvent banks non-compliant with the required liquidity ratio ($0\% \leq lr < 30\%$)
- Banks compliant with the required liquidity ratio ($lr \geq 30\%$)
- Illiquid banks (31.12.2008)
- Illiquid banks (30.06.2009)

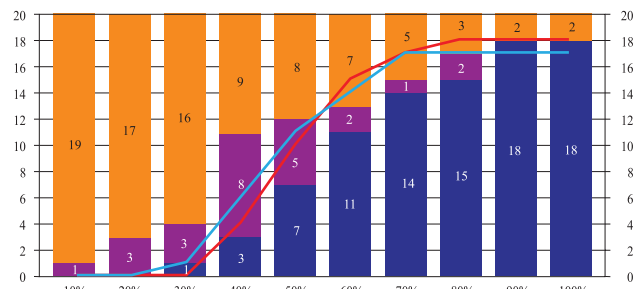
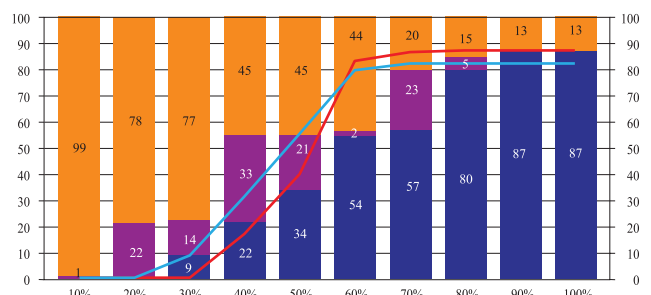


Chart 38

LIQUIDITY STRESS TEST RESULTS IN CASE OF OUTFLOWS OF FINANCING WITH MATURITY OF UP TO 3 MONTHS
(31.12.2009; % of total bank assets)

- Illiquid banks ($lr < 0\%$)
- Solvent banks non-compliant with the required liquidity ratio ($0\% \leq lr < 30\%$)
- Banks compliant with the required liquidity ratio ($lr \geq 30\%$)
- Illiquid banks (31.12.2008)
- Illiquid banks (30.06.2009)



Liquidity stress test results suggest that the outflow of non-resident deposits would affect the banks that do not have a parent bank in a EU15 country. The outflow of resident deposits and financing with a maturity of up to three months would affect banks of both categories; however, those with limited possibilities to borrow extra funding would incur higher risk. Overall, in 2009 the funding outflow risks eased, and in the crisis period the actual maximum monthly and yearly funding outflows from the banks were below the amounts according to stress tests.

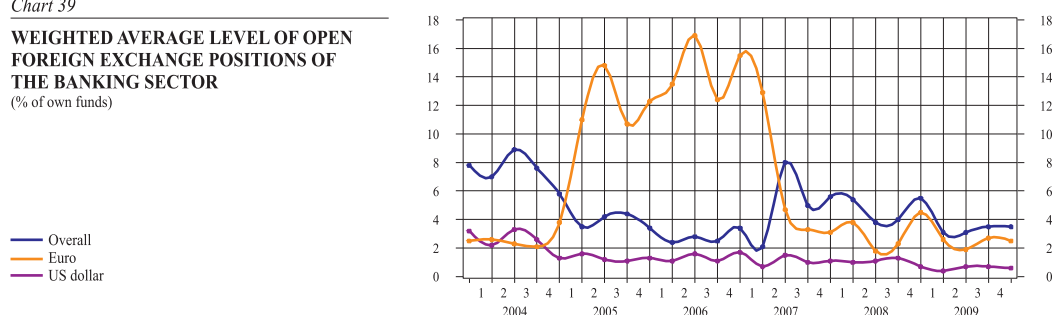
4.2 Foreign Exchange Risk

In 2009, the exposure of banks to direct foreign exchange risk remained low.

The level of bank exposure to direct foreign exchange risk can be estimated from the dynamics of bank net open foreign exchange positions. Total net open foreign exchange positions of the banking sector changed comparatively little³⁹ over 2009 and stood at 3.5% of own funds of the banking sector at the end of the year, down from 5.5% at the beginning of the year (see Chart 39).

Chart 39

WEIGHTED AVERAGE LEVEL OF OPEN FOREIGN EXCHANGE POSITIONS OF THE BANKING SECTOR (% of own funds)



Note: Data for the period starting with the fourth quarter of 2008 and ending with the fourth quarter of 2009 do not include JSC Parex banka.

Note: Calculations use the absolute values of the open foreign exchange positions. Open foreign exchange positions of individual banks are own funds-weighted. Between 1 January 2005 and May 2007, the open foreign exchange positions of the euro were excluded from the calculations of the aggregate open foreign exchange position due to the lats peg to the euro.

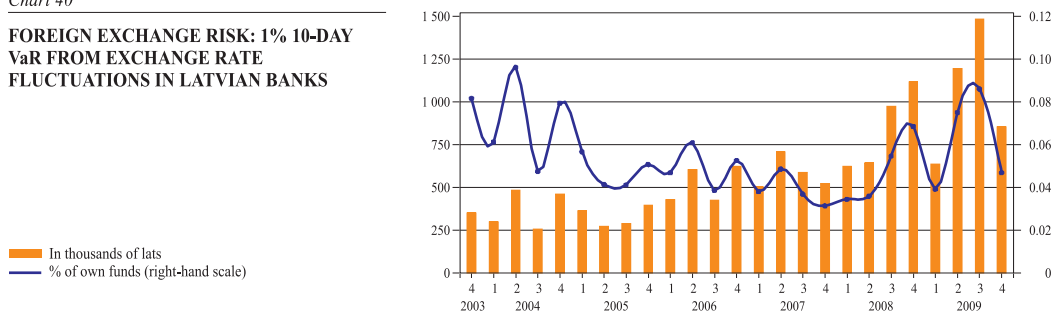
Already since the first half of 2007 (when the threshold of 10% relative to a bank's own funds for the net open euro position was reinstated⁴⁰), the weighted average open euro position of the banking sector remained at below 6% of own funds. The weighted average open euro position of the banking sector relative to own funds decreased from 4.5% to 2.5% over 2009. Conversely, in 2009 the changes in weighted average open US dollar position were negligible (see Chart 39).

In general, banks continued to pursue a conservative and prudent management policy with regard to open foreign exchange positions, thus notably mitigating their exposure to direct foreign exchange risk.

VaR calculations⁴¹ also suggest that in general, despite the periodic increase of volatility in the foreign exchange market, exposure to direct foreign exchange risk of the banks remained relatively low in 2009 (see Chart 40).⁴²

Chart 40

FOREIGN EXCHANGE RISK: 1% 10-DAY VaR FROM EXCHANGE RATE FLUCTUATIONS IN LATVIAN BANKS



Note: Data for the period starting with the fourth quarter of 2008 and ending with the fourth quarter of 2009 do not include JSC Parex banka.

³⁹ Hereinafter, data on the dynamics of the banking sector's total net open foreign exchange position and net open positions in individual currencies, VaR values and sensitivity to the US dollar fluctuations for the period starting with the fourth quarter of 2008 and ending with the fourth quarter of 2009 do not include JSC Parex banka.

⁴⁰ FCMC, 26 April 2007, Regulation No. 57 "Amendments to the Regulation for Calculating Capital Adequacy".

⁴¹ VaR reflects the maximum expected losses over a certain period of time with a given probability. 1% 10 day VaR from exchange rate fluctuations means that within the next 10 days there is only a 1% probability that losses from exchange rate fluctuations will exceed the VaR. In this report, VaR was obtained based on open currency positions of individual banks at the end of each month. Calculations use the historical daily exchange rate changes within one year prior to the VaR evaluation date (last day of the relevant month). Since repegging the lats to the euro, VaR calculations no longer include the euro component.

⁴² One should keep in mind that VaR for the Latvian banking sector is the aggregate of VaRs of individual banks. The actual aggregate VaR for the banking sector is somewhat lower, because of the lack of full positive correlation between VaRs of individual banks.

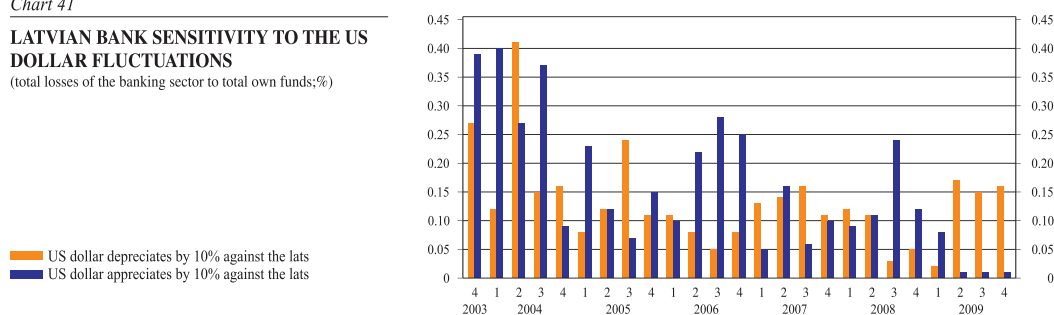
Most of the banking sector's 1% 10-day VaR value is the potential bank losses on account of the considerable increase in the US dollar volatility over the past two years. In 2009, the VaR of the banking sector, as percentage of the banks' own funds, fluctuated between 0.04% and 0.09%, i.e. was rather low.

In 2009, bank sensitivity to the potential depreciation of the US dollar increased (see Chart 41). Given the comparatively small value of the open position in the currency, aggregate losses of the banking sector on account of a 10% depreciation of the US dollar relative to the lats would not be higher than 0.16% of the banking sector own funds. All in all, the results of sensitivity analysis confirm the previously defined conclusions about the banks' limited exposure to direct foreign exchange risk.

Chart 41

LATVIAN BANK SENSITIVITY TO THE US DOLLAR FLUCTUATIONS

(total losses of the banking sector to total own funds;%)



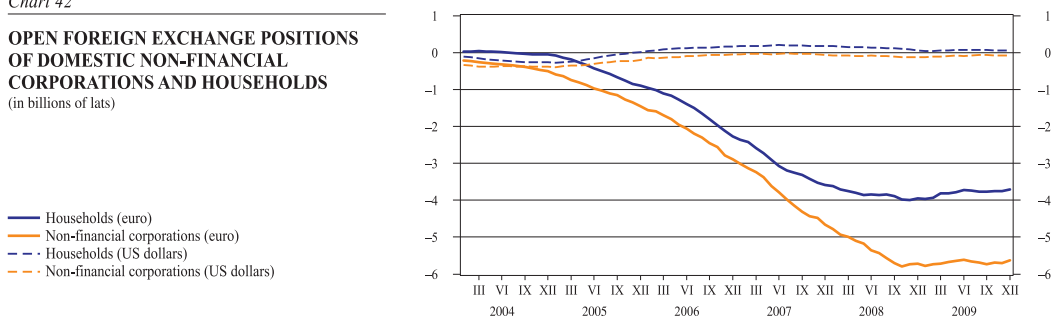
Note: Data for the period starting with the fourth quarter of 2008 and ending with the fourth quarter of 2009 do not include JSC Parex banka.

As to banks' clients, there is far less balance in their foreign exchange positions than those of banks. Between the beginning of 2004 and the end of 2008, the total open euro position of resident non-financial corporations and households (the gap between the amounts deposited with banks and loans granted in the currency in question) has been widening incessantly. In 2009, however, it seems to be narrowing slowly (at an average rate of 0.3% per month), given the banks' downsized loan portfolio (see Chart 42).

Chart 42

OPEN FOREIGN EXCHANGE POSITIONS OF DOMESTIC NON-FINANCIAL CORPORATIONS AND HOUSEHOLDS

(in billions of lats)



Note: The open foreign exchange position of the non-bank sector is the difference between the deposits received from and lending to non-banks by Latvian banks.

At the end of 2009 the bulk (about 90%) of lending to resident non-banks was in euro. At that time, the overall open euro position of non-financial corporations and households amounted to 9 328.2 million lats (approximately 70.4% of GDP), including a 5 622.8 million lats (42.5% of GDP) open euro position of non-financial corporations and 3 705.4 million lats (28.0% of GDP) open euro position of households.

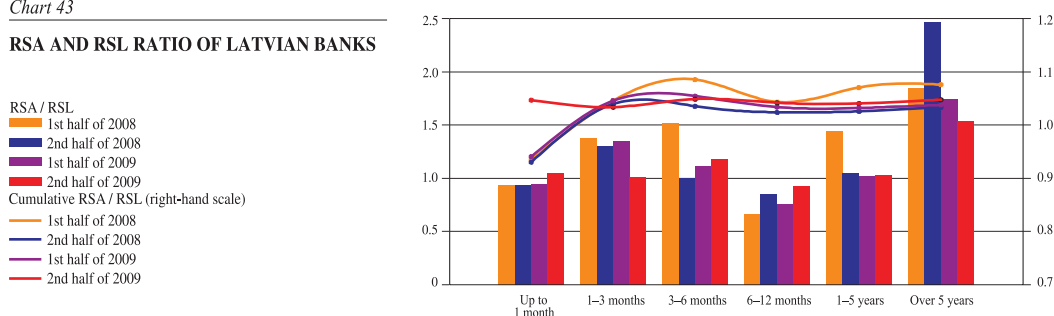
4.3 Interest Rate Risk

In 2009, the results of RSA and RSL term structure and sensitivity analysis still pointed to a limited exposure of Latvian banks to interest rate risk.

Cumulative 1-year RSA to RSL ratio, which is the key ratio for the interest rate risk management purposes, increased from 1.02 to 1.04 year-on-year, implying that at the end of 2009 Latvian banks' RSA and RSL for maturities up to one year were nearly balanced (see Chart 43). Over the year, the RSA and RSL balance improved for 1–3 month, 6–12 month and long (over 5 years) maturities.

Chart 43

RSA AND RSL RATIO OF LATVIAN BANKS

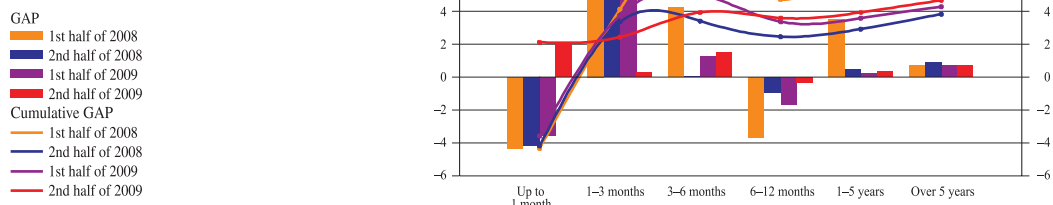


At the end of 2009, the ratio of GAP⁴³ to Latvian banks' assets decreased year-on-year for some maturities and fluctuated within a range between 0.3% and 2.1% of banks' assets (see Chart 44). In the second half of the year, when banks' total RSL to credit institutions decreased, the term structure of GAP changed. The maturity band of up to 1 month was subject to the most pronounced changes, with a positive GAP for the first time in the recent years. The maturity band of 1–3 months also witnessed considerable changes (see Section 4.1). Cumulative 1-year GAP relative to banks' assets increased to 3.6% {2.5%}, yet, despite the increase, it continues to suggest a relatively low exposure of banks to interest rate risk.

The analysis of bank sensitivity to the impact of potential changes in interest rates on banks' net annual interest income has an important role while assessing the interest rate risk. The CEBS, following the recommendations of the Basel Committee on Banking Supervisors, proposes to set the level of unexpected parallel shift of interest rates (parallel rate shock) at 200 basis points.

Chart 44

GAP'S SHARE IN TOTAL LATVIAN BANKS' ASSETS (%)



The results of short-term sensitivity analysis show that the impact of potential interest rate changes on net annual interest income of Latvian banks would still be immaterial (see Chart 45). With interest rates increasing by 200 basis points (i.e. 2 percentage points), a positive GAP in the time-band up to 1 month, 1–3 months and 3–6 months would increase the net interest income of Latvian banks by 0.4%, 0.1% and 0.2% of own funds respectively. All in all, considering the negative GAP in the maturity band 6–12 months, the interest rate increase by 200 basis points would result in an increase of banks' net interest income by 0.6% (cumulative effect) of banks' total own funds.

In 2009, there were no essential shifts in the distribution of main interest rate risk indicators. In the breakdown by banks, in the case of 200 basis points rate shock the net annual interest rate income would increase by maximum 8.5% {11.0} of own funds at the end of 2009, whereas the maximum fall would be 4.1% {3.0%} (see Chart 46). The interquartile range demonstrates that for half of the banks the effect of interest rate

⁴³ The GAP of a pre-defined time-band is the difference between the RSA and RSL value within the specific time-band. The larger a particular bank's GAP, the higher its interest rate risk exposure. In the event of a positive GAP, the bank will incur losses from an interest rate decline, as the RSA exceed the RSL and, therefore, the bank's interest income will shrink more notably than the expenditure. In the event of a negative GAP, the bank will incur losses from a rise in interest rates, as the liabilities exceed the assets and, therefore, the banks' interest expenditure will grow more than the income.

⁴⁴ Principles for the Management and Supervision of Interest Rate Risk. Basel Committee on Banking Supervision. July 2004; Technical aspects of the management of interest rate risk arising from non-trading activities under the supervisory review process. Committee of European Banking Supervision. October 2006. Such parameter value for the interest rate shock has currently also been introduced by the FCMC in the Regulations on the Management of Interest Rate Risk, Preparation of a Report on the Calculation of Economic Value Decline and of a Report on the Term Structure of Interest Rate Risk.

⁴⁵ The impact on net annual interest income within each time-band is calculated by multiplying the time-band's GAP with the interest rate change and the ratio of this time-band characterising the part of the year when the GAP of this time-band will be active. For the purposes of calculating the ratio, it is assumed that repricing will take place in the middle of the time-band. For example, 3 to 6 month time-band ratio is calculated as follows: $(12 - 0.5 \times (3 + 6)) / 12 = 0.625$. The overall impact on the profit for the year is the aggregate effect for the first four time-bands.

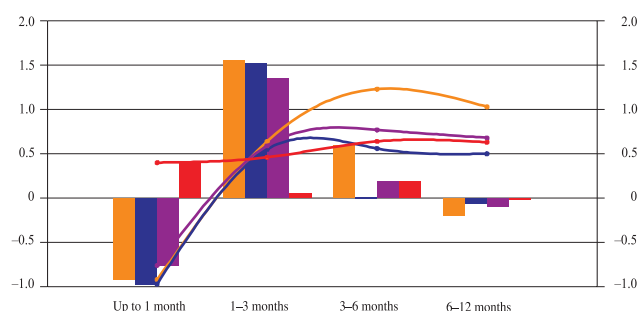
⁴⁶ As the calculations are based on the GAP method, they do not take into account the interest rate impact on the bank's economic value and are based on the structure of the bank's balance sheet as at the end of 2009.

Chart 45

**SHORT-TERM SENSITIVITY ANALYSIS:
IMPACT OF INTEREST RATE INCREASE
BY 200 BASIS POINTS ON THE ANNUAL NET
INTEREST INCOME OF LATVIAN BANKS BY
MATURITY**
(% of own funds)

Impact
 ■ 1st half of 2008
 ■ 2nd half of 2008
 ■ 1st half of 2009
 ■ 2nd half of 2009

Cumulative impact
 — 1st half of 2008
 — 2nd half of 2008
 — 1st half of 2009
 — 2nd half of 2009

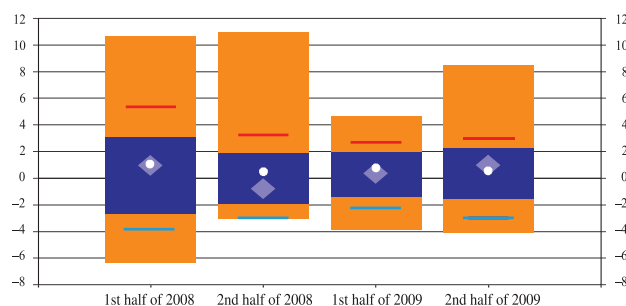


increase by 200 basis points on net annual interest income would be in the range between -1.6% $\{-1.9\%$ and 2.2% $\{1.9\%$ of bank's own funds.

Chart 46

**SHORT-TERM SENSITIVITY ANALYSIS:
CUMULATIVE IMPACT OF INTEREST RATE
INCREASE BY 200 BASIS POINTS ON THE
ANNUAL NET INTEREST INCOME OF
LATVIAN BANKS IN BREAKDOWN
BY BANKS**
(% of own funds)

■ Minimum – maximum range
 ■ Interquartile
 ◆ Median
 ○ Weighted average
 — 90th percentile
 — 10th percentile



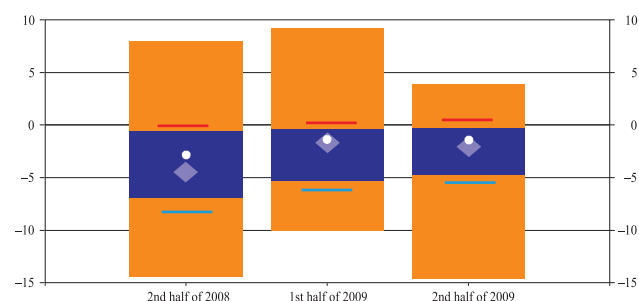
The sensitivity analysis that is based on a bank's economic value⁴⁷ is appropriate for evaluating interest rate risks over longer horizons, while it takes into consideration the effect of interest rate movements both on interest rate instruments as well as on bank's payment flows in general.

Economic value-based sensitivity analysis indicates that at the end of 2009 the decline of the economic value of Latvian banks⁴⁸, triggered by sudden unexpected interest rate changes in non-tradable portfolio, would be about 1.4% $\{2.9\%$ of banks' own funds, suggesting a relatively small exposure of Latvia's banks to interest rate risk in the long-term.⁴⁹ In the breakdown by banks, at the end of 2009 the maximum increase of the economic value in case of interest rate increase by 200 basis points would amount to 3.9% $\{8.0\%$ of the banking sector's own funds, whereas the maximum decrease would be 14.6% $\{14.4\%$ of own funds (see Chart 47). The interquartile range demonstrates that for half of the banks the effect of interest rate increase by 200 basis points on the economic value would be in the range between -0.3% $\{-0.6\%$ and -4.7% $\{-6.9\%$ of bank's own funds.

Chart 47

**SENSITIVITY ANALYSIS: CUMULATIVE
IMPACT OF INTEREST RATE INCREASE
BY 200 BASIS POINTS ON THE ECONOMIC
VALUE OF LATVIAN BANKS IN
BREAKDOWN BY BANKS**
(% of own funds)

■ Minimum – maximum range
 ■ Interquartile
 ◆ Median
 ○ Weighted average
 — 90th percentile
 — 10th percentile



⁴⁷ A bank's economic value is discounted net future cash flow generated by claims and liabilities that are both on and off the bank's balance sheet.

⁴⁸ The FCMC Regulations on the Management of Interest Rate Risk, Preparation of a Report on the Calculation of Economic Value Decline and of a Report on the Term Structure of Interest Rate Risk stipulated that the decline of a bank's economic value is calculated applying the modified duration method, taking into account the parallel rate shock at 200 basis points set by the FCMC and assuming that the assets or liabilities mature in the middle of the respective time-band and the average yield of financial instruments is 5%.

⁴⁹ CEBS guidelines (Technical aspects of the management of interest rate risk arising from non-trading activities under the supervisory review process, CEBS, 3 October 2006) stipulate that a supervisor shall pay extra attention and possibly call for additional capital where a bank's economic value has declined by more than 20% of own funds.

5. OPERATIONAL RISKS IN NBFS

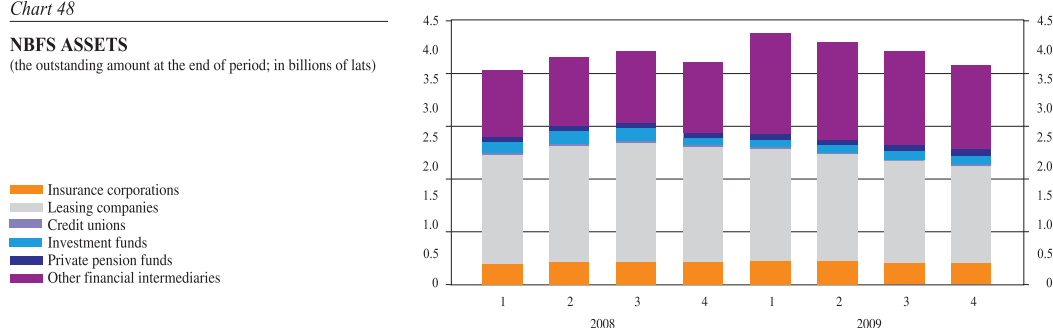
Given the relatively insignificant role of the NBFS in the financial system, it does not on the whole represent material risks to the stability of the financial system. In 2009, recovery of the global financial market had a positive impact on the NBFS institutions, whose principal activity was related to investment. At the same time, the activity of the NBFS institutions, whose principal activity was related to lending continued to contract, – this tendency was observed already in the second half of 2008. The non-life insurance sector was also affected by the economic downturn, the fall in personal income and the pessimistic outlook.

Overall, the NBFS assets did not post a significant decrease in 2009 in comparison with the previous year, as the assets of investment funds, pension funds and the life insurance sector increased gradually and those of other financial intermediaries grew in the first quarter attracting additional funds from investors (see Chart 48).

Chart 48

NBFS ASSETS

(the outstanding amount at the end of period; in billions of lats)



In 2009, the role of the NBFS in the financial sector increased somewhat; however, it can still be assessed as insignificant. With NBFS assets increasing by 491.2 million lats in the first quarter, the share of NBFS assets in the financial sector reached an unusually high level (16.2%), which exceeded the level observed at the end of 2008 by 2.1 percentage points. However later, with the amount of NBFS assets decreasing more rapidly than that of the banking sector, the share of NBFS assets in the financial sector shrank (14.7% at the end of 2009).

In 2009, leasing companies and those financial intermediaries, whose principal activity was related to granting loans, retained a predominant role in the NBFS. Although the share of leasing companies' assets in the total NBFS assets shrank rapidly (by 7.1 percentage points; to 44.7%), it was offset by the growing share of other financial intermediaries' assets (by 6.5 percentage points; to 38.3%). Thus, at the end of 2009, assets of the said NBFS sub-sectors reached 83.0% of the total NBFS assets (only 1.0 percentage points less than at the end of 2008). The role of leasing companies in the NBFS weakened, as in 2009, their assets shrank by 15.1% along with the economic downturn, the banks' tightening lending policy and the risk revision. Assets of other financial intermediaries increased by 18.5% in 2009 (representing a rapid increase in assets in the first quarter and a fall in assets in the coming quarters similarly to leasing companies).

At the end of 2009, the outstanding amount of leasing and factoring loans granted by leasing companies was 30.8% lower year-on-year (1.3 billion lats). Leasing loans, which dominated the overall portfolio, shrank by 28.3% (to 1.2 billion lats), whereas the small outstanding amount of factoring loans – by 50.6% (to 104.8 million lats; see Chart 49). Thus of the leasing companies' credit portfolio, leasing and factoring loans accounted for 92.0% and 8.0% respectively at the end of 2009. The role of financial leasing loans in the overall leasing companies' portfolio continued to grow with their outstanding amount shrinking at a lower rate than that of operative leasing loans (by 27.2% and 36.2% respectively). The share of financial leasing loans in the overall leasing loan portfolio increased from 87.7% at the end of 2008 to 89.1% at the end of 2009. The majority of factoring loans (92.4%) were with a maturity of 6 months to one year, but more than a half (51.2%) of financial leasing loans were with a maturity of over five years.

Loans granted in euro (94.6%) dominated the NBFS credit portfolio. The financial leasing loan portfolio to resident non-financial corporations in the breakdown by main economic sectors shows that the outstanding amount of leasing loans to the household sector and the majority of sectors of the economy shrank substantially in 2009 (see Chart 50).

Chart 49

LEASING COMPANIES' LEASING AND FACTORING LOAN PORTFOLIO

(the outstanding amount at the end of period; in billions of lats)

■ Financial leasing loans
■ Operative leasing loans
■ Factoring loans

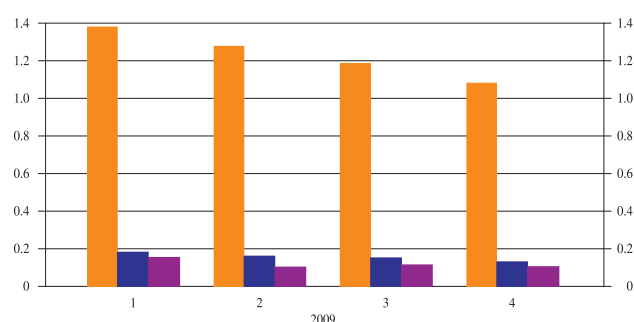


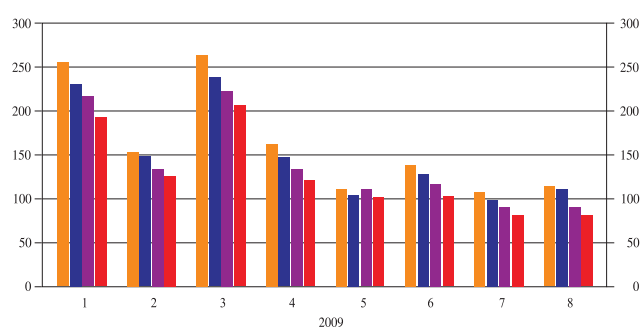
Chart 50

FINANCIAL LEASING LOANS TO RESIDENT NON-FINANCIAL CORPORATIONS IN THE BREAKDOWN BY SECTORS OF NATIONAL ECONOMY

(in millions of lats)

1. Transport, storage and communication
 2. Manufacturing
 3. Households
 4. Trade
 5. Agriculture, forestry and fishing
 6. Community, social and personal service activities
 7. Construction
 8. Other sectors

■ Q1
■ Q2
■ Q3
■ Q4



Of the overall financial leasing loan portfolio, most of funds were granted to transport and storage, and information and communication services, whose share has increased by 0.7 percentage point (to 18.4% of the total financial leasing loans) at the end of 2009 in comparison with other sectors. The share of manufacturing (one of the major sectors in the leasing loan portfolio) in the overall financial leasing loan portfolio to residents also increased by 0.7 percentage point (to 12.2%), but that of the trade sector decreased by 1.3 percentage points (to 11.5%). The share of financial leasing loans to households was also considerable. The outstanding amount of financial leasing loans to natural persons decreased by 29.2% and accounted for 19.7% of the overall financial leasing loan portfolio at the end of 2009 (0.4 percentage point less year-on-year).

Assets of both life and non-life insurance corporations contracted by 8.6% in 2009. As projected, the fall in personal income and the decline in real estate and car market on account of the economic downturn accounted for the decrease in non-life insurance assets dominating the insurance market. At the same time, as the global financial markets recovered, life insurance assets increased by 10.2%. Thus the share of insurance corporations' assets in the total NBFS assets contracted by 0.7 percentage point, reaching 9.6% at the end of 2009.

Following a sharp drop in the previous year, investment fund assets increased by 24.6%. Thus their share in the total NBFS assets expanded by 0.7 percentage point, reaching 4.5% at the end of 2009. With the situation in the global financial market improving, when increased availability of cheap financial resources, market participants' optimism and risk appetite resulted in a price rise of risk assets, including shares, oil and metal, the value of investment funds could grow.

Although the situation in the global financial markets was favourable, the fall in personal income in the domestic market limited the growth potential of the private pension funds. All pension plans gained profit. Overall, their assets increased by 17.8% in 2009 – the growth rate was slightly higher than in the previous year, but still about two times lower than prior to the crisis. In 2009, the number of passive members (people, who had made no contributions to the fund within the last 12 months, but had not yet reached the retirement age) of the third pillar of the pension system increased significantly (by 36.0%). At the same time, the number of active members decreased by 6.7%.

6. FINANCIAL INFRASTRUCTURE

6.1 Payment systems

The Bank of Latvia assessed systemic risk in the following Bank of Latvia's payment systems in 2009: the SAMS, the EKS and TARGET2-Latvija. Three indicators were applied by the Bank of Latvia to assess systemic risk: 1) the share of the payment systems in the respective payment segment; 2) concentration ratio – the share of the five largest participants in the system and 3) the netting effect ratio (the efficiency of using settlement funds in the payment systems).

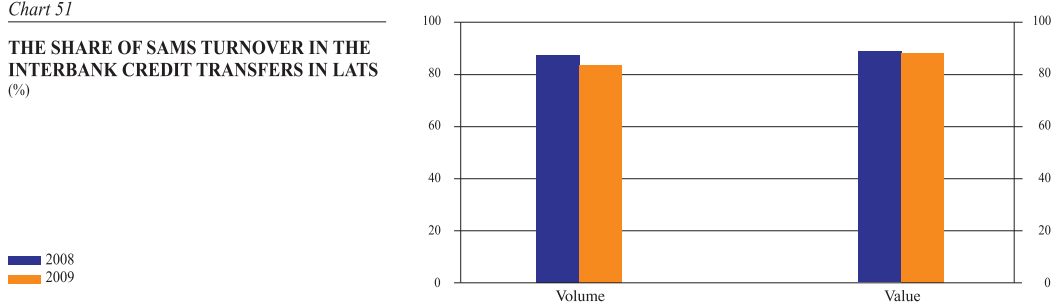
The SAMS

The SAMS is a large-value real-time gross settlement system for payments in lats used for interbank payments, settlement of monetary operations, retail payment system and securities settlement system settlement as well as for executing urgent or large-value customer payments. Hence, the SAMS is mainly described by value ratios.

In 2009, 78.7 thousand interbank payments were processed via the SAMS and their value stood at 151.3 billion lats, thus representing 83.8% and 88.2% of interbank credit transfers effected in lats in terms of volume and value respectively (see Chart 51). The Latvian bank credit transfers handled via correspondent banking arrangements accounted for the residual share.

Chart 51

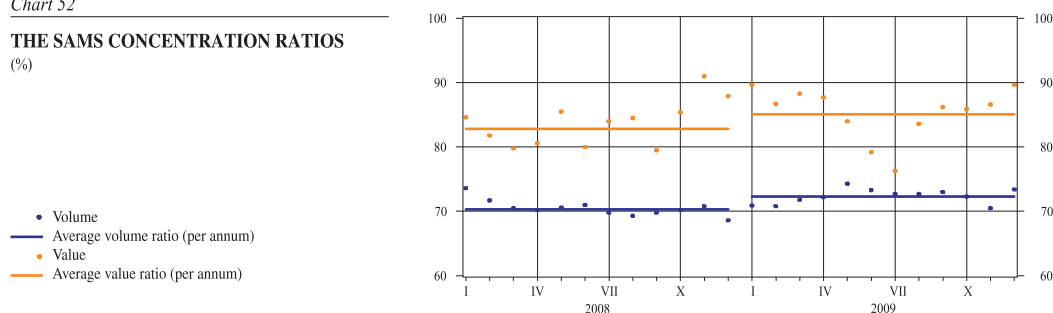
THE SHARE OF SAMS TURNOVER IN THE INTERBANK CREDIT TRANSFERS IN LATS (%)



Year-on-year, the volume concentration ratio of SAMS rose from 70.3% to 72.3% in 2009 and the value concentration ratio increased from 82.8% to 85.1% (see Chart 52). The rise in the value concentration ratio of SAMS was mostly on account of expanding amount of the Bank of Latvia's transactions, with the Bank of Latvia promoting further stabilisation of financial situation through monetary policy operations. Notwithstanding the fact that the value concentration ratio of SAMS exceeds the limit stipulated by the ECB (80%), this development does not indicate a probability of any significant domino effect in the system, as one of the system's five largest participants is the Bank of Latvia, which is not exposed to any liquidity and credit risk.

Chart 52

THE SAMS CONCENTRATION RATIOS (%)



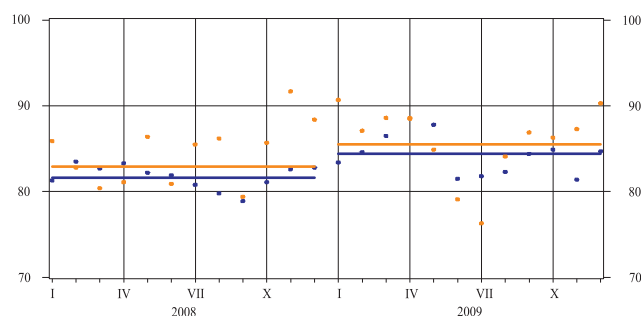
The value of interbank payments effected via the SAMS diminished by 7.7% (to 151.3 billion lats) in 2009, and that of customer payments dropped by 14.3% (to 11.0 billion lats). The volume of interbank payments shrank by 8.5% (to 78.7 thousand) and that of customer payments decreased by 29.9% (to 98.6 thousand). The share of the two payment types was 44.4% (interbank) and 55.6% (customer) in terms of volume and 93.2% and 6.8% in that of value respectively.

In 2009, the value concentration ratio of bank payments (85.5%) exceeded that of the customer payments by 1.1 percentage points (84.4%; see Chart 53). The concentration ratio of the two payment types recorded a minor rise year-on-year.

Chart 53

**THE SAMS PAYMENT VALUE
CONCENTRATION RATIOS**
(%)

- Customer payments
- Average customer payment ratio (per annum)
- Bank payments
- Average bank payment ratio (per annum)



In addition to the concentration ratio and the share of a payment system in the respective segment, systemic risk or a probability of the so-called domino effect is influenced by the efficiency of using settlement funds in the systems, described in the gross settlement systems by the share of funds used for settlements in the accounts balance.

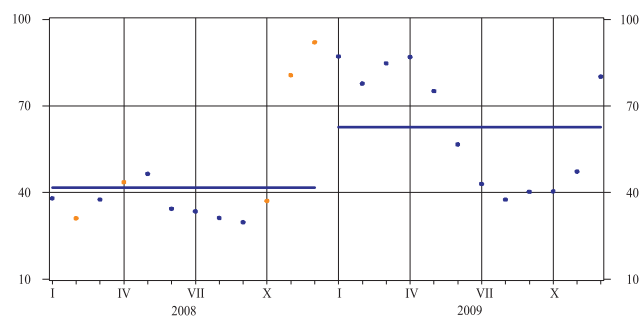
The respective efficiency indicator is calculated as the ratio of bank payments sent via the SAMS to the average balance on the bank accounts with the Bank of Latvia. The monthly average balance of the above accounts is affected by the minimum reserve ratio set by the Bank of Latvia (3% for bank liabilities with a maturity of over two years and 5% for bank liabilities with a maturity of up to two years). In 2009, the above ratio remained unchanged in contrast to 2008, when it was reduced on five occasions. Deposit facility rate (compensation) and the charge for non-compliance with the minimum reserve requirements were only changed, but the amount of the minimum reserve requirements was not thus affected.

In 2009, the average balance on the credit institution accounts with the Bank of Latvia was 45.8% smaller year-on-year due to a lower average reserve ratio over the year, but since the value of credit institution payments in the SAMS declined less than the account balance (by 18.6%), the efficiency of the settlement fund use in the SAMS rose on the whole from 41.7% in 2008 to 62.6% in 2009 (see Chart 54), i.e. funds held in accounts were used 0.6 times in payments via SAMS.

Chart 54

**THE EFFICIENCY OF USING SETTLEMENT
FUNDS IN THE SAMS**
(%)

- Monthly ratio
- Monthly ratio (amended reserve requirements)
- Average ratio (per annum)



The three indicators of the systemic risk assessment showed that the SAMS was a system providing an efficient and safe payment environment to its participants and the entire financial system in 2009.

The EKS

The EKS is a net settlement system processing retail payments in lats (also in euro since 2008) and ensuring two clearing cycles daily (i.e. settlements are executed twice a day). The EKS is used for processing retail payments; hence it is mainly described by payment volume ratios.

In 2009, 31.8 million payments were processed via the EKS and their value amounted to 10.2 billion lats, thus representing, in terms of volume and value, 75.1% and 72.8% of retail credit transfers made among banks in lats respectively (in 2008 – 75.2% and 71.0% respectively; see Chart 55). Mutual gross settlements of retail credit transfers made by some banks of Latvia accounted for the residual share.

The volume concentration ratio (79.6%) of the payments handled by the EKS in lats in 2009 recorded a moderate year-on-year increase (78.1% in 2008; see Chart 56). The concentration of payments in terms of value executed via the EKS in lats also expanded somewhat (from 77.4% in 2008 to 79.1% in 2009). The concentration ratio of the lats settlements via the EKS in 2009 was lower than the limit set by the ECB

Chart 55

THE SHARE OF TURNOVER OF EKS LATS SETTLEMENTS IN CUSTOMER INTERBANK CREDIT TRANSFERS IN LATS (%)

■ 2008
■ 2009

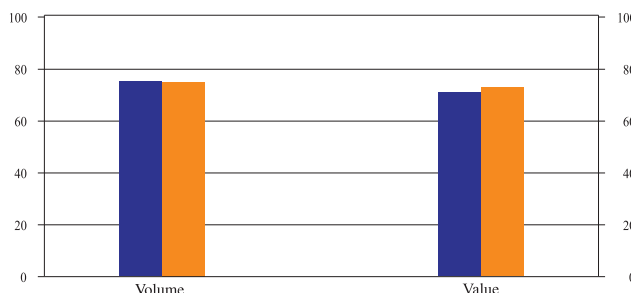
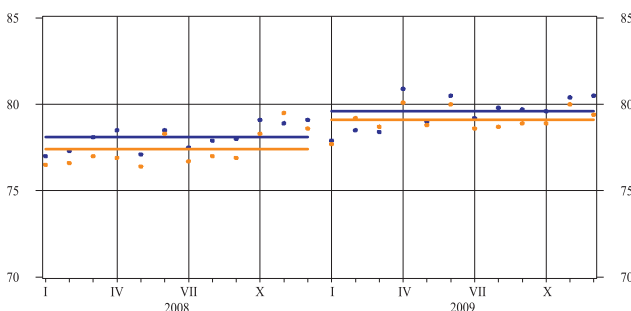


Chart 56

CONCENTRATION RATIOS OF PAYMENTS VIA EKS IN LATS (%)

● Volume
— Average volume ratio (per annum)
● Value
— Average value ratio (per annum)



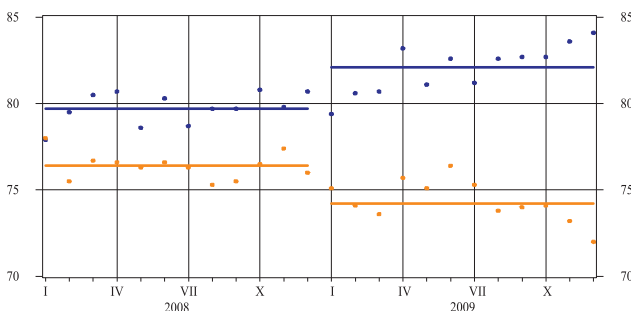
(80%) both in terms of volume and value. In 2009, the total volume of lats payments executed in the EKS diminished by 1.4 million or 4.3% (to 31.8 million) and value dropped by 2.9 billion lats or 22.1% (to 10.2 billion lats).

Of total payments made in lats, 67.9% of the volume and 57.2% of the value of payments handled in both clearing cycles in lats were processed in the first clearing cycle of the lats settlements executed via the EKS in 2009. In the first clearing cycle, 21.6 million payments amounting to 5.8 billion lats were processed and in the second cycle, 10.2 million payments in the amount of 4.4 billion lats were handled in 2009. Of the lats payments executed in the EKS, the total volume of payments rose by 0.1% and value shrank by 18.5% in the first clearing cycle, while in the second clearing cycle the volume of payments dropped by 12.5% and value decreased by 26.4% in comparison with 2008. As a retail payment system, the EKS is primarily described by payment volume ratios. A comparison of the payment volume concentration ratios of both clearing cycles of payments made in lats (see Chart 57) showed that in the first clearing cycle the volume concentration ratio was by 7.9 percentage points higher than that of the second clearing cycle (82.1% and 74.2% respectively) in 2009. Moreover, the ratio of the second clearing cycle followed a downward trend, while that of the first clearing cycle increased. The functionality of the EKS ensuring the payment settlement in the second clearing cycle in case the payment is not settled in the first clearing cycle, contributes to mitigating the impact of concentration ratio of the first clearing cycle on the systemic risk.

Chart 57

VOLUME CONCENTRATION RATIOS OF PAYMENTS VIA EKS IN LATS (%)

● Ratio of the first clearing cycle
— Average ratio of the first clearing cycle (per annum)
● Ratio of the second clearing cycle
— Average ratio of the second clearing cycle (per annum)



The efficiency of using settlement funds in payment systems determines systemic risk in addition to the concentration ratio and the share of a payment system.

The efficiency of using settlement funds in the net settlement systems, including the EKS, is described by the netting effect ratio, i.e. the system participants' net debit positions as a percentage of the system's gross transactions value. According to the ECB methodology, where the system's netting effect ratio is below

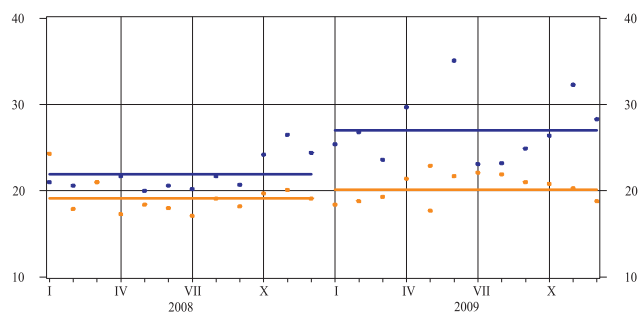
10%, the system is deemed to be highly efficient – with high netting effect, i.e. the majority of transactions are mutually offset (netting) and the system's participants do not need additional liquidity on their accounts. In the event of settlement errors, high netting effect may, however, become a significant risk as the system participants incur additional obligations which may trigger liquidity risk and credit risk expansion in the system. Of the payments made in the EKS in lats, the netting effect ratios of the first and second clearing cycles were 27.0% and 20.1% in 2009 respectively (see Chart 58). Hence, neither a significant netting risk to the payments executed in lats, nor its expansion was identified. The value of net settlement positions of payments effected in lats increased by 0.2% in the first clearing cycle and decreased by 22.5% in the second clearing cycle, and the value of payments executed in lats via the EKS shrank by 18.5% in the first clearing cycle and dropped by 26.4% in the second clearing cycle. Thus, of payments executed in lats, the netting effect ratio of the first clearing cycle rose by 5.1 percentage points year-on-year and that of the second clearing cycle increased by 1.0 percentage points.

Chart 58

THE NETTING EFFECT RATIOS OF PAYMENTS VIA EKS IN LATS (%)

(%)

- Ratio of the first clearing cycle
- Average ratio of the first clearing cycle (per annum)
- Ratio of the second clearing cycle
- Average ratio of the second clearing cycle (per annum)



Since the value of net debit positions of payments executed by the EKS participants in lats was minor in 2009 compared with the balance on the bank accounts with the Bank of Latvia (on average 0.7%), the netting effect created no need for additional funds in lats (liquidity risk) in the system.

The processing of retail payments via the EKS in euro has been launched as of 2008. The above operation enables the EKS participants to settle retail payments made in euro among Latvia's banks within one day – similar to the payments executed in lats.

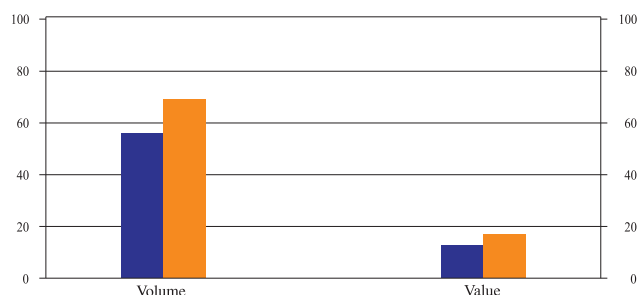
In 2009, 252.5 thousand payments in euro were processed in the EKS in the total amount of 1.3 billion euro, i.e. they constituted 6.9% in terms of volume and 1.7% in terms of value of all customer credit transfers effected in euro (the above share amounted to 5.6% and 1.3% respectively in 2008; see Chart 59).

Chart 59

THE SHARE OF TURNOVER OF EKS EURO SETTLEMENTS IN CUSTOMER CREDIT TRANSFERS IN EURO (%)

(%)

- 2008
- 2009



The volume concentration ratio of the payments made in the EKS in euro was 71.3% and the value concentration ratio amounted to 68.2% in 2009 (76.8% and 73.3% respectively in 2008; see Chart 60). The annual concentration ratios of the payments executed in euro were lower than the limit set by the ECB (80%).

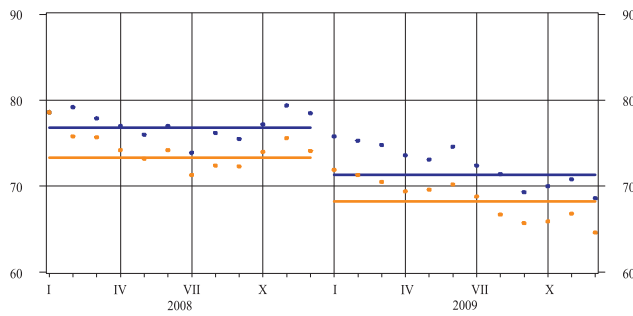
The volume of payments effected in the EKS in euro rose by 28.6 thousand or 12.8%, while the value declined by 175.6 million or 11.7% in 2009.

In 2009, of payments made in euro, 160.6 thousand payments in the value of 784.9 million euro were processed in the first clearing cycle and 91.9 thousand payments in the value of 538.9 million euro were handled in the second clearing cycle. Of the euro payments executed in the EKS, the total volume of payments

Chart 60

CONCENTRATION RATIOS OF PAYMENTS VIA EKS IN EURO
(%)

• Volume
— Average volume ratio (per annum)
• Value
— Average value ratio (per annum)



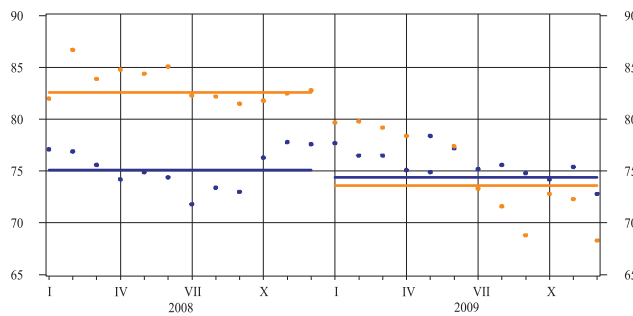
expanded by 28.0% and value dropped by 1.7% in the first clearing cycle, while in the second clearing cycle the volume of payments shrank by 6.6% and value diminished by 23.1% in comparison with 2008.

In 2009, 63.6% of total payments executed in euro and 59.3% of the value of payments handled in both clearing cycles in euro were processed in the first clearing cycle via the EKS. Hence, of payments made in euro, most payments were processed in the first clearing cycle both in terms of volume and value. In terms of both volume (73.6%) and value (71.7%), the annual concentration ratios of the second clearing cycle in 2009 were broadly similar to those of the first clearing cycle (74.4% and 71.1% respectively; see Chart 61). In 2009, the volume concentration ratios of the first and second clearing cycles grew notably similar, with the concentration ratio of the second clearing cycle declining.

Chart 61

VOLUME CONCENTRATION RATIOS OF PAYMENTS VIA EKS IN EURO
(%)

• Ratio of the first clearing cycle
— Average ratio of the first clearing cycle (per annum)
• Ratio of the second clearing cycle
— Average ratio of the second clearing cycle (per annum)

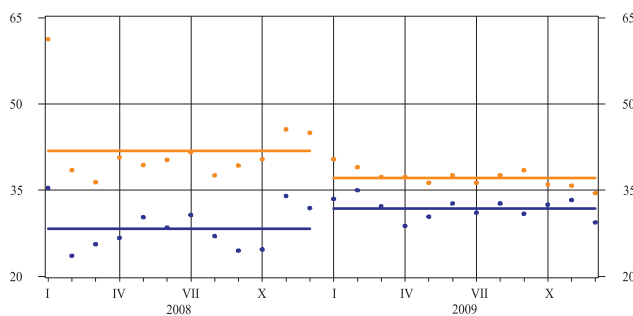


Of the payments made in the EKS in euro, the netting effect ratios of the first and second clearing cycles grew more similar and were 31.8% and 37.1% in 2009 respectively (28.3% and 41.8% in 2008 respectively; see Chart 62). Hence, a significant netting risk was not identified in 2009. The value of payments executed in euro via the EKS shrank by 1.7% in the first clearing cycle and dropped by 23.1% in the second clearing cycle in 2009, while the value of net positions of payments effected in the first clearing cycle expanded by 10.7% and diminished by 31.7% in the second clearing cycle. Hence, of payments executed in euro, the netting effect ratio of the first clearing cycle recorded a year-on-year rise of 3.5 percentage points in 2009, while that of the second clearing cycle decreased by 4.7 percentage points.

Chart 62

THE NETTING EFFECT RATIOS OF PAYMENTS VIA EKS IN EURO
(%)

• Ratio of the first clearing cycle
— Average ratio of the first clearing cycle (per annum)
• Ratio of the second clearing cycle
— Average ratio of the second clearing cycle (per annum)



Since the value of the net debit position of payments executed by the EKS participants in euro was minor in 2009 in comparison with the balance on the participants' settlement accounts with the Bank of Latvia in euro (on average 5.6%; in 2008 – 8.4%), the netting effect created no need for additional funds in euro (liquidity risk) in the system.

Applying the indicators of the systemic risk assessment to the EKS operation (for payments executed in lats and euro), it was identified in 2009 that the EKS ensured an efficient and safe payment environment to its participants and the entire financial system.

TARGET2-Latvija

TARGET2-Latvija, a component of the Trans-European Automated Real-time Gross Settlement Express Transfer system, has been operating in Latvia since November 2007.

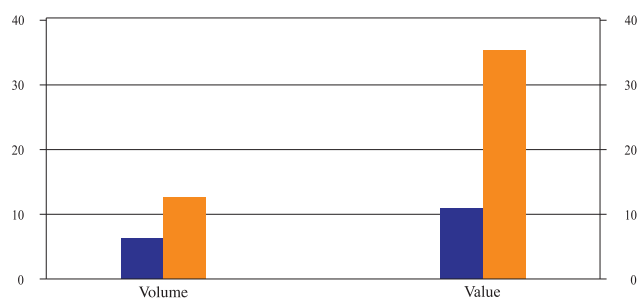
TARGET2-Latvija is a large-value real-time gross euro settlement system used for interbank payments in euro as well as for executing urgent and large-value customer payments.

In 2009, 32.2 thousand interbank payments were processed via TARGET2-Latvija and their value stood at 193.5 billion euro, thus representing 12.6% and 35.4% of interbank credit transfers effected in euro in terms of volume and value respectively (see Chart 63). The Latvian bank credit transfers handled via correspondent banking arrangements accounted for the residual share. A comparison of the above ratios and the data of 2008 shows an increase, in particular, in the share of TARGET2-Latvija value (6.4% and 10.9% respectively).

Chart 63

THE SHARE OF TARGET2-LATVIJA TURNOVER IN THE INTERBANK CREDIT TRANSFERS IN EURO (%)

■ 2008
■ 2009

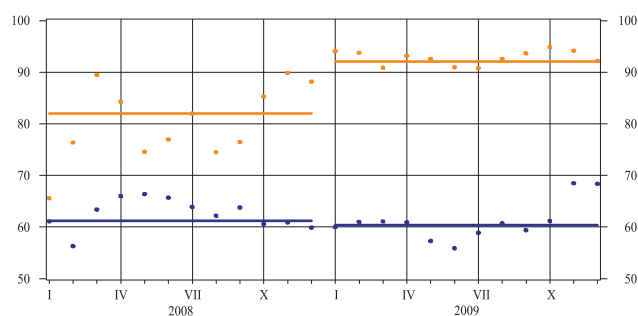


The volume concentration ratio of TARGET2-Latvija amounted to 60.4% and the value concentration ratio stood at 92.1% in 2009 (see Chart 64). The volume concentration ratio of TARGET2-Latvija exceeds the limit stipulated by the ECB (80%), nevertheless, this development does not point to a probability of any significant domino effect in the system, as one of the system's five largest participants is the Bank of Latvia.

Chart 64

TARGET2-LATVIJA CONCENTRATION RATIOS (%)

● Volume
— Average volume ratio (per annum)
● Value
— Average value ratio (per annum)



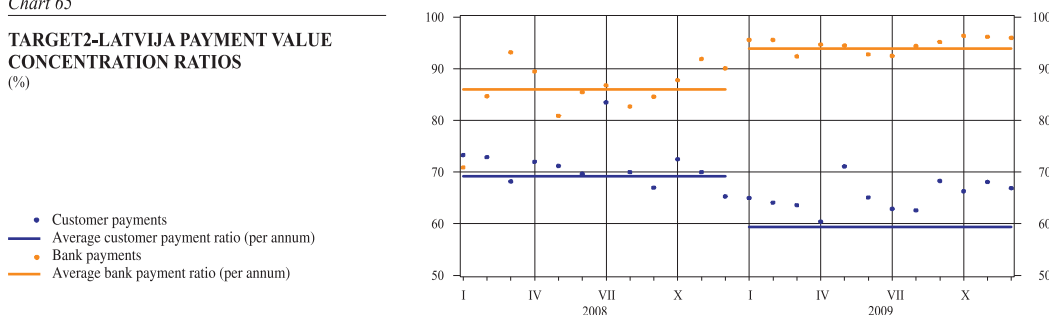
The value of interbank payments processed in TARGET2-Latvija increased 3.1 times (to 193.5 billion euro) in 2009, and that of customer payments declined by 12.8% (to 5.7 billion euro). The share of the two payment types was 20.3% (interbank) and 79.7% (customer) in terms of volume and 97.1% and 2.9% in that of value respectively. In 2009, the value concentration ratio of interbank payments (93.9%) exceeded that of the customer payments by 34.5 percentage points (59.4%; see Chart 65). The volume concentration ratio (62.6%) of bank payments was 3.1 percentage points lower than that of customer payments (65.7%) in 2009. The value concentration ratio of customer payments declined and that of interbank payments expanded year-on-year.

The volume of interbank payments rose by 48.2%, reaching 32.2 thousand, and that of customer payments grew by 6.5% (to 126.5 thousand) year-on-year.

The efficiency of using settlement funds in TARGET2-Latvija has been calculated as the ratio of payments sent by the participants via TARGET2-Latvija to the average balance on the participants' euro accounts with

Chart 65

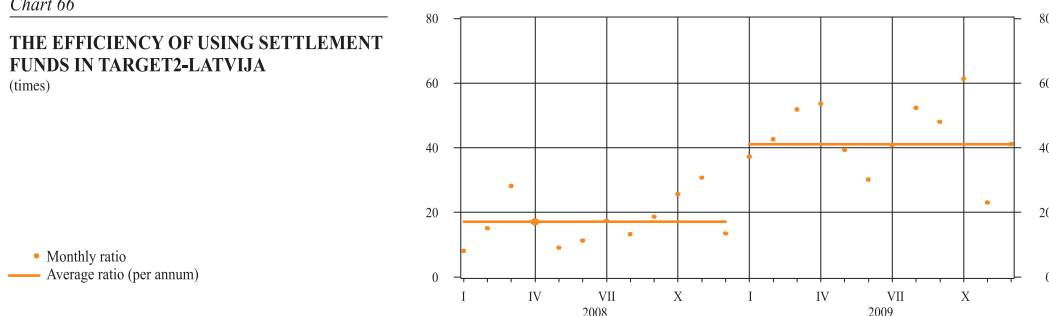
TARGET2-LATVIJA PAYMENT VALUE CONCENTRATION RATIOS (%)



TARGET2-Latvija. In 2009, funds held in accounts were on average used 41.1 times in payments via TARGET2-Latvija (see Chart 66; the balance on the Bank of Latvia's account is not taken into account in the calculation). In contrast to the accounts with the SAMS where also minimum reserves are held in addition to the funds needed for settling day-to-day payments, such a relatively high efficiency ratio of TARGET2-Latvija settlements can be attributed to the fact that the participants deposit funds in the accounts with TARGET2-Latvija only to execute day-to-day payments. The participants' average balance on the euro accounts with TARGET2-Latvija expanded by 18.9% in 2009, however, this development on the whole accounted for an increasing efficiency of settlement fund use in TARGET2-Latvija since the payment value rose 2.9 times (to 200.5 billion euro) in TARGET2-Latvija.

Chart 66

THE EFFICIENCY OF USING SETTLEMENT FUNDS IN TARGET2-LATVIJA (times)



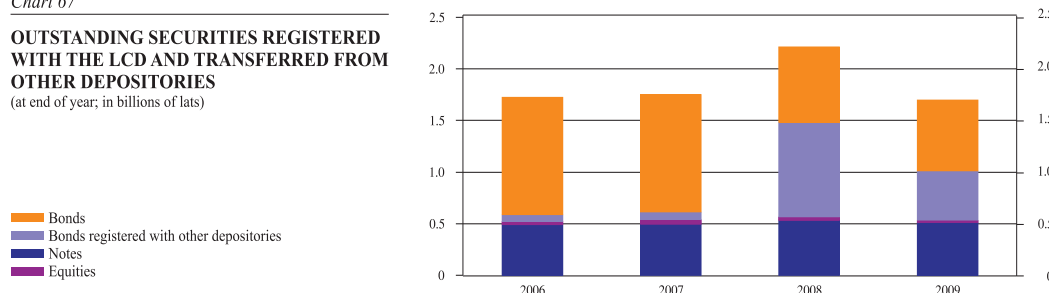
TARGET2-Latvija ensured an efficient and safe payment environment to its participants and the entire financial system in 2009.

6.2 Securities Settlement Systems

The LCD and the Bank of Latvia continued to ensure smooth functioning of securities settlement systems in 2009. Securities amounting to 1.7 billion lats were recorded in the LCD at the end of 2009 (0.5 billion lats lower year-on-year; see Chart 67). The notable fall was on account of declining amount of notes (almost twice; to 477.7 million lats) recorded in the LCD. The above changes are attributable to a substantial drop in the outstanding government securities as the large-scale issues of late 2008 were redeemed in order to stabilise the financial system of Latvia.

Chart 67

OUTSTANDING SECURITIES REGISTERED WITH THE LCD AND TRANSFERRED FROM OTHER DEPOSITORIES (at end of year; in billions of lats)



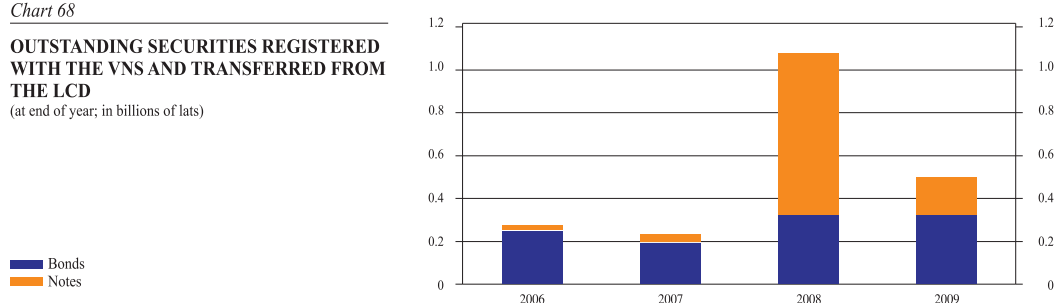
At the end of 2009, 29.8% of securities recorded in the LCD were held in the securities accounts with the VNS. The amount of securities recorded in the VNS shrank more than twofold in comparison with the end of 2008, since the banks' liquidity amplified and the need to participate in the Bank of Latvia's monetary

operations where the securities recorded in the LCD are accepted as collateral for the Bank of Latvia's monetary policy instruments minimised. Outstanding securities recorded in the VNS amounted to 500.1 million lats at the end of 2009, of which, the Treasury bills were in the amount of 179.9 million lats, Treasury bonds stood at 308.5 million lats and private sector debt securities – 11.7 million lats (see Chart 68). The amount of bonds remained unchanged, while that of notes shrank more than four times over the year.

Chart 68

OUTSTANDING SECURITIES REGISTERED WITH THE VNS AND TRANSFERRED FROM THE LCD

(at end of year; in billions of lats)

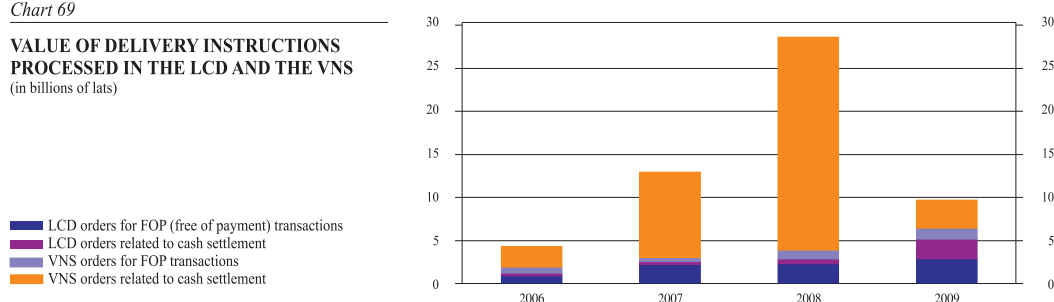


Outstanding securities in the VNS declining, the value of delivery instructions processed by the VNS diminished substantially, while that of the delivery instructions processed in the LCD expanded at the same time. This development was supported by expanding activities on the market of shorter-term Treasury bills (see Chart 69).

Chart 69

VALUE OF DELIVERY INSTRUCTIONS PROCESSED IN THE LCD AND THE VNS

(in billions of lats)



In 2009, the Bank of Latvia continued to participate, within the oversight of securities system, in the working group of the ESCB and the Committee of European Securities Regulators (CESR) and contributed to preparing "Recommendations for Securities Settlement Systems and Central Counterparties in the European Union" (hereinafter, the Recommendations). The final version of the Recommendations was published on 23 June 2009 (<http://www.ecb.int/press/pr/date/2009/html/pr090623.en.html>). The Recommendations are binding on the overseers of securities settlement systems of central banks and securities market regulators of the EU Member States, who will apply them to the oversight of the EU securities settlement systems and central counterparties and assessment of the respective operation. The above Recommendations seek to enhance security, confidence, efficiency, interoperability and transparency of information with respect to the operation of the securities settlement systems and central counterparties as well as promote a level playing-field. The Bank of Latvia will apply the Recommendations to the oversight of the securities settlement systems and in cooperation with the FCMC intends to conduct the assessment of the above systems by the end of 2011.

The LCD was among those 27 Central Depositories of Europe who entered into the TARGET2-Securities Memorandum of Understanding (hereinafter, the Memorandum of Understanding) with the European System of Central Banks on 16 July 2009. The purpose of the Memorandum of Understanding is to formalise mutual contribution made by Central Depositories and the Eurosystem to the TARGET2-Securities (hereinafter, T2S) Project as well as agree on mutually favourable terms and conditions for participation in T2S, which after negotiating an arrangement are to be certified by an agreement between each depository and the Eurosystem. The Memorandum of Understanding stipulates specific requirements for the LCD, such as drafting a high level plan TARGET2-Securities Implementation in Latvia (hereinafter, T2S Plan) as well as furnishing other required information. The Bank of Latvia took part in the assessment of T2S Plan drafted by the Latvian National User Group of T2S and presented proposals for the timeframe of activities outlined in T2S Plan and the respective procedure. In September 2009, the LCD submitted the T2S Plan on behalf of the above group to the Governing Council of the ECB representing the Eurosystem in T2S Project.

APPENDIX. BANKING SECTOR PERFORMANCE INDICATORS

	Subsidiaries of the bank groups of EU15 countries					Other banks				
	2005	2006	2007	2008	2009	2005	2006	2007	2008	2009
Balance sheet items										
Total assets (in millions of lats)	5 759.6	9 161.8	12 383.5	13 736.8	13 138.2	5 183.3	6 745.5	9 532.5	9 506.6	8 540.1
Share of loans in total assets (%)	81.5	81.4	81.1	83.3	81.2	43.7	50.7	51.1	54.1	55.7
Share of deposits in liabilities (%)	42.3	36.1	31.6	28.6	29.9	72.6	65.9	65.7	61.3	65.8
Share of liabilities to MFIs in liabilities (%)	46.3	52.9	56.7	59.3	51.8	11.6	16.2	18.4	16.7	11.4
Loans to deposits ratio (%)	192.7	225.1	256.4	291.2	271.5	60.1	76.9	77.8	88.3	84.7
Leverage ratio (%) ¹	6.5	6.6	7.9	7.5	6.3	8.9	8.9	8.0	7.0	9.0
Profitability										
ROE (%) ²	12.5	11.4	13.5	5.7	-30.5	3.9	14.0	10.6	-2.1	-11.1
ROA (%) ³	1.0	0.9	1.2	0.4	-2.7	1.1	1.1	0.8	-0.2	-0.8
Cost-to-income ratio (%) ⁴	44.3	42.6	37.0	41.8	42.6	55.2	51.7	54.3	62.5	70.2
Profit margin (%) ⁵	52.3	52.0	61.3	27.0	-172.1	44.7	53.9	46.0	-5.7	-75.1
Capital adequacy										
CAR (%)	8.9	9.4	10.8	12.7	15.4	11.6	11.4	11.4	10.8	13.5
Tier 1 CAR (%)	7.4	7.7	9.5	11.6	11.8	10.7	10.6	10.3	8.8	11.0
Liquidity										
Liquidity ratio (%) ⁶	37.7	40.6	46.4	48.7	64.0	62.1	59.4	62.1	56.3	61.9
Liquid assets to total assets ratio (%) ⁷	13.8	14.9	15.5	13.0	14.1	41.0	36.0	37.4	34.0	31.8
Asset quality										
Share of specific provisions for loans to non-MFIs in the loan portfolio (%)	0.6	0.5	0.5	1.5	9.2	0.9	0.6	0.4	2.9	9.8
Share of loans past due over 90 days in the loan portfolio (%)	0.9	0.3	0.5	3.0	14.8	1.4	0.8	1.2	4.9	20.0

¹ The ratio of assets to capital and reserves.

² Annualised profit/loss ratio to average capital and reserves of the reporting period (data of foreign bank subsidiaries are not included in the calculation of the ratio).

³ Annualised profit/loss ratio to average assets of the reporting period.

⁴ Cost-to-income ratio = (operating costs + intangible and fixed asset depreciation and disposal)/(net interest income + income from dividends + net commissions and fees + profit/loss from trades of financial instruments + financial instrument revaluation result + other ordinary income - other ordinary expenditure + adjustment for impairment of available-for-sale financial assets) x 100.

⁵ Ratio of pre-tax profit to operating income.

⁶ Liquid assets as stipulated by the FCMC (vault cash; claims on the Bank of Latvia and solvent credit institutions whose residual maturity does not exceed 30 days, and deposits with other maturity, if a withdrawal of deposits prior to the maturity has been stipulated in the agreement; investment in financial instruments, if their market is permanent, unrestricted) must not be less than 30% of banks' total current liabilities with residual maturity under 30 days.

⁷ Liquid assets = vault cash + claims on central banks and other credit institutions + central government fixed income debt securities.