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**FINANCIAL STABILITY REPORT 2004**



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**2 • 2004**

## ABBREVIATIONS

CAR – capital adequacy ratio  
CIS – Commonwealth of Independent States  
ECB – European Central Bank  
EKS – Electronic Clearing System  
EU – European Union  
EU15 – EU countries before May 1, 2004  
FRS – US Federal Reserve System  
GAP – repricing gap or difference between interest rate sensitive assets and interest rate sensitive liabilities  
GDP – gross domestic product  
NPL – non-performing loans  
OPEC – Organization of the Petroleum Exporting Countries  
RIGIBID – Riga Interbank Bid Rate  
RIGIBOR – Riga Interbank Offered Rate  
ROA – return on assets  
ROE – return on equity  
RSA – interest rate sensitive assets  
RSL – interest rate sensitive liabilities  
SAMS – Interbank Automated Payment System  
SDR – Special Drawing Rights  
US – the United States of America  
VaR – the maximum expected losses over a certain period of time and with a given probability (Value-at-Risk)

*Sources: the Central Statistical Bureau of Latvia, the Financial and Capital Market Commission, the Latvian Leasing Association, LURSOFT (Database of the Republic of Latvia Register of Enterprises) and the Bank of Latvia.*

*Charts have been compiled on the basis of data provided by Reuters (Charts 1, 2 and 29), the Bank of Latvia (Charts 3–11, 17, 18, 21, 22, 37–41 and 43–53), the Financial and Capital Market Commission (Charts 19, 20, 23–27 and 30–32), the Central Statistical Bureau of Latvia (Chart 42) and the Latvian Leasing Association (Charts 43–45). Estimates by the Bank of Latvia experts have been reflected in Charts 12–16, 28 and 33–36. Tables have been compiled on the basis of data provided by the Bank of Latvia (Tables 1–5) and the Financial and Capital Market Commission (Table 5).*

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## EXECUTIVE SUMMARY

In the second half of 2004, Latvia's economic growth accelerated. The rise of inflation was driven by the supply side factors, including changes in tax rates, administered prices and higher fuel prices. In the second half of the year, food prices escalated as a result of unfavourable weather conditions and cost increases. In 2004, food prices contributed to about one third of the average increase of consumer prices. Buoyant economic growth in the new EU countries underpinned expansion of demand for Latvia's commodities on the external markets. Competitiveness of the commodities was sustainable, causing Latvia's exports to develop rapidly. Nevertheless, a high current account deficit persisted. The rise in the general government consolidated budget deficit was successfully contained primarily as a result of a rapid increase in tax revenue and moderate growth of expenditure.

High sectoral diversification of the banks' loan portfolio and robust economic growth suggests that the exposure to non-financial corporations has remained unchanged. Stress test results prove that Latvian banks would have no serious problems absorbing a potential credit risk increase resulting in an expansion of the NPLs by more than 4 times. The most serious financial vulnerability of Latvia's banks relates to the real estate market developments, including mortgage lending to households.

Taking into account the repegging of the lats from the SDR currency basket to the euro on January 1, 2005, a high share of the US dollar in total loans granted to households means increased foreign exchange risk for those households whose earnings are in currencies other than the US dollar. Credit risk relating to loans to non-residents was low, as the banks' exposure to those loans was insignificant. Moreover, such loans have been mainly granted to residents of countries of low or similar to Latvia risk rating.

With the lending expansion continuing and the number of the banks' customers and payment cards growing, the banks' profitability and cost efficiency ratios improved significantly.

The quality of banks' assets continued to improve under the impact of favourable economic conditions, improvement of risk management system and expanding loans. Specific provisions covered 99.1% of the NPLs.

The overall CAR remained unchanged in comparison with the end of 2003, with the capitalisation level of large banks slightly decreasing and that of small and medium-sized banks growing.

Banks' sensitivity to interest rate developments was low, pointing to banks' limited exposure to interest rate risk. The main factor restricting banks' interest rate risk is the granting of variable interest rate loans, as the market rate developments are priced into interest rates on bank loans in a relatively short period of time.

The banks' exposure to foreign exchange risk remained low and even shrunk in the second half of the year, as the banks changed the structure of their open currency positions adjusting to the pegging of the lats to the euro.

In the second half of 2004, the liquidity risk diminished slightly: liquid assets (claims on foreign credit institutions and demand claims on the Bank of Latvia) expanded rapidly, whereas demand liabilities to foreign banks decreased. Dependence on foreign banks' financing slightly increased, whereas the liquidity risk associated with non-resident deposits remained low and even slightly decreased, as a higher share of those assets was placed on correspondent accounts in foreign banks and invested in securities.

## 1. EXTERNAL ECONOMIC ENVIRONMENT AND ECONOMIC DEVELOPMENTS IN LATVIA

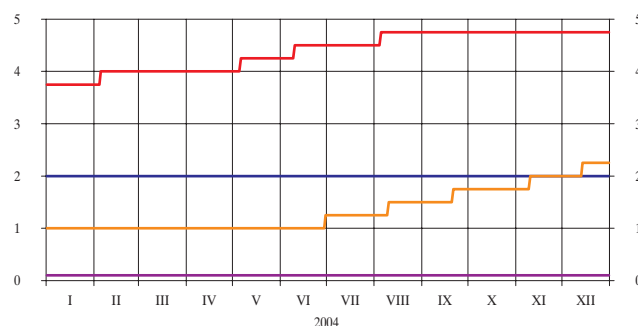
### External economic environment remained favourable, and Latvia's economic growth accelerated.

In the second half of 2004, the global economy continued to develop buoyantly. The Asian countries displayed a particularly high economic growth rate. The US also developed successfully, and its economic development was supported by private consumption and capital investment. The economic growth rate of the new EU countries moderated slightly, nevertheless, remaining high overall, with persistently robust domestic demand and exports on the rise. Improvement of the economic conditions notwithstanding, the economic development in the euro area remained moderate, whereas the economic growth of Japan decelerated. With the global economic environment improving, confidence of the financial markets that the major central banks, the FRS in particular, would pursue a tighter monetary policy strengthened. Thus, the FRS raised the base rate by 25 basis points on four occasions in the second half of 2004 to stand at 2.25% at the end of the year (see Chart 1). The Bank of England also raised the repo rate by 25 basis points (to 4.75%) on August 5, 2004. The ECB and the Bank of Japan, in turn, left the base rates unchanged continuing to pursue a monetary policy fostering the economic development in the second half of 2004. At the end of 2004, the ECB key rate remained at its historical low (2.00%), whereas the rate of the Bank of Japan was 0.10%.

Chart 1

#### BASE RATES OF THE MAJOR CENTRAL BANKS (%)

— FRS  
— ECB  
— Bank of Japan  
— Bank of England



Global economic growth was significantly dampened by an escalation of oil prices. A contributing factor was the risks associated with oil extraction and supply, including the geopolitical instability in the Middle East, uncertainty surrounding oil extraction in Russia, oil extraction disruptions in Nigeria and the North Sea, as well as shrinking oil supplies in the US as a result of damage caused by storms. Strengthening global demand for oil products also contributed significantly to the oil price rise. In October 2004, the US crude oil and European *Brent* crude oil prices reached a historical high at over 50 US dollars per barrel. In November, however, the oil prices dropped as the OPEC countries boosted their oil extraction volumes. The drop in oil prices was promoted by an increase in the US crude oil supplies to an average level, as the US oil industry recovered after the damages caused by storms in September. At the end of December, the oil prices returned to the level recorded in July 2004.

During the second half of 2004, the global economic development was adversely affected also by the US dollar weakening considerably against several major world currencies. Depreciation of the US dollar was largely facilitated by the large US current account and federal budget deficits and the potential imbalances of the global economy that could deepen against the background of persistently adverse US current account development trends. In the second half of the year, the most

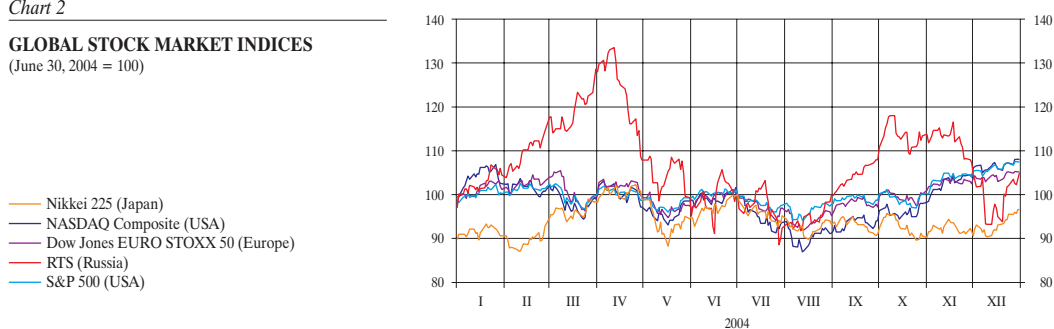
pronounced depreciation of the US dollar was recorded against the euro (12%), and on the last day of the year the exchange rate of the euro against the US dollar reached a historical high (1.3665). The exchange rate of the US dollar against the Japanese yen and the British pound sterling fell by 5% and 6%, respectively. Although the US dollar's weakening against several major currencies accelerated rapidly, no measures were taken to stop the decline.

With the global geopolitical instability growing, the financial market uncertainties also deepened. Thus, the investment of market participants in safer securities, including government debt securities, expanded fuelling a decline in yields on government bonds. The rise on the global stock market was moderate and unconvincing (see Chart 2) in the second half of 2004. The stock price dynamics was affected by the climbing oil prices and uncertainty concerning the future development of the major world economies. The US stock market development was also hampered by raising the FRS base rate. In the second half of 2004, the European stock market index Dow Jones EURO STOXX 50 went up by 5%, the US stock market index S&P 500 improved by 7%, and the technology-dominated NASDAQ Composite rose by 8%. Nikkei 225 for Japan's stock market declined by 3% during the period. In 2004, the Russian stock market was also characterised by considerable volatility, caused by the uncertainty surrounding the future of *Yukos*, the largest Russian oil concern. At the beginning of December, the Russian RTS index dropped rapidly as *Juganskneftegaz*, the major oil extraction company in *Yukos*, was sold at auction. When the news that the new owner of the company was *Rosneftj*, a Russian state-owned oil company, was announced, the RTS index improved again. In the second half of 2004, the RTS index increased by 5%.

Chart 2

#### GLOBAL STOCK MARKET INDICES

(June 30, 2004 = 100)



Latvia's economic growth accelerated in the second half of 2004, with the overall annual GDP growth reaching 8.5%. There was a significant rise in all major sectors of the economy (trade, transport, storage and communication, industry, real estate, renting and other business activity) and also in such rapidly developing sectors as financial intermediation, construction, hotels and restaurants. The rise of inflation was driven by the supply side factors, including changes in tax rates, growing administered prices and higher fuel prices. In the second half of the year, food prices escalated as a result of unfavourable weather conditions and cost increases, with the annual rise in some months exceeding even 10%. In 2004, food prices contributed to about one third of the average increase of consumer prices. Buoyant economic growth in the new EU countries underpinned expansion of demand for Latvia's commodities on the external markets. Competitiveness of the commodities was sustainable, causing Latvia's exports to develop rapidly. The growth of exports was affected also by improved terms of trade, with the export prices rising under the impact of the strong euro. In 2004, the growth of exports exceeded that of imports; nevertheless, the current account deficit remained high (12.3% of GDP). The rise of the general government consolidated budget deficit calculated according to the national accounts methodology was successfully contained at 0.7%

of GDP, primarily as a result of a rapid increase in tax revenue collections and moderate expenditure growth. In order to promote balanced long-term development of the Latvian economy and curb the domestic demand, the Bank of Latvia raised the reserve ratio for banks and branches of foreign banks from 3% to 4% as of July 24, 2004 and the refinancing rate by 0.5 percentage point (to 4%) as of November 12, 2004. With a view to achieving equal bank competition conditions as well as slowing down the rapidly expanding Latvian banks' borrowing from foreign banks, the Council of the Bank of Latvia introduced amendments to the "Regulation for Calculating and Maintaining the Bank Minimum Reserve Requirement", stipulating that as of January 24, 2005 the minimum reserve base includes banks' liabilities to foreign banks and foreign central banks with an agreed maturity or redeemable at a period of notice of up to 2 years.

## 2. BANK CREDIT RISK

**The successful performance of non-financial corporations over the last few years and Latvia's accession to the EU facilitated an expansion of lending to non-financial corporations, without aggravating the credit risk. The share of the US dollar in resident loans contracted significantly.**

At the end of 2004, loans granted to residents totalled 3 797.8 million lats or 51.6% {41.9%}<sup>1</sup> of GDP, including loans to non-financial corporations 2 029.5 million lats, households and non-profit institutions serving households (hereinafter – households) 1 326.8 million lats, non-bank financial institutions 373.8 million lats. The exposure of several banks to households continued to grow, and, at the end of 2004, for seven banks exceeded 20% of the assets (see Table 1). Nevertheless, the growth rate of those loans decelerated gradually due to the base effect, whereas loans to non-financial corporations expanded at an increasingly faster rate (see Chart 3).

Table 1

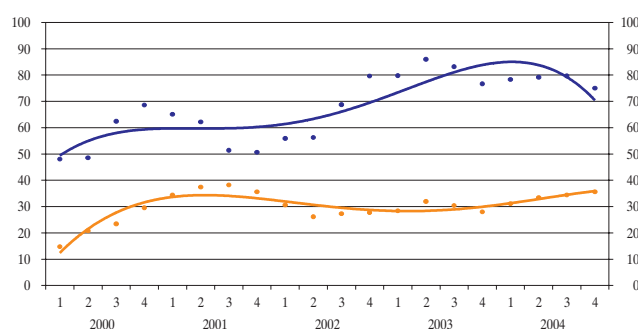
**BREAKDOWN OF BANKS BY EXPOSURE TO ECONOMIC SECTORS**  
(at end of 2004 {at end of 2003}; %)

	<10	10–20	>20
Loans to non-financial corporations	9 {8}	7 {6}	6 {8}
Loans to households	12 {13}	3 {6}	7 {3}
incl. loans for house purchase	15 {18}	5 {2}	2 {2}
Loans to non-bank financial institutions	21 {20}	1 {2}	0 {0}

Chart 3

**ANNUAL GROWTH RATE OF LOANS GRANTED TO RESIDENTS**  
(%)

— Loans to households  
— Loans to non-financial corporations



<sup>1</sup> {} – indicator of the corresponding period of the previous year.

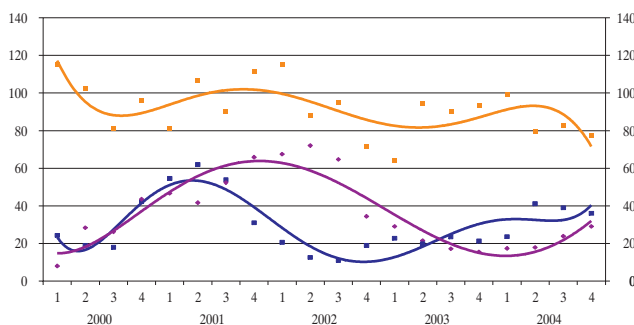


The successful performance of the non-financial corporations over the last few years and Latvia's accession to the EU facilitated acceleration of industrial credit growth (see Chart 4). Data on building permits granted for the construction of new industrial production buildings and warehouses, investors' (including foreign investors) interest in premises and land plots suitable for industrial development and increasing volumes of new orders in manufacturing point to sustainable development prospects for the Latvian economy. The growth rate of mortgage lending to non-financial corporations and households decelerated due to the high base. This tendency is likely to continue in 2005 as well.

Chart 4

**ANNUAL GROWTH RATE OF LOANS GRANTED TO RESIDENT FINANCIAL INSTITUTIONS, NON-FINANCIAL CORPORATIONS AND HOUSEHOLDS BY TYPE OF LOANS (%)**

— Industrial credit  
— Mortgage loans  
— Commercial credit



At the end of 2004, loans to resident non-financial corporations stood at 27.6% {23.7%} of GDP. In comparison with the end of 2003, loans to resident non-financial corporations increased by 35.6%. The share of the euro in loans granted to non-financial corporations continued to expand rapidly, whereas that of the lats and the US dollar contracted. At the end of 2004, the share of the US dollar in outstanding loans declined to 23.7% and was even lower in the new loans (see Charts 5 and 6). After repegging the lats from the SDR currency basket to the euro on January 1, 2005, it can be expected that part of the US denominated loans will be changed to the euro or the lats to diminish foreign exchange risk. Interest rates on euro denominated loans are also lower than those on the US dollar loans, and the euro exchange rate supports the change of the loan currency. Further

Chart 5

**CURRENCY COMPOSITION OF LOANS GRANTED TO RESIDENT NON-FINANCIAL CORPORATIONS (in 2004; at end of period; %)**

■ LVL  
■ EUR  
■ USD  
■ Other

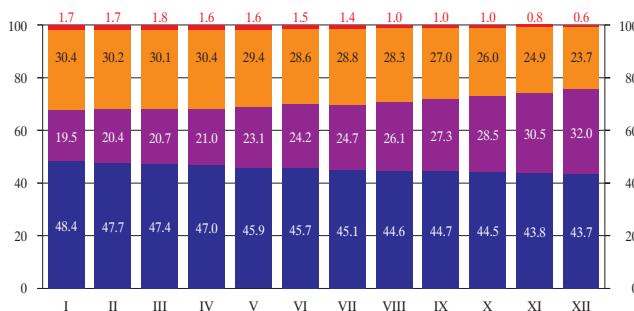
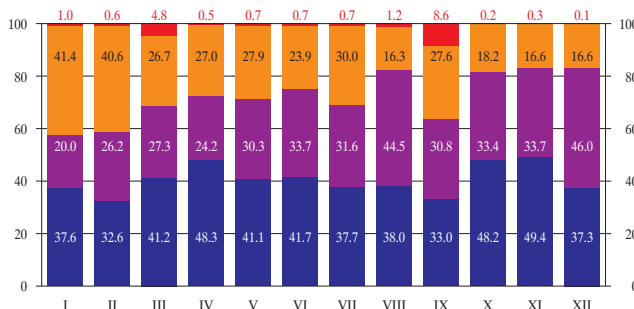


Chart 6

**CURRENCY COMPOSITION OF NEW LOANS GRANTED TO RESIDENT NON-FINANCIAL CORPORATIONS (in 2004; %)**

■ LVL  
■ EUR  
■ USD  
■ Other



growth of loans granted in the euro will be facilitated also by strengthening of the trade relations with the EU countries: in 2004, exports to the EU countries and imports from those countries amounted to 76.9% and 75.1% of total exports and imports, respectively. Nevertheless, for non-financial corporations of some sectors (e.g. transport, storage and communication and partly manufacturing: production of food and beverages, chemicals, chemical products and man-made fibres, manufacture of machinery and equipment n.e.c.), actively operating on the CIS markets where transactions are mainly effected in the US dollars, this currency could preserve the dominant position in revenue and, consequently, in lending.

By sector, the growth rate of loans granted to real-estate-related sectors (real estate, renting and other business activities, construction, hotels and restaurants) was the steepest (see Table 2) under the impact of infrastructural development, the rise in residential buildings construction and the increased number of tourists. The share of manufacturing in the total loan portfolio also grew, whereas that of trade and transport, storage and communication continued to shrink. Taking into account the high diversification degree of the loan portfolio and the rapid economic growth, one can conclude that the non-financial corporations display no overall increase in credit risk. Nevertheless, further concentration of loans in the real estate segment would exacerbate the financial vulnerability of banks to fluctuations of the real estate market prices and demand.

Table 2

**LOANS GRANTED TO NON-FINANCIAL  
CORPORATIONS OF SOME ECONOMIC  
SECTORS**

(at end of 2004; %)

	Annual growth	Share in loans granted to non-financial corporations	Share in banks' total assets
Agriculture, hunting and forestry	53.0 {47.6}	7.5 {6.6}	1.9 {1.7}
Manufacturing	41.2 {13.4}	18.5 {17.6}	4.7 {4.6}
Construction	56.6 {35.0}	9.1 {7.8}	2.3 {2.0}
Wholesale and retail trade	22.7 {16.4}	22.1 {24.1}	5.7 {6.3}
Hotels and restaurants	45.8 {63.9}	4.0 {3.7}	1.0 {1.0}
Transport, storage and communication	24.2 {4.9}	9.2 {9.9}	2.4 {2.6}
Real estate, renting and business activities	84.7 {78.1}	20.1 {14.6}	5.1 {3.8}

At the end of 2004, *loans to resident households* stood at 18.0% {12.0%} of GDP representing a 75.0% rise year-on-year. Lending to households was dominated by loans for house purchase (66.9%), and the share of those loans increased during the year {64.2%}. As far as credit risk is concerned, this is a positive sign, as the loans, as opposed to consumer credit, are secured by mortgage collateral.

In the second half of 2004, the currency composition of household loans improved. The same as in the currency composition of loans granted to non-financial corporations, the share of the US dollar shrunk significantly (to 39.6%), whereas that of the euro increased notably, constituting almost a half of the total new loans granted in the last months of the year (see Charts 7 and 9). The share of the US dollar remained high in loans for house purchase (42.6%; see Chart 8); nevertheless, it declined by more than 10 percentage points starting from June. After repegging the lats and a rise in the interest rates on the US dollar denominated lending, the process will be even quicker, with part of the existing

Chart 7

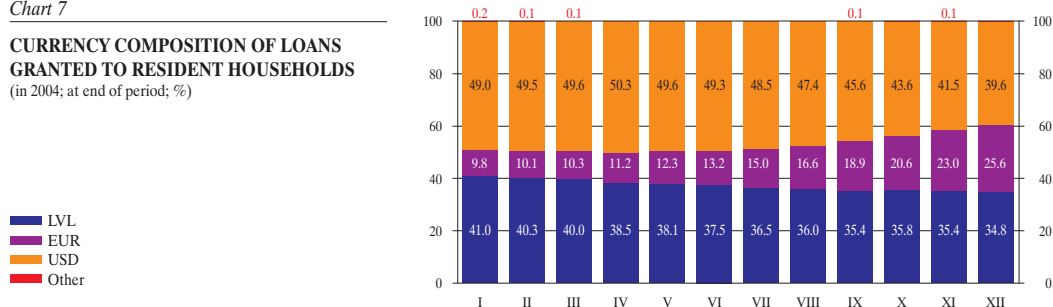
**CURRENCY COMPOSITION OF LOANS GRANTED TO RESIDENT HOUSEHOLDS**  
 (in 2004; at end of period; %)


Chart 8

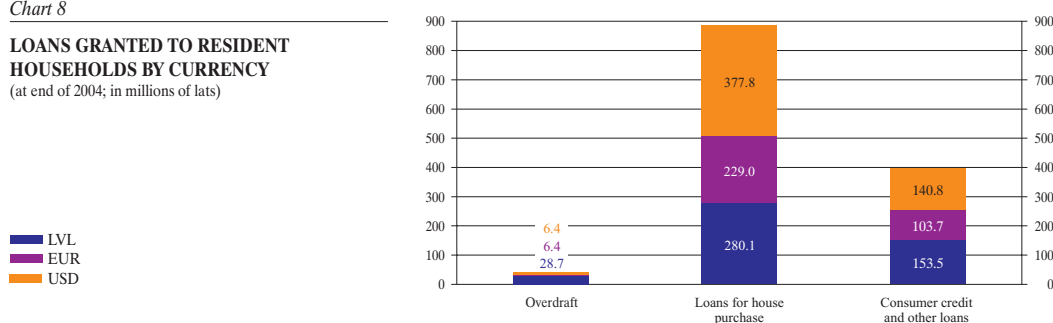
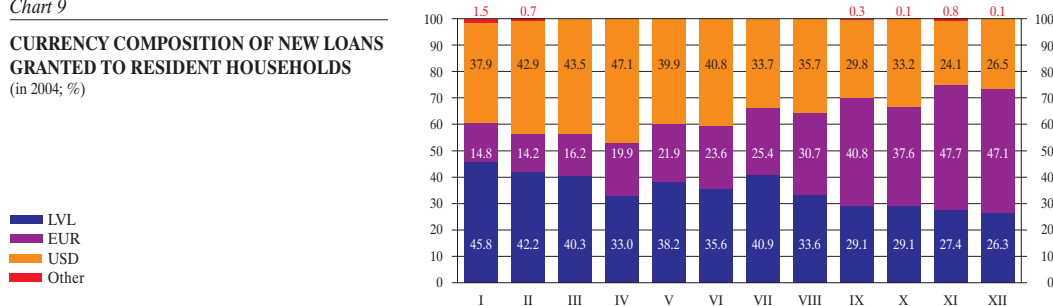
**LOANS GRANTED TO RESIDENT HOUSEHOLDS BY CURRENCY**  
 (at end of 2004; in millions of lats)


Chart 9

**CURRENCY COMPOSITION OF NEW LOANS GRANTED TO RESIDENT HOUSEHOLDS**  
 (in 2004; %)


borrowers changing the loan currency to the euro or the lats. Overall, the foreign exchange risk of households remains limited, as the majority of borrowers are households of high or average income capable of absorbing potential exchange rate fluctuations. In order to hedge risks, banks advise their customers to avoid currency mismatch, setting higher margins and requiring higher downpayment in case of currency mismatch. If the foreign exchange risk is especially high, the banks lower the loan ceilings.

At the end of 2004, loans to financial institutions were 373.8 million lats or 5.1% {4.4%} of GDP, which is 33.4% higher year-on-year. Since most of these loans were granted directly to leasing companies, an analysis of the performance of leasing companies has been provided in a separate Section of this Report. Loans granted to insurance corporations and pension funds totalled 3.2 million lats.

At the end of 2004, loans to non-resident non-banks were 579.9 million lats or 7.9% {5.5%} of GDP, i.e. 65.6% higher year-on-year. Loans granted to residents of the new EU countries continued to expand, albeit at a slower rate than in the first half of the year (see Chart 10). The majority of those loans were granted to residents of Malta, Poland, Estonia and Lithuania (see Chart 11). Loans to residents of the EU15 and CIS countries also grew rapidly; nevertheless, the banks' exposure to those loans was low (see Table 3). Loans granted to the US residents, however,

Chart 10

**LOANS GRANTED TO NON-RESIDENT  
NON-BANKS BY COUNTRY**  
(at end of period; in millions of lats)

■ EU15  
■ USA  
■ CIS  
■ New EU Member States

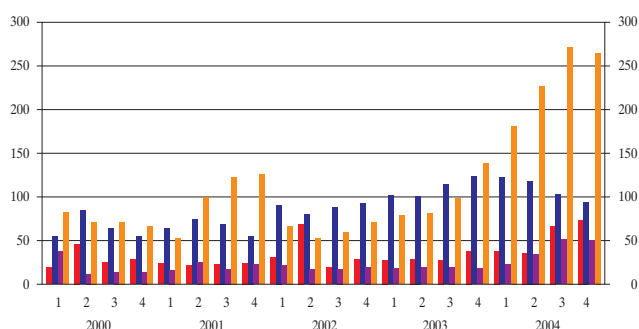


Chart 11

**LOANS GRANTED TO RESIDENTS OF THE  
NEW EU MEMBER STATES BY COUNTRY**  
(at end of 2004; %)

■ Estonia  
■ Cyprus  
■ Poland  
■ Malta  
■ Lithuania  
■ Hungary

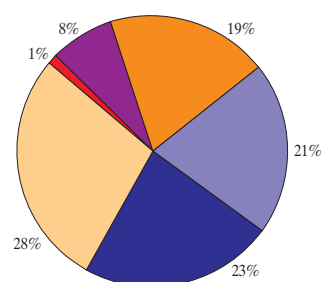


Table 3

**BREAKDOWN OF BANKS BY EXPOSURE TO  
NON-RESIDENT NON-BANKS**  
(at end of 2004; %)

	<5	5-10	>10
New EU Member States	20 {20}	1 {2}	1 {1}
EU15	22 {21}	0 {1}	0 {0}
CIS	21 {22}	0 {0}	1 {0}
USA	21 {17}	2 {5}	0 {0}

were on a decline since the end of 2003. Overall credit risk of the banks relating to loans to non-residents was low, as the banks' exposure to those loans was insignificant (7.4% of total assets) and such loans were mainly granted to residents of countries whose risk rating was low or similar to that of Latvia.

**Box 1. Stress tests of the banks' loan portfolio**

*Stress test results provide an indication of the scale of losses resulting from growing credit risk<sup>1</sup> that banks are able to absorb before their CAR falls below the minimum capital requirement. At the end of 2004, the minimum capital requirement set in Latvia was decreased from 10% to 8% of the banks' risk-weighted assets. This resulted in a significant improvement of the stress test results of the banks' loan portfolio, as a lower minimum capital requirement enables the banks to absorb bigger losses before encountering financial difficulties.*

*For example, with an increase of the general credit risk (see Chart 12), at the end of 2004, one systemically unimportant bank would have failed to meet the minimum*

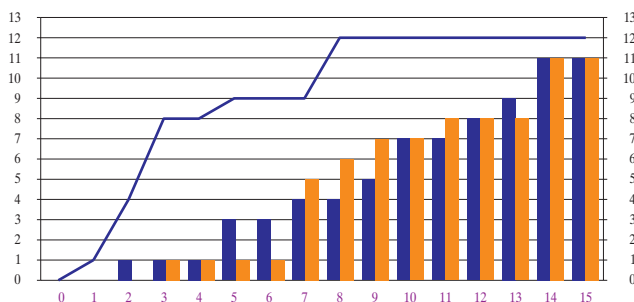
<sup>1</sup> Stress tests reflect banks' losses as the need to make additional provisions for the NPLs whose amount and share in total loans grows as a result of increasing credit risk. The banks' capital and risk-weighted assets are reduced by the amount of additional provisions to be made. Calculations assume that with the NPLs increasing, the share of the three NPL categories (substandard, doubtful and lost loans) in NPLs of each bank does not change, i.e. the substandard, doubtful and lost loans (the total of which comprises the NPLs) of each bank grow in proportion to the growth of NPLs simulated in the stress test.

Chart 12

**GENERAL CREDIT RISK STRESS TEST RESULTS**

(number of banks with CAR below minimum capital requirement; increase in the share of NPLs (in percentage points) to total loans)

■ 2004  
■ 2003 (if the minimum capital requirement is 8%)  
— 2003



capital requirement, if the share of NPLs in its total loan portfolio grew by 2 percentage points. If the increase of the share of NPLs in the banks' loan portfolios were the same at the end of 2003, four banks would have failed to meet the minimum reserve requirement, which at the time was 10%. If the minimum reserve requirement were 8% at the end of 2003, with the share of the NPLs growing by 2 percentage points, none of the banks would have had problems meeting the requirement.

*Different growth of the share of NPLs results in a similar situation: the banks' capacity to absorb a potential credit risk increase at the end of 2004 improved considerably over the end of 2003; nevertheless, if a comparison were made assuming that the minimum capital requirement was the same, with some exceptions, the situation as at the end of 2004 would have remained broadly the same. Thus, we can conclude that the banks' capacity to absorb a potential credit risk increase has improved notably; however, it is largely a result of a decreased minimum capital requirement. The minimum capital requirement reduction effect discarded, the banks' capacity to absorb a potential credit risk increase remained broadly unchanged at the end of 2004 in comparison with the end of 2003.*

*Transformation of the stress test results from the number of banks to the share of the banks' assets in the total banks' assets yields similar conclusions. The transformed stress test results suggest that at the end of 2004 the banks overall would have had no problems in absorbing a potential credit risk increase resulting in the share of the NPLs growing by 4 percentage points. Under this scenario, only one bank, whose share of assets in total banks' assets is under 3% and who is systemically unimportant, would have failed to meet the minimum capital requirement. For comparison, at the end of 2003, the banks overall could absorb an increase of the share of NPLs by 2 percentage points. Moreover, four systemically unimportant banks would have failed to meet the minimum capital requirement.*

*As the NPLs were overall 1.1% of the total loans of banks at the end of 2004, one may conclude that the Latvian banks would have had no significant problems in absorbing a potential credit risk increase resulting in an expansion of the NPLs by over 4 times.*

*The improvement of results for specific or sectoral credit risk shocks (see Table 4) was also underpinned by the reduction of the minimum capital requirement. Nevertheless, unlike with the general credit risk shocks, when factoring out the minimum capital requirement risk effect, the sectoral shock results are worse, the losses and the amount of additionally required capital still remaining low.*

*At the end of 2004 (the same as at the end of 2003), the most serious financial vulnerability of Latvia's banks related to the real estate market developments and mortgage lending to households. The second most significant potential vulnerability factor was the domestic shock or a credit risk rise in the most important sectors servicing the domestic market (see Charts 13 and 14). The financial vulnerability of banks to external shock relatively decreased in comparison with the end of 2003.*

Table 4

**SECTORAL CREDIT RISK SHOCKS USED IN STRESS TESTS AND PARAMETERS THEREOF**

Types of shock	Shock parameters
Domestic shock	20% <sup>1</sup> of loans to the major domestic market oriented sectors (construction, trade, real estate, renting and other business activity) become NPLs.
External shock	20% of loans to the major foreign markets oriented sectors (manufacturing and transport, storage and communication) become NPLs.
Real estate shock	20% of loans to real estate, renting and other business activity become NPLs.
Real estate shock affecting households	20% of loans to real estate, renting and other business activity and household loans for house purchase become NPLs.

<sup>1</sup> This and the other shock parameters are based on an assumption that the rise in the share of non-performing loans consists of a proportionally equal increase in all three categories of non-performing loans (substandard, doubtful and lost loans).

Chart 13

**SECTORAL CREDIT RISK SHOCK TEST RESULTS**  
 (number of banks with CAR below the minimum capital requirement)

2003  
 2003 (if the minimum capital requirement is 8%)  
 2004

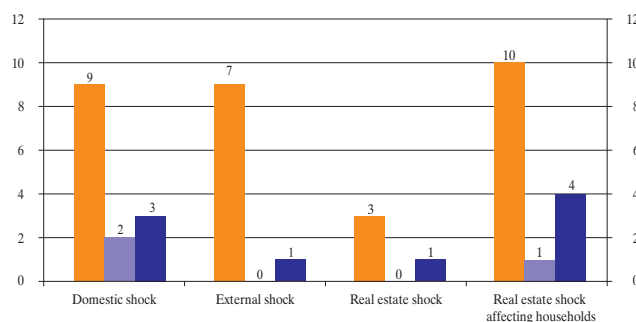
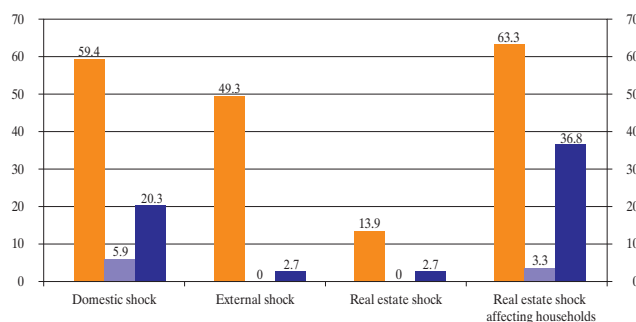


Chart 14

**SECTORAL CREDIT RISK SHOCK TEST RESULTS**  
 (share of banks with CAR below the minimum capital requirement in total banks' assets; %)

2003  
 2003 (if the minimum capital requirement is 8%)  
 2004



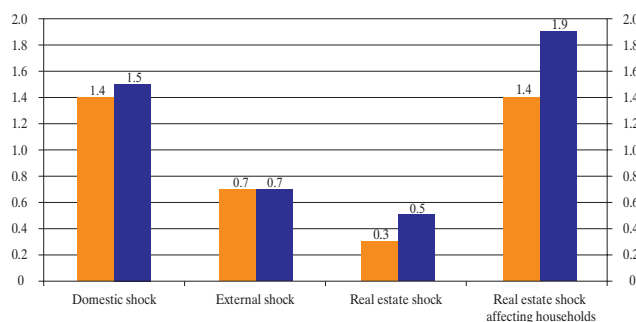
*With some exceptions, the CAR for those banks unable to meet the minimum capital requirement as a result of any of the sectoral shocks would stay above 6.5%.*

*Expressing the total losses incurred by the sectoral credit risk shocks as a share of the banks' assets (see Chart 15), provides assurance that although the potential losses have increased they would not exceed 2% of the banks' assets.*

Chart 15

**SECTORAL CREDIT RISK SHOCK TEST RESULTS**  
 (total bank losses; % of total banks' assets)

2003  
 2004



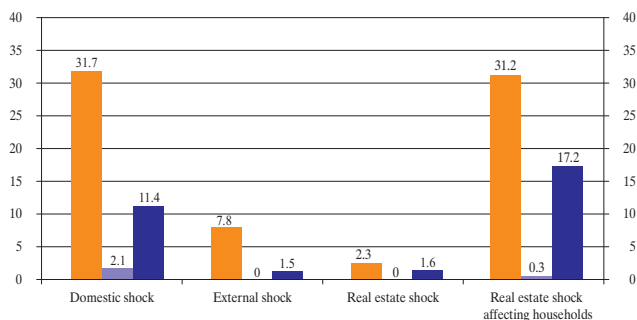
*The amount of additional capital required to meet the minimum capital requirement would also remain rather small (see Chart 16).*

Chart 16

### SECTORAL CREDIT RISK SHOCK TEST RESULTS

(additional capital required to meet the minimum capital requirement; in millions of lats)

2003  
2003 (if the minimum capital requirement is 8%)  
2004



### 3. THE OVERALL MARGIN<sup>1</sup>

**Tightening of competition facilitated shrinking of the interest rate margin, especially on loans for house purchase.**

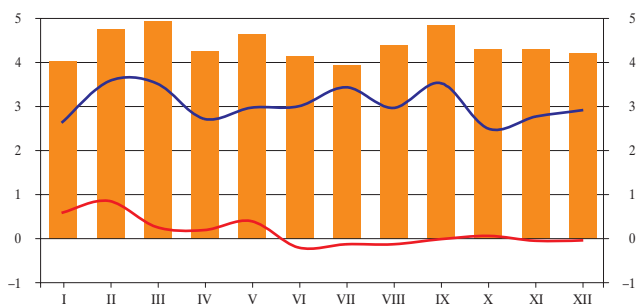
In the second half of 2004, the overall margin on new business<sup>2</sup> narrowed slightly (see Chart 17) and was 4.3 percentage points on average (4.5 percentage points in the first half of the year). A minor narrowing of the interest rate margin (to 3.0 percentage points) was observed for non-financial corporations. A further narrowing of the margin could be prevented by lending to business start-ups to which low risk premiums cannot be applied. The interest rate spread on deposits decreased in the second half of the year, with the deposit rates climbing. This proves that resident deposits are one of the most important financing sources for banks and there is a serious competition in this market, borrowing from parent banks and other foreign credit institutions notwithstanding.

Chart 17

### INTEREST RATE MARGINS ON NEW BUSINESS

(in 2004; in percentage points)

Overall margin  
Margin on loans granted to non-financial corporations  
Margin on deposits



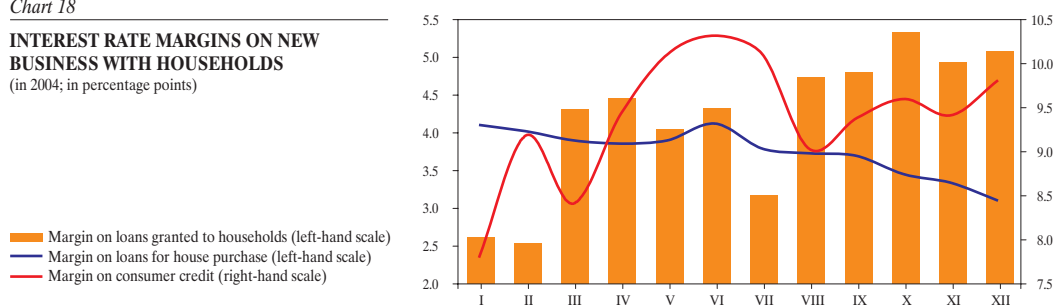
Interest spread on household loans grew by 1.0 percentage point over the first half of the year (to 4.7 percentage points; see Chart 18), due to constantly growing demand for consumer credit in 2004, on which the banks usually apply a higher risk premium, whereas the demand for short-term financing with more favourable interest rates (e.g., against securities collateral) was substantially lower. Moreover, interest rates spread on consumer credit was on an upward trend in 2004, potentially due to increasing popularity of overdraft and credit facilities which are non-collateralised types of lending involving especially high risk premiums. It should

<sup>1</sup> Due to implementation of methodology harmonised with the ECB practice, the previous periods data are no longer discussed in this Section starting from January 2004.

<sup>2</sup> All margins are calculated on new business in lats. Overall margin has been calculated by subtracting the average deposit rate from the lending rate with a fixed maturity. The margin on total loans, loans granted to households and non-financial corporations has been calculated by subtracting the reference rate (the value of average 3-month money market RIGIBOR for the given period) from the relevant lending rates. Margin on deposit rates has been calculated by subtracting the average deposit rate from the reference rate (the value of average 3-month money market RIGIBID for the given period).

Chart 18

**INTEREST RATE MARGINS ON NEW BUSINESS WITH HOUSEHOLDS**  
(in 2004; in percentage points)



be noted that the share of consumer credit in the banks' loan portfolio is low. A proof for growing competition in the field of household lending among banks was the considerable shrinking of interest rate spread on loans for house purchase (from an average of 4.0 percentage points in the first half of 2004 to 3.5 percentage points in the second half of the year).

After the repeg of the lats from the SDR currency basket to the euro in 2005, it can be expected that the money market interest rates will approach the euro interest rates, also causing a gradual levelling of the interest rates on loans granted in lats and euro. Interest rate spread on loans for house purchase will continue to narrow gradually; nevertheless, it will remain above that of the euro area (1–1.5 percentage points), because the majority of Latvia's residents have no credit history. Rather high interest rate spreads suggest persistence of high lending standards, which is extremely important, considering the current growth rate of lending. This will also support preservation of high profitability of banks.

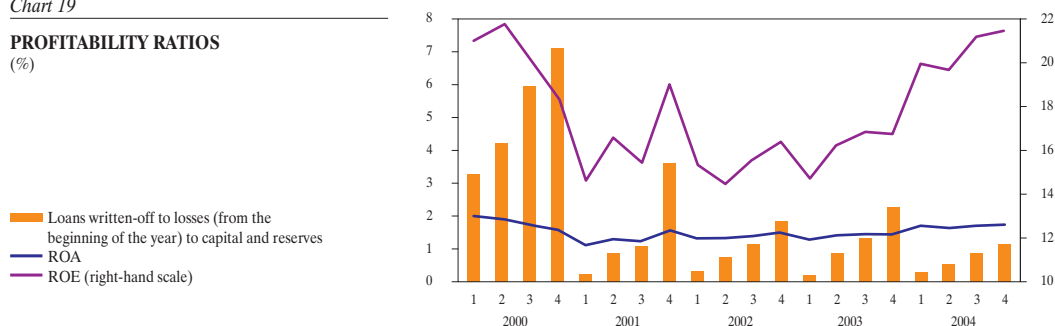
#### 4. BANK PROFITABILITY<sup>1</sup>

##### Bank profitability ratios continued to improve.

In 2004, with banks actively expanding their operations, their profit grew by 62.2% year-on-year, reaching 116.0 million lats after taxes. The increase of the banks' capital was more moderate, resulting in improved ROE<sup>2</sup> of banks (21.4% {16.7%}). The banks' ROA increased to 1.7% {1.4%} (see Chart 19). With the quality of assets improving, 34.6% loans less year-on-year were written off in 2004 (7.2 million lats).

Chart 19

**PROFITABILITY RATIOS**  
(%)



The ROE by groups of banks varied in 2004 as well (see Chart 20). A higher ROE was characteristic of large banks<sup>3</sup> and medium-sized niche banks, whereas for the

<sup>1</sup> Unaudited data of banks have been analysed.

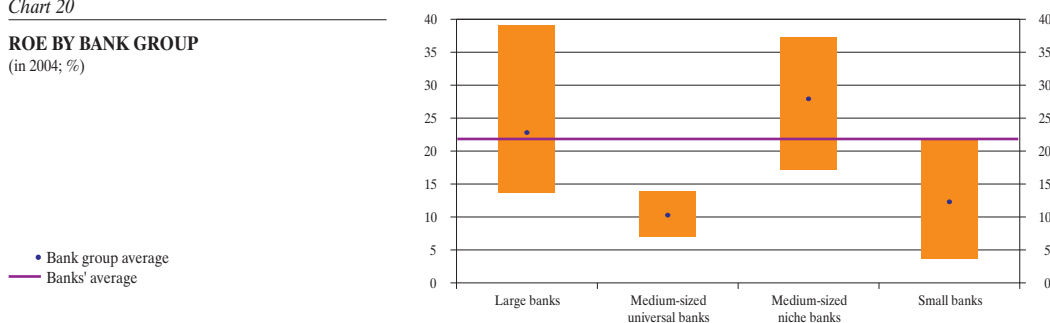
<sup>2</sup> ROE has been calculated based on the "Regulation on the Preparation of Public Quarterly Reports of Credit Institutions" of the Financial and Capital Market Commission.

<sup>3</sup> Large banks – with assets exceeding 400 million lats, medium-sized banks – with assets within the range of 100 million lats to 400 million lats and small banks – with assets below 100 million lats. For medium-sized niche banks non-resident deposits exceed 20% of total liabilities, whereas for medium-sized universal banks it is below 20%.



Chart 20

**ROE BY BANK GROUP**  
(in 2004; %)



medium-sized universal and small banks it was lower than the banking sector average. In comparison with 2003, ROE improved for all large and medium-sized universal banks and the majority of medium-sized niche banks and small banks. For 10 banks the ROE was above 15% and their market share was 58.7% of the total banking sector assets (see Table 5).

Table 5

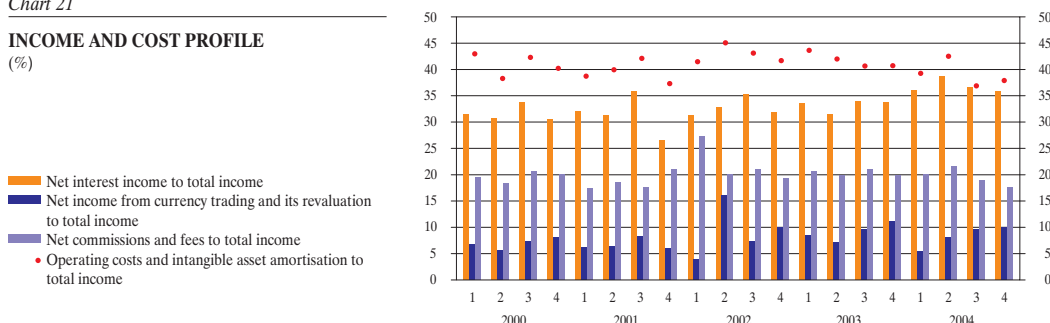
**BREAKDOWN OF BANKS BY GROUP BASED ON THEIR ROE IN 2004**

ROE (%)	Share of the banks' assets in total banking sector assets (%)	Number of banks
<5	1.5	2
≥5–10	5.3	4
≥10–15	29.4	6
≥15–20	4.7	2
≥20	54.0	8

In comparison with 2003, total income from interest displayed the highest increase in the structure of income (34.2%), primarily on account of expansion of loans granted to non-banks. Interest expenditure grew by 27.4%, mainly on account of a rise in interest expenditure on liabilities against credit institutions and on debt securities. Interest expenditure on non-bank deposits increased at a slower pace due to a rise in demand deposits. Therefore, net interest income grew by 38.5%, amounting to 36.6% {33.2%} of total income (see Chart 21).

Chart 21

**INCOME AND COST PROFILE**  
(%)



Net commissions and fees grew by 19.5% and amounted to 19.4% {20.4%} of total income. The rise in commissions and fees was facilitated by a growing number of customers and payment cards as well as development of lending and other banking services.

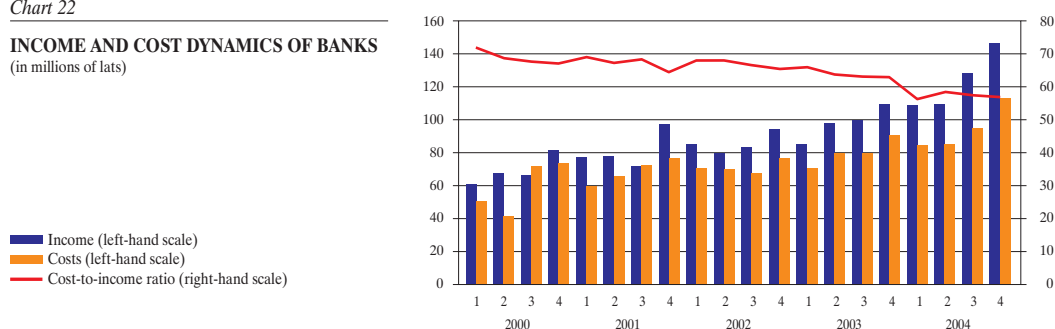
Income from foreign currency trading increased by 13.7% due to a higher trading turnover. In 2004, the share of net income from foreign currency trading and income from currency revaluation shrank to 8.5% {9.2%} of total income.

With banks continuing to develop, their operating costs increased (by 19.2%, including a rise of 24.7% in personnel wages and salaries). The share of operating costs and amortisation of intangible assets to total income decreased slightly to 39.1% {42.0%}.

As already noted, the banks' income grew more markedly than expenditure (by 25.6% and 17.5%, respectively). Thus, the cost efficiency of banks improved and cost-to-income ratio<sup>1</sup> declined to 57.5% {63.2%} (see Chart 22). Cost efficiency improved for most of the banks and the cost-to-income ratio of almost all large banks was lower than the average.

Chart 22

### INCOME AND COST DYNAMICS OF BANKS (in millions of lats)

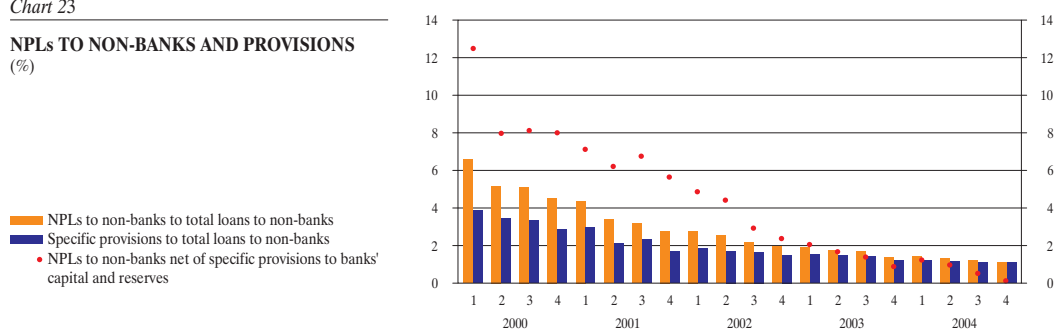


### Specific provisions covered the NPLs almost fully.

NPLs granted to non-banks expanded by 19.7% in comparison with the end of 2003. Nevertheless, the quality of the banks' assets continued to improve under the impact of the favourable economic conditions, improvement of risk management systems of the banks and expanding loans. NPLs and specific provisions shrunk and totalled 1.1% {1.4%} and 1.1% {1.2%} of the total loans granted to non-banks at the end of 2004, respectively (see Chart 23). Specific provisions covered 99.1% of the NPLs at the end of 2004.

Chart 23

### NPLs TO NON-BANKS AND PROVISIONS (%)



## 5. BANK CAPITAL ADEQUACY

Although the minimum capital adequacy requirement for banks was reduced, the banks' capitalisation level remained unchanged in comparison with the end of 2003.

In October 2004, amendments to the Law "On Credit Institutions" were approved, stipulating that thereafter, as in many other EU countries, the CAR of the banks

<sup>1</sup> The cost-to-income ratio has been calculated based on the ECB methodology: (operating costs + intangible asset and fixed asset depreciation and disposal + other ordinary expenditure)/(net interest income + income from dividends + net commissions and fees + profit/loss from trades of financial instruments + financial instrument revaluation result + other ordinary income) x 100.

may not fall below 8%. CAR remained broadly unchanged year-on-year and was 11.7% at the end of 2004 (see Chart 24). The CAR of the large banks decreased, whereas that of the small and medium-sized banks slightly grew. Thus, the CAR of small and medium-sized banks stood at 13.8% {12.7%} at the end of 2004, whereas that of the large banks was 10.6% {11.2%}.

Chart 24

**CAR**  
(at end of period; %)

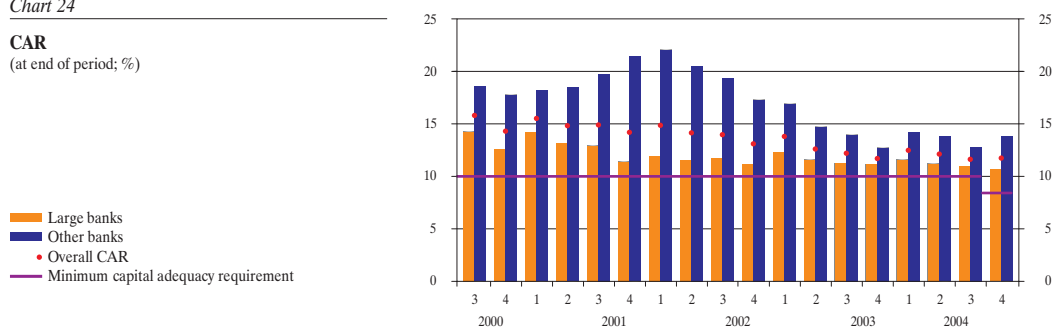
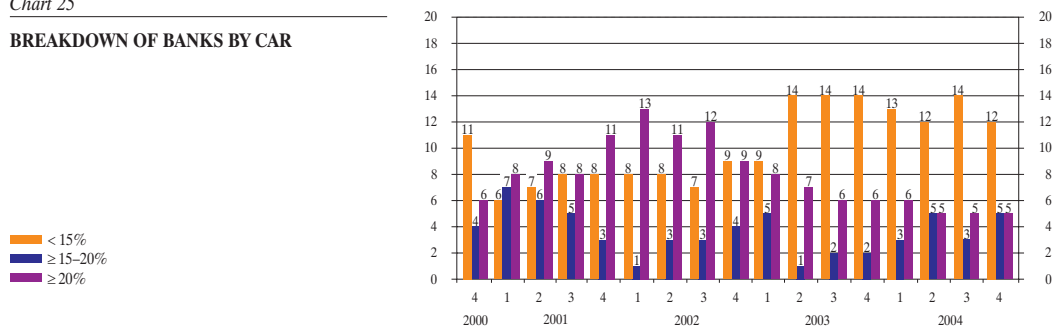


Chart 25

**BREAKDOWN OF BANKS BY CAR**



## 6. INTEREST RATE RISK OF BANKS

**The banks' exposure to interest rate risk is limited.**

Interest rate risk is the potentially adverse effect of the interest rate movements on a bank's earnings and its economic value. A traditional source of the interest rate risk for banks is the repricing risk or the probability of suffering losses due to interest rate movements and mismatching residual maturities of assets, liabilities and off-balance sheet positions. In this case, losses are incurred when the interest expenditure growth exceeds that of the interest income or the interest income falls quicker than interest expenditure.

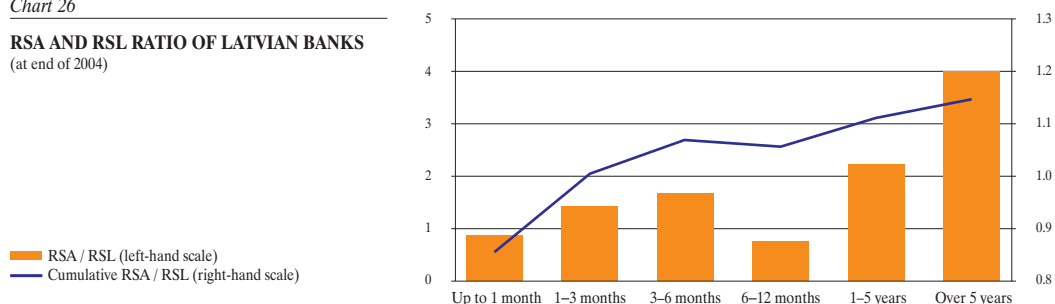
One of the techniques to measure the interest rate risk is the repricing gap. Applying this method, interest rate sensitive assets (RSA) and liabilities (RSL) are distributed into several time-bands depending on the time remaining to repricing, which is the residual maturity of the financial instrument for fixed rate instruments and the time remaining to reviewing the interest rates for variable rate instruments.

The repricing gap (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 correspondent liabilities and, therefore, the banks' 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 RSL exceed the correspondent assets and, therefore, the banks' interest expenditure will grow more than the income.

RSA and RSL repricing schedule in Latvian banks (see Chart 26) reflects maturity transformation, a traditional banking function, when assets attracted primarily by means of short-term deposits are used to grant loans, which are mostly long-term assets.

Chart 26

#### RSA AND RSL RATIO OF LATVIAN BANKS (at end of 2004)



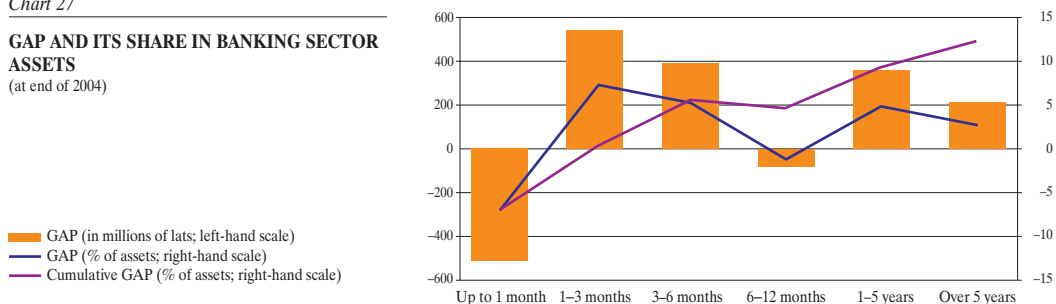
Thus, in the time-band of up to 1 month, the banks' RSL exceed the RSA, whereas in the longest time-bands the situation is the opposite. The only exception is the time-band of 6–12 months, where the amount of the RSA is considerably smaller in comparison with the shortest time-bands. This can be explained by relatively short interest rate periods applied by banks when granting variable rate loans, as a considerably smaller amount of loans falls within this time-band as compared with the previous three.

As the RSA and RSL ratio in various time-bands differs, then, e.g., with the interest rates increasing, the losses incurred within the nearest month will be offset by the profit earned within 1–6 months of raising the interest rates. When analysing specific time-bands, it is therefore useful to look at the cumulative RSA and RSL ratio factoring in the RSA and RSL ratio of the preceding time-bands. Banks using the GAP method in measuring the interest rate risk apply the cumulative 1 year RSA and RSL ratio to set the risk limits, by maintaining this ratio within the limits of 0.9 to 1.1 or 0.8 to 1.2. For Latvian banks, this ratio was 1.06, which points to an overall well-balanced maturity profile of the RSA and RSL and, consequently, also to lower banking sector's exposure to the interest rate risk.

The aggregate GAP of the banks in various time-bands ranges from 81.7 million lats to 542.9 million lats or from 1.1% to 7.3% of the banks' assets. 1 year cumulative GAP of the banks totals 4.5% of the banks' assets (see Chart 27).

Chart 27

#### GAP AND ITS SHARE IN BANKING SECTOR ASSETS (at end of 2004)



Using GAP, an approximate estimate of the potential effect of interest rate movements on the annual profit of the Latvian banks<sup>1</sup> can be obtained, thereby identifying the Latvian banks' sensitivity towards changes in interest rates.

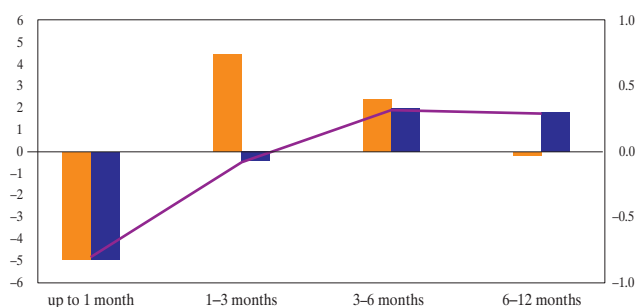
<sup>1</sup> Effect on annual profit within each time-band is calculated by multiplying the time-band's GAP with the interest rate change and the ratio of this time-band characterising the part of the year when the GAP of this time-band will be active. The calculation of the ratio assumes that repricing will be done in the middle of the time-band. For example, 3–6 months time-band ratio is calculated as follows:  $(12 - 0.5 \times (3 + 6)) / 12 = 0.625$ . The total effect on the annual profit is the sum of effects of the first four time-bands of the year.

For example, with interest rates increasing by 1 percentage point, in case of a parallel shift of the yield curve<sup>1</sup>, a negative GAP within the time-band of up to 1 month would incur annual losses in the amount of 5.0 million lats, whereas a positive GAP in the time-band of 1–3 months would result in 4.5 million lats profit (see Chart 28).

Chart 28

**SENSITIVITY ANALYSIS: IMPACT OF INTEREST RATE INCREASE BY 1 PERCENTAGE POINT ON ANNUAL PROFIT OF LATVIAN BANKS**

■ Impact (in millions of lats; left-hand scale)  
 ■ Cumulative impact (in millions of lats; left-hand scale)  
 — Cumulative impact (% of capital and reserves; right-hand scale)



The total impact of the interest rate growth by 1 percentage point on the Latvian banks would be positive, as it would increase the annual profit by 1.8 million lats or 0.3% of the banks' total capital and reserves. Correspondingly, if the interest rates declined by 1 percentage point, with a parallel downward shift of the yield curve, the aggregate annual profit of the banks would shrink by 1.8 million lats.<sup>2</sup> This relatively low sensitivity of banks to interest rate movements suggests that the overall exposure of banks to interest rate risk is limited.

The main factor restricting the interest rate risk of the banks is granting loans at variable rates. Thus, the changes in market interest rates are priced into interest rates on bank loans in a relatively short period of time. At the end of 2004, loans granted by the Latvian banks with the residual maturity to repricing within the time-band up to 6 months constituted 83.5% of the total loans. Due to the large share of such loans, repricing gaps within the time-bands of 1–3 and 3–6 months are positive and sufficiently high to offset the usually negative repricing gap of the shortest time-band.

However, it has to be taken into account that the interest rate risk disposed of by banks through granting variable rate loans is transferred to their customers.

## 7. FOREIGN EXCHANGE RISK OF BANKS

**Overall, the direct foreign exchange risk was lower than in the first half of 2004.**

After a relatively calm first half of 2004 on the foreign exchange market, in September the US dollar resumed its downward trend continuing until the end of 2004. The lats still being pegged to the SDR currency basket in 2004, the US dollar depreciated against the lats, falling to the lowest level of the last 9 years, whereas the exchange rate of the euro to the lats reached an all time high by exceeding 0.7 at the end of the year (see Chart 29).

As expected, due to the lats repeg from the SDR currency basket to the euro, the majority of banks reduced their open positions in the US dollars notably towards the end of the year (see Chart 30), in order to reduce the risk of the growing US

<sup>1</sup> A parallel shift of the yield curve means that the annual interest rates of all time-bands change by an equal number of percentage points.

<sup>2</sup> As the calculations are based on the GAP method, they do not take into account the interest rate impact on the economic value of banks and are based on the structure of the banks' aggregate balance sheet as at the end of 2004.

Chart 29

EXCHANGE RATE DEVELOPMENTS

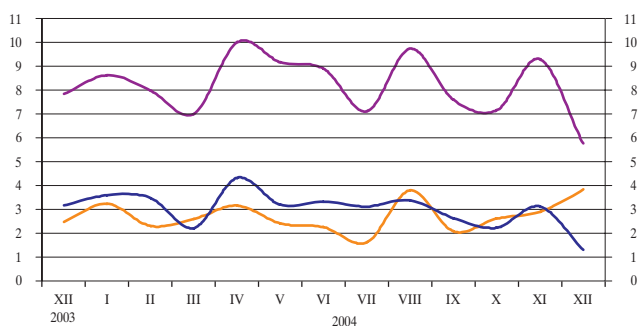
EUR/USD (left-hand scale)  
 EUR/LVL (right-hand scale)  
 USD/LVL (right-hand scale)



Chart 30

AVERAGE WEIGHTED OPEN CURRENCY POSITIONS OF THE BANKING SECTOR (% of equity)

Total  
 Euro  
 US dollar



dollar fluctuations against the lats after the repegging. Therefore, the aggregate open currency position of the banks declined to 5.8% of equity.

Decrease in open positions in the US dollar was more pronounced for large and medium-sized banks, whereas in small banks this tendency was less notable (see Charts 31 and 32).

Chart 31

OPEN POSITIONS BY BANK GROUP (at end of June 2004; % of equity)

Euro short position  
 US dollar short position  
 Euro long position  
 US dollar long position

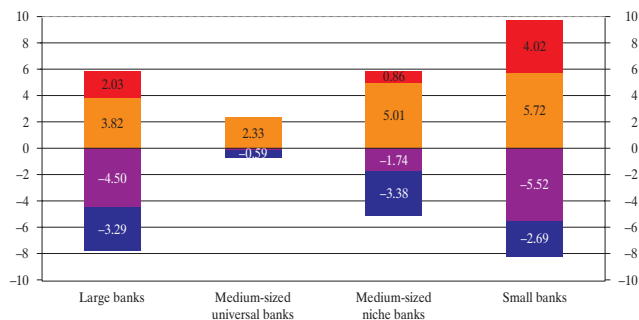
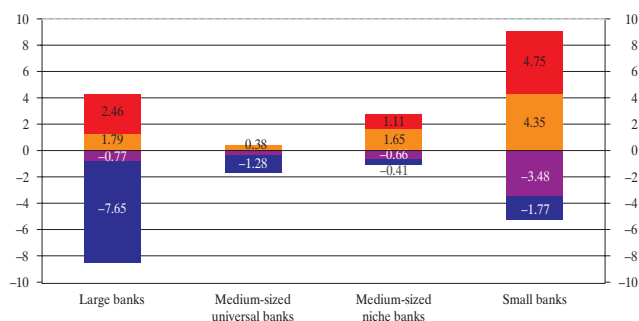


Chart 32

OPEN POSITIONS BY BANK GROUP (at end of 2004; % of equity)

Euro short position  
 US dollar short position  
 Euro long position  
 US dollar long position



Open positions in euro, whose foreign exchange risk after the lats repeg would be contained within the fluctuation band of the lats against the euro ( $\pm 1\%$ ), increased

at the end of the year. This tendency was more notable in large banks. Overall, aggregate open currency positions of the banks as well as open positions in specific currencies still remained rather small.

Value-at-Risk (VaR)<sup>1</sup> analysis results suggest that **overall in the second half of 2004 the foreign exchange risk was lower than in the first half of the year;** nevertheless, it displayed a growth tendency at the end of the year (see Charts 33 and 34). It has to be taken into account, however, that this indicator is based on the historical fluctuations of various exchange rates and their mutual correlations; therefore, the increase of VaR at the end of the year can be partly explained by the fact that, with the banks getting ready for repegging the lats and reducing their open positions in the US dollar, the risk offsetting factor, created by the reverse euro and US dollar fluctuation trends against the lats in 2004 when the lats was pegged to the SDR currency basket, was fading.

Chart 33

**FOREIGN EXCHANGE RISK: 1% 10-DAY VaR FROM EXCHANGE RATE FLUCTUATIONS IN LATVIAN BANKS**  
(% of capital and reserves)

--- Maximum  
--- 3rd quartile  
--- Median  
--- 1st quartile  
--- Minimal

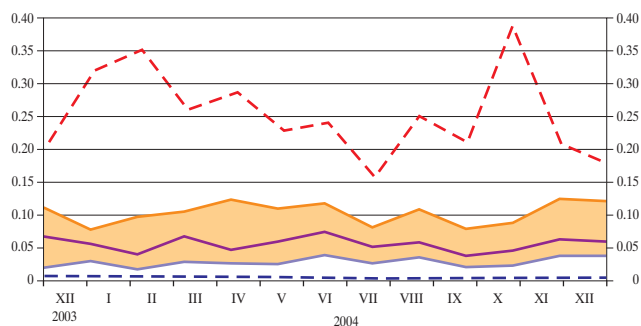


Chart 34

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

■ In thousands of lats (left-hand scale)  
— Of capital and reserves (%; right-hand scale)



<sup>1</sup> It has to be taken into account that the VaR for Latvian banks has been obtained by adding up the VaR of individual banks. Total VaR of banks is smaller as the VaR of individual banks has not been fully positively correlated.

As after the lats repeg to the euro the main source of risk for the banks will be their open positions in the US dollar, a significant indicator of the banks' foreign exchange risk is their sensitivity to the US dollar exchange rate fluctuations (see Charts 35 and 36). At the end of the second half of 2004, with the banks reducing their open positions in the US dollars, their sensitivity towards the US dollar exchange rate fluctuations diminished.

It can therefore be concluded that banks' overall foreign exchange risk decreased in the second half of the year, and the banks changed the structure of their open currency positions adjusting to the lats' peg to the euro.

<sup>1</sup> 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 VaR evaluation date (last day of the relevant month).

Chart 35

**BANKS' SENSITIVITY TO THE US DOLLAR DEPRECIATION AGAINST THE LATS BY 10%**  
(profit and loss ratio against capital and reserves; %)

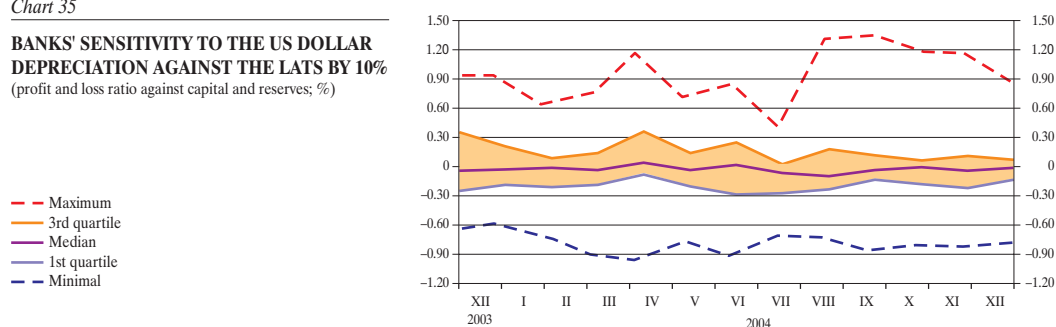
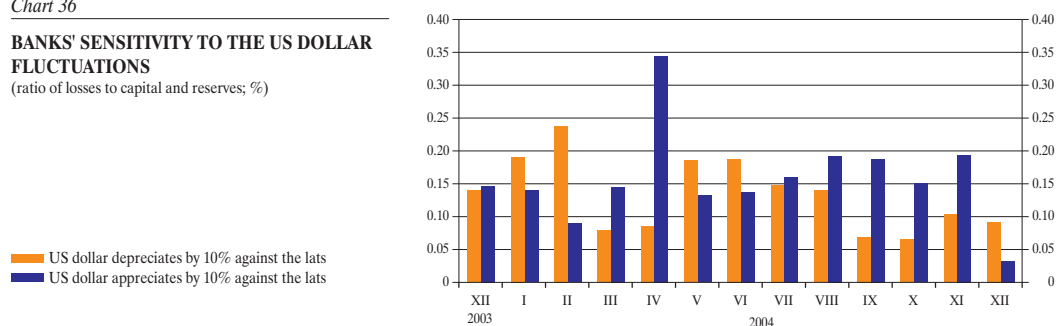


Chart 36

**BANKS' SENSITIVITY TO THE US DOLLAR FLUCTUATIONS**  
(ratio of losses to capital and reserves; %)



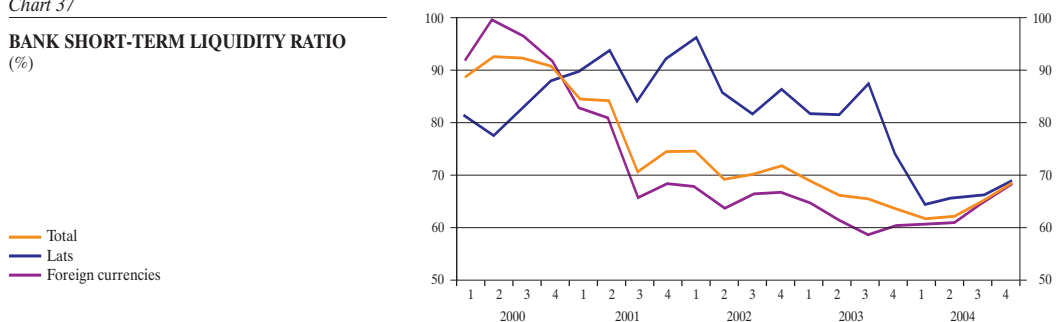
## 8. BANK LIQUIDITY

### Bank liquidity ratios improved.

Bank liquidity ratios still considerably exceeded the minimum (30%<sup>1</sup>) stipulated by the Finance and Capital Market Commission, even increasing slightly: at the end of 2004, bank liquidity ratio accounted for 58.1% {57.9%}. The short-term liquidity ratio<sup>2</sup> also posted an increase and stood at 68.7% {61.8%} at the end of 2004 (see Chart 37). The share of liquid assets<sup>3</sup> in bank assets reached 33.7% {33.5%} at the end of 2004 (see Chart 38), although loans granted to non-banks reported a rapid pickup. Growth in liquid assets was fostered by a buoyant rise in claims on credit institutions (mainly foreign), as well as increase in banks' demand deposits with the Bank of Latvia. This rise was facilitated by the decision of the Council of the Bank of Latvia to increase the reserve requirement from 3% to 4% as of 24 July, 2004. A substantial decline in demand liabilities to banks had a positive impact on the improvement in liquidity ratio. Pursuant to the amendments to the "Regulation for

Chart 37

**BANK SHORT-TERM LIQUIDITY RATIO**  
(%)



<sup>1</sup> The total assets with less than 30 days to maturity may not be less than 30% of the total liabilities with 30 days to maturity.

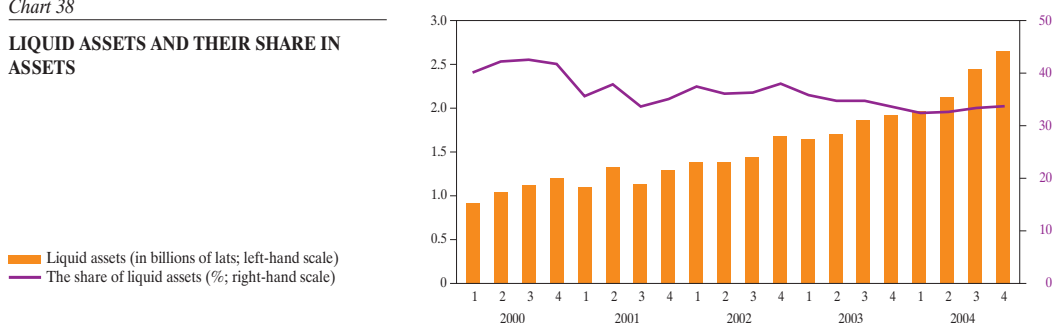
<sup>2</sup> Short-term liquidity ratio = total assets/demand liabilities (to banks and non-banks) x 100.

<sup>3</sup> Liquid assets = vault cash + claims on central banks and other credit institutions + central government fixed income debt securities.



Chart 38

## LIQUID ASSETS AND THEIR SHARE IN ASSETS



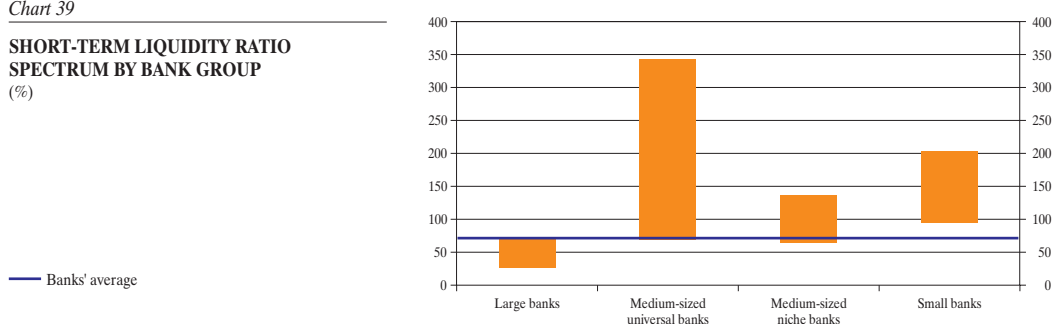
Calculating and Maintaining the Bank Minimum Reserve Requirement", as of January 24, 2005, the minimum reserve base includes banks' liabilities to foreign banks and foreign central banks with an agreed maturity or redeemable at a period of notice of up to 2 years. Thus, a number of banks using foreign credit institution funds restructured their liabilities from short-term to the liabilities with a maturity of over 2 years. Hence the share of liabilities to banks with a maturity of over 2 years posted an increase in banks' total liabilities (to 53.0% {29.3%}) at the end of 2004. As regards the short-term liquidity ratio by currency, it is evident that the lats and foreign currency liquidity ratios levelled out.

With the growth of lending, the non-bank loan-to-deposit ratio rose to 85.9% {80.3%} at the end of 2004. For resident transactions, this ratio was 161.9% {152.8%} at the end of the year. Banks financed part of the lending from loans granted by foreign banks and, in a smaller amount, from non-resident non-bank deposits. Lending expansion was also additionally fuelled by the banks' growing capital. In 2004, with shareholders investing funds in further development, banks' paid-up capital increased by 24.7%.

As regards the short-term liquidity spectrum by bank groups (see Chart 39), it is evident that large banks and some medium-sized banks have larger liquidity risk exposures. These banks are actively involved in granting loans to resident non-banks. In the second half of the year, however, several medium-sized universal banks substantially improved their liquidity ratios.

Chart 39

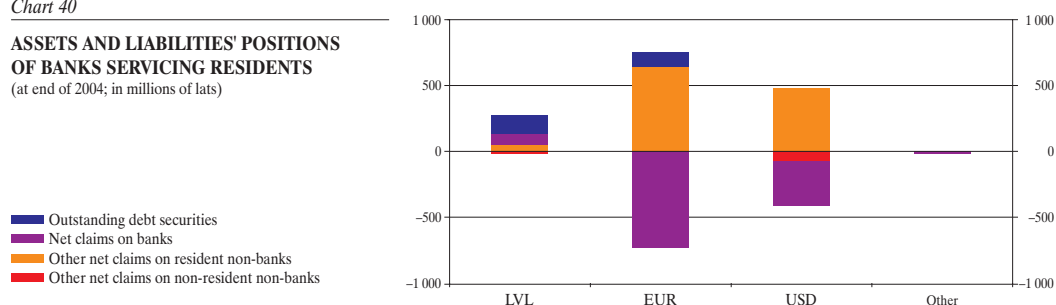
## SHORT-TERM LIQUIDITY RATIO SPECTRUM BY BANK GROUP (%)



Analysing net positions of assets and liabilities, it can be concluded that the banks servicing residents<sup>1</sup> (see Chart 40) attract funds available on the interbank market abroad and use them mostly for granting loans to resident non-banks. Most of the attracted interbank funds (67.3%) are received from parent banks. Long-term syndicated loans from foreign banks and loans from the West European banks for investment are also being attracted. In comparison with 2003, resident non-bank net position in euro assets posted a steep rise, determined by expansion of euro

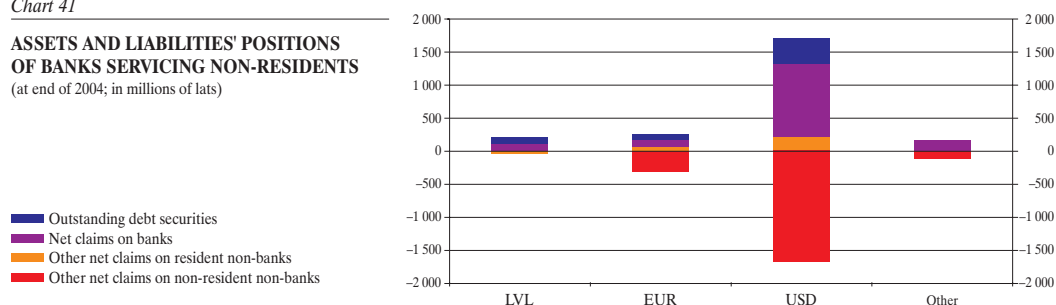
<sup>1</sup> Banks are grouped by the share of non-resident deposits in bank liabilities: if it exceeds 20%, a bank is regarded as the bank servicing non-residents; if it is below 20%, a bank is regarded as the bank servicing residents.

Chart 40

**ASSETS AND LIABILITIES' POSITIONS  
OF BANKS SERVICING RESIDENTS**  
(at end of 2004; in millions of lats)


loans. Dependence on foreign bank financing increased slightly. Banks servicing non-residents mostly attract funds from non-resident non-banks in US dollars, and place majority of them in foreign banks or invest in securities (see Chart 41). A minor part of the non-resident deposits was also used for granting loans to residents, and in comparison with 2003, it declined. Thus, the liquidity risk relating to non-resident deposits is low, as a higher share of those assets is placed on correspondent accounts in foreign banks and invested in securities.

Chart 41

**ASSETS AND LIABILITIES' POSITIONS  
OF BANKS SERVICING NON-RESIDENTS**  
(at end of 2004; in millions of lats)


## 9. FINANCIAL VULNERABILITY

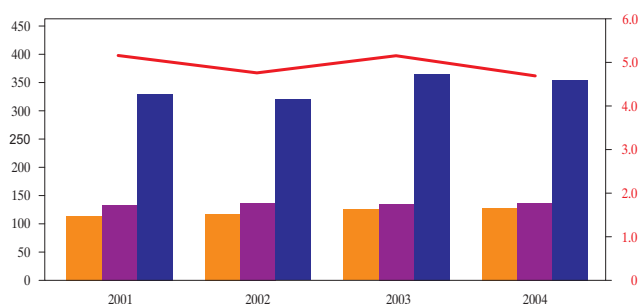
**With the production costs and administrative costs increasing, the profitability of non-financial corporations posted a minor decline, but in the third quarter it had already slightly exceeded that of the corresponding period of the previous year.**

According to preliminary data, in the first nine months of 2004 the profitability of sectors dominating the banks' loan portfolios: wholesale and retail trade, real estate, renting and business activities and manufacturing fell slightly behind the high level reached year-on-year. The rise in sales was more vigorous, however, the increase in costs in several sectors prevented from reaching the former profitability indicators. These costs picked up as a result of a rise in fuel prices, electricity tariffs, wages, price rise of goods imported from the euro area countries and rapidly accelerating construction costs. However, profitability in the third quarter slightly exceeded the one reached year-on-year. In the first nine months of 2004, the overall average profitability of non-financial corporations declined by 0.5 percentage point (to 4.7%; see Chart 42). Interest payments posted a steeper rise than non-financial corporations' profit, and therefore their coverage shrank slightly, remaining, however, sustainably high, with profit exceeding the interest payment amount more than three times. In comparison with the third quarter of 2003, debt-to-equity ratios in most sectors improved and the level of debt declined in the first three quarters of 2004, whereas total debt increased slightly as a result of rise in trade sector liabilities.

Chart 42

**NON-FINANCIAL CORPORATION  
FINANCIAL RATIOS<sup>1</sup> IN THE FIRST NINE  
MONTHS OF THE RESPECTIVE YEAR  
(%)**

— Return on assets (right-hand scale)  
 ■ Debt-to-equity ratio (left-hand scale)  
 ■ Liquidity (left-hand scale)  
 ■ Interest coverage ratio (left-hand scale)



<sup>1</sup> Debt-to-equity ratio is the ratio of debt to equity; liquidity: current assets to short-term liabilities; interest coverage ratio: profit to interest payments; return on sales: pre-tax profit to sales.

**After the repeg of the lats, the foreign exchange risk of households having received long-term loans in US dollars increased.**

In the second half of 2004, net financial position of households continued to decrease and turned negative, i.e. household liabilities to credit institutions, leasing companies and credit unions exceeded total deposits (see Chart 43). At the end of 2004, the household debt consisting of liabilities to credit institutions, leasing companies and credit unions was 70.7% higher year-on-year, reaching 18.7% {12.8%} of GDP (see Chart 44). Interest payments, on the other hand, remained very low and did not exceed 1% of GDP. In 2004, they recorded a year-on-year rise of 54.4%, and, with a further expansion of debt, a more rapid increase of interest payments can be expected. Although the volume of debt and interest payments was quite low, its increase points to growing risks in this segment. Particular attention should be paid to the currency composition of the household debt (see Chapter "Bank Credit Risk") and the fact that the majority of loans were granted on floating interest rates. Taking into account the repeg of the lats from the SDR currency basket to the euro as of January 1, 2005, which may result in an increase of mutual fluctuations of the US dollar and the lats, a high share of the

Chart 43

**FINANCIAL ASSETS AND LIABILITIES OF  
HOUSEHOLDS TO CREDIT INSTITUTIONS,  
LEASING COMPANIES AND CREDIT UNIONS  
(at end of period; in millions of lats)**

■ Deposits  
 ■ Leasing  
 ■ Loans  
 — Net

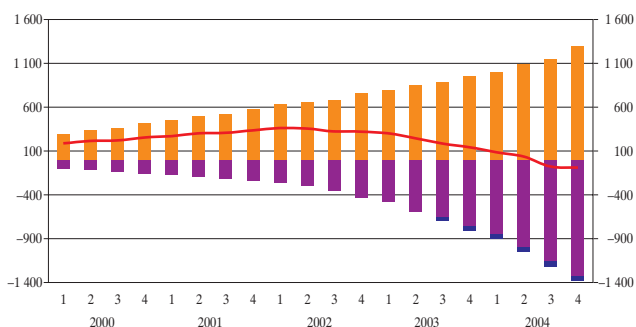
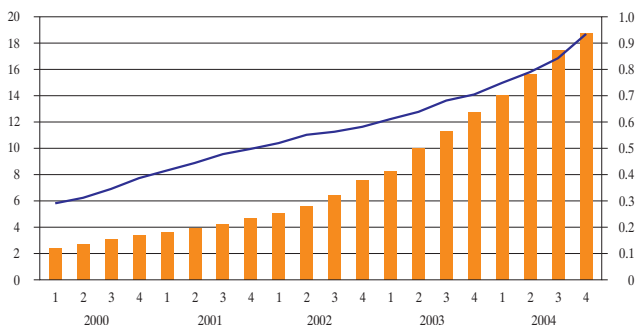


Chart 44

**HOUSEHOLD DEBT<sup>1</sup> AND INTEREST  
PAYMENTS<sup>2</sup>  
(% of GDP)**

■ Total debt of households  
 — Annual interest payments of households (right-hand scale)



<sup>1</sup> To credit institutions, leasing companies and credit unions.

<sup>2</sup> To credit institutions and credit unions.

US dollar in total loans granted to households means increased foreign exchange risk for those households whose earnings are in currencies other than the US dollar. It should be noted that the share of the US dollar in loans granted to households is gradually shrinking. High income of the majority of borrowers will enable absorption of the potential exchange rate increase. Risks are contained also by the fact that paying certain commissions to the bank, the customer can change the loan currency or extend the maturity by reducing the monthly payments, if necessary. Under the circumstances of stiff competition, it is possible to refinance a loan with another bank offering more favourable terms and conditions for the loan. Hence, a negative effect of the base rate growth has been contained in Latvia.

## 10. LEASING COMPANIES

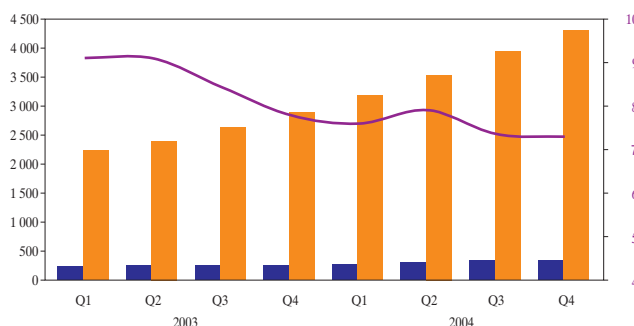
**Transport vehicle leasing posts an expansion, whereas that of real estate and consumer goods is declining.**

In the second half of 2004, leasing companies continued to develop their services and, under fierce competition, used diverse marketing strategies to attract customers. Interest rates posted a gradual rise, causing additional problems for maintaining the attained growth rate of the sector. According to the Latvian Leasing Association data, the leasing and factoring portfolio reached 404.1 million lats at the end of 2004. The financial lease and factoring portfolio, the equivalent of bank loans, amounted to 338.7 million lats. The factoring portfolio reported the highest increase (82.3%). Financial lease posted a moderate rise (9.3%). The share of leasing companies' services regarded as loans in the total of bank and leasing companies' loans continued to decline (see Chart 45), however, the downward trend was very moderate.

Chart 45

**LOANS GRANTED BY BANKS AND LEASING COMPANIES, AND THE SHARE OF LOANS GRANTED BY LEASING COMPANIES TO TOTAL LOANS OUTSTANDING**  
(in millions of lats; %)

■ Loans granted by banks (stock; left-hand scale)  
■ Loans granted by leasing companies (stock; left-hand scale)  
— The share of loans granted by leasing companies to total loans outstanding (right-hand scale)



The diversification degree of the leasing portfolio remained high. The share of the major lessee, the transport, storage and communication sector, was 23.1% in the leasing portfolio, manufacturing and trade businesses were granted 16.2% of the total leasing portfolio each. The share of other sectors in the leasing portfolio was below 10%. Leasing services were increasingly used in almost all sectors: leasing transactions posted a buoyant rise in construction, hotel and restaurant businesses, electricity, gas and water supply businesses. The amount of leasing services provided for transport, storage and communication, agriculture and trade posted a more moderate growth. Although a vigorous rise in the leasing portfolio in almost all sectors can be attributed to a higher competition among leasing companies developing their services and offering them cheaper, the leasing portfolio growth by sector also reflects a buoyant development. This in turn determines their demand for the services provided by leasing companies. The share of leasing services provided to households in the total leasing portfolio declined (to 13.8%). This is related to the banks developing mortgage lending and consumer credit and leasing companies re-orientating to other types of services, including the lending for car purchase.

The leasing portfolio expansion by sector also reflects partly the leasing portfolio by type of asset. As in previous periods, leasing services were mostly used for purchasing cars (40.2%) at the end of 2004. A considerable amount of leasing has been also used for the purchase of commercial vehicles (23.5%). In 2004, the leasing portfolio for the purchase of rail, sea and air transport vehicles reported the steepest rise: it expanded almost six times (to 5.4% {0.9%}). Thus at the end of 2004, transport vehicle leasing reached 63.7% of the total leasing portfolio. The share of consumer goods and real estate leasing in the total leasing portfolio declined: in comparison with 2003, the share of real estate in the leasing portfolio diminished from 10.3% to 3.0%, and that of consumer goods – from 3.0% to 0.9%. In 2004, banks posted very vigorous mortgage lending and consumer credit development, credit card loans were on the rise; moreover, banks used diverse and aggressive marketing strategies to attract new customers and invite current customers to use the above banking services. Leasing companies, however, have ample opportunities to provide services complementary to bank lending.

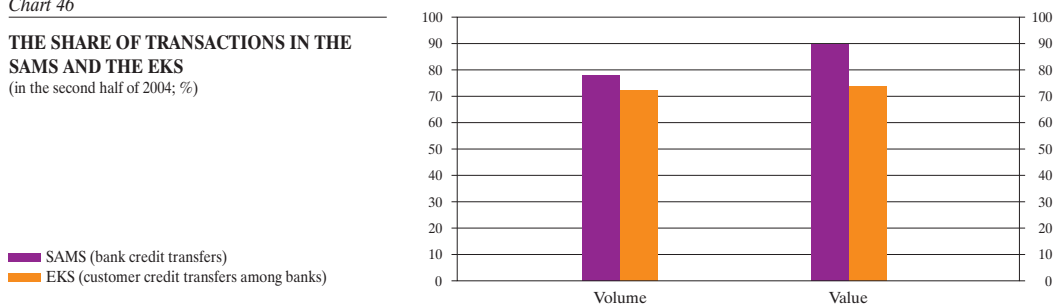
## 11. PAYMENT SYSTEMS

**The Bank of Latvia's Interbank Automated Payment System (the SAMS) stably retains systemic importance in the financial market's payment processing, whereas the significance of the Bank's Electronic Clearing System (the EKS) has increased with the introduction of a second clearing cycle at the beginning of 2004.**

The importance of the SAMS and the EKS in the overall payment infrastructure is characterised by the turnover of each system in the respective segment of the national payment system: the financial sector payments and retail payments. Assessing these systems according to the international oversight criteria, at the end of 2003, the SAMS was classified as a systemically important payment system and the EKS as a systemically prominent payment system, as well as a statement that both systems functioned safely and efficiently was issued. In the second half of 2004, the indicators of the systems' turnover (see Chart 46) also confirmed the substantial role of both systems in lats payments. Of interbank credit transfers in lats, the volume of interbank payments effected in the SAMS amounted to 77.8% (26.6 thousand) and value was 90.0% (14.6 billion lats). The remaining share consisted of Latvian bank mutual credit transfers handled through banks' settlement accounts with other resident banks. Of retail interbank payments, 72.5% (8.9 million) and 73.6% (3.7 billion lats) were made in the EKS, respectively. The residual share was determined by some Latvian bank mutual gross settlements of retail credit transfers.

Chart 46

### THE SHARE OF TRANSACTIONS IN THE SAMS AND THE EKS (in the second half of 2004; %)



The significance of the SAMS and the EKS in lats payments indicates that overall both systems form the core of Latvia's payment system. The stability of both systems hence accounts for the overall payment system stability.

In the second half of 2004, the value of payments processed in both systems amounted to 22.6 billion lats, i.e. six times the GDP value. Payment systems are an essential part of the national economy, and their smooth operation facilitates economic growth rate, and in a long term exerts impact on a rise in cashless money aggregates. In the context of financial stability, it is important for the payment systems to ensure such a quality of payment processing that the financial sector can withstand shocks, thus preventing further processes of a domino effect, which would hinder the use of deposits for investments and processing of economic transactions.

***Box 2. Indicators of a domino effect in the payment systems: concentration ratio and settlement efficiency***

*Systemic risk is the payment systems' major risk. Systemic risk refers to the risk that the failure of a participant in a payment system to meet its settlement obligations or operational failures of the system may cause a domino effect, i.e. another participant's inability to meet its settlement obligations in the system. Any of the financial risks to which participants of payment systems are exposed, might become a source of systemic risk (credit or liquidity risk, as well as operational or legal risk). The domino effect is characterised by a concentration ratio and settlement efficiency.*

*In the context of payment systems, a concentration ratio is calculated as the share of the system's five largest participants according to their turnover in the respective payment system.*

*On the one hand, analysing major interbank payment systems, the concentration of services in some banks is one of the preconditions for an efficient payment system. In order to reach an economy of scale, with every next payment reducing the average transaction costs, a sufficiently large volume of transactions has to be made. The concentration ratio of payment instruments is also assessed. In such a case it should be taken into account that a significant (80%) concentration ratio also implies that the respective banks can service the respective payment instrument on favourable terms. When analysing the concentration ratio, the significance of a respective payment instrument in the overall payment instrument market should also be considered. The concentration ratio is closely related to the market share. Latvian market is small, hence only a few banks can attain the required market share, which is a precondition for efficient operation.*

*On the other hand, the following has to be taken into account: a high concentration results in an increase of a risk that a bank becomes so significant that, in the case of problems, the whole system is impacted. A high concentration ratio in the system accounts for the need to ensure higher standards of settlement security therein. A high concentration ratio in a minor payment instrument market indicates that the development of diverse payment instruments is desirable to reduce risk in the payment system. The value concentration ratio is important for analysing payment systems of the financial sector, whereas volume concentration ratios are topical in the retail payment instrument market.*

*When analysing the domino effect, the efficiency of using settlement funds is also assessed in addition to the concentration ratio. In the case of gross settlement systems, the efficiency with which the system's participants use settlement funds is assessed, determining the proportion of the total value of transactions within a period and the settlement account balance at the end of the period. In the case of gross settlement systems, a higher settlement indicator characterises a more efficient use of settlement funds. In the case of net settlement systems, the efficiency of system participants' settlement obligations is assessed, i.e. the netting effect is not related to the account balance, but to the netting mechanism. The netting effect is the net settlement balance*

as a percentage of the system's gross transaction value. The decline in the netting ratio points to an increase in the system's efficiency, however, in such a case additional attention has to be paid to risk management procedures in the net settlement system at the same time.

The importance of a retail payment system is mainly determined by the volume of transactions conducted therein. The value of transactions is the major indicator of the financial sector's payment system. Volume concentration ratios are also more important for the retail payment systems, as are value concentration ratios for the interbank payment systems.

Being the main domino effect indicators, the SAMS and the EKS concentration ratios retain a stable trend on an annual basis: in accordance with the ECB guidelines, they do not exceed the stipulated limit of systemic risk (80%; see Charts 47 and 48). Such dispersion of liabilities' positions points to a contained domino effect and indicates an overall stability of the respective systems. In the second half of 2004, the SAMS value concentration ratio grew by 1.5 percentage points, whereas the EKS volume concentration ratio shrank by 0.8 percentage point.

In the second half of 2004, the value concentration ratio (71.7%) of the interbank payment system, the SAMS (see Chart 47), was by 8.2 percentage points higher than the volume concentration ratio (63.5%). This could be attributed to the fact that three participants in the system accounted for the bulk of the turnover (51.5% by volume and 54.7% by value), and the fourth largest participant lagged behind 2.2 times in terms of volume; the major participants' share was more evenly distributed by value (the fourth participant fell behind the third one 1.6 times). Both concentration ratios of the retail payment system, the EKS (see Chart 48), were more levelled out: the value concentration ratio (69.6%) was only by 2.9 percentage points higher than that of the volume (66.7%).

Chart 47

#### THE SAMS CONCENTRATION RATIOS (%)

- Volume
- Average volume ratio (half a year)
- Value
- Average value ratio (half a year)

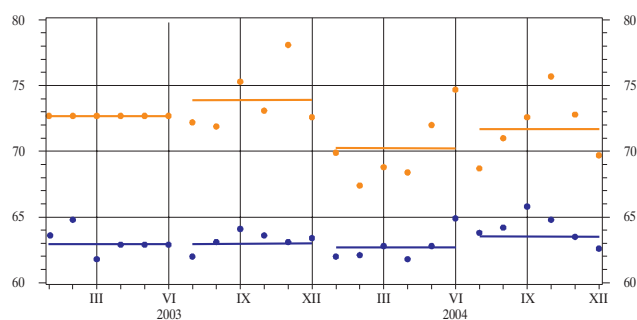
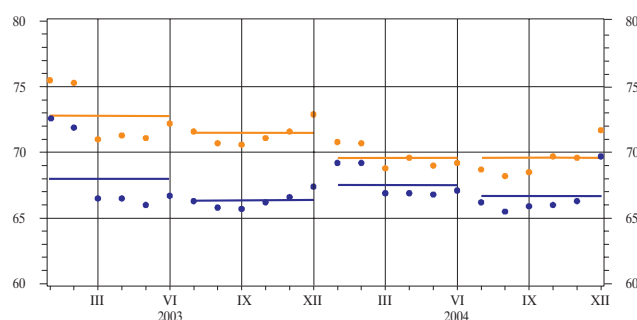


Chart 48

#### THE EKS CONCENTRATION RATIOS (%)

- Volume
- Average volume ratio (half a year)
- Value
- Average value ratio (half a year)



In the second half of 2004, the concentration ratios of both systems were comprised of the Bank of Latvia, three large banks and a medium-sized universal bank that was the most significant one for the respective concentration ratio.

**Banks of the large bank group constitute the core of the SAMS concentration ratio. The efficiency of using settlement funds is higher in the group of medium-sized universal banks. The assessment of the above ratios indicates a dispersion of systemic risk in two of the four Latvian bank groups, thus reducing the vulnerability of the national payment system in the context of financial stability at the same time.**

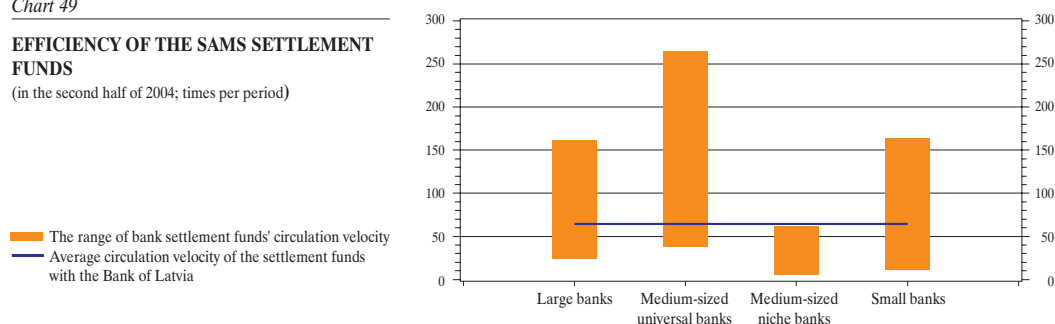
Large banks accounted for the major share of payment volume and value in the SAMS: 52.9% (33.0 thousand) and 56.1% (8.2 billion lats), the share of medium-sized universal bank payments amounted to 21.1% (13.2 thousand) and 29.5% (4.3 billion lats), respectively, that of medium-sized niche banks was 17.8% (11.1 thousand) and 12.0% (1.8 billion lats) and the share of small banks – 8.2% (5.1 thousand) and 2.4% (0.4 billion lats). Concentration of turnover among the banks with most assets indicates a close relation between the asset value and payment turnover.

Settlements in the SAMS are effected with funds in lats held in banks' settlement accounts with the Bank of Latvia. In the second half of 2004, the efficiency of using Latvian bank settlement funds (228.9 million lats at the end of 2004) or the velocity of circulation was 64.3 times. Medium-sized universal banks used the settlement funds most efficiently: average 117.6 times in a period. For one bank in this group, the velocity of settlement fund circulation was 264.5 times a period (see Chart 49). The average efficiency of settlement fund use in other groups of banks was substantially lower: in the group of large banks 78.1, in that of medium-sized niche banks 29.9 and in small banks' group 48.7 times a period. One medium-sized niche bank recorded the lowest efficiency of the settlement fund use (5.6 times a period). Although a settlement account balance is determined by the banks managing funds required for credit transfers, the bank minimum reserve requirement ratio also impacts this balance at the same time. The velocity of account balance turnover shows the activity of bank groups on the financial market.

Chart 49

**EFFICIENCY OF THE SAMS SETTLEMENT FUNDS**

(in the second half of 2004; times per period)



According to the domino effect indicators, large banks prevailed in the financial sector of Latvia as to their value of transactions, whereas medium-sized universal banks dominated in terms of settlement efficiency in the second half of 2004. Hence, the SAMS concentration ratio is mainly comprised of the banks that are less exposed to financial risks, i.e. banks with a lower efficiency of settlement fund use. Banks with the highest efficiency of settlement fund use do not account for the most substantial turnover of the system. Thus in terms of the above ratios, differences among groups of banks levelled out the potential risks of these groups conducting transactions in lats on the financial market, and in the second half of 2004, the SAMS retained an overall stability in the context of domino effect indicators.

The SAMS is primarily the financial sector's payment system that also provides an opportunity to execute urgent customer payments. In the second half of 2004, the



share of the two major payment types in the SAMS was as follows: 39.3% (26.6 thousand financial market payments) and 60.7% (41.1 thousand customer payments) in terms of volume and 82.5% (14.6 billion lats) and 17.5% (3.1 billion lats) in that of value, respectively. Comparing the bank payment and customer payment concentration ratios (see Charts 50 and 51), the concentration ratios of bank payment volume and value were similar, whereas the concentration ratio of customer payment value notably exceeded that of their volume.

Chart 50

#### THE SAMS INTERBANK PAYMENT CONCENTRATION RATIOS (%)

• Volume  
— Average volume ratio (half a year)  
• Value  
— Average value ratio (half a year)

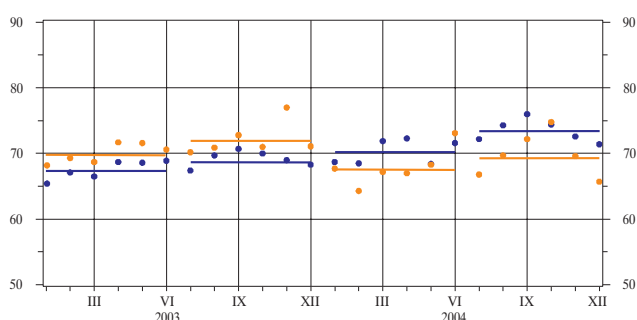
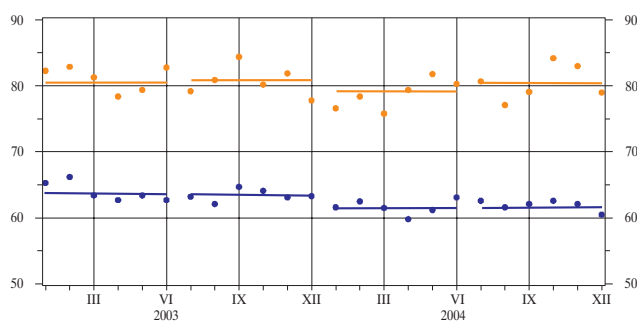


Chart 51

#### THE SAMS CUSTOMER PAYMENT CONCENTRATION RATIOS (%)

• Volume  
— Average volume ratio (half a year)  
• Value  
— Average value ratio (half a year)



The volume concentration ratio of bank payments (73.4%) exceeded that of value (69.3%) by 4.1 percentage points. This difference can mainly be explained by the fact that in the second half of 2004, the volume concentration ratio was comprised of banks executing numerous medium value payments, whereas that of the value involved banks with high averages for single payment values and a high total value of payments. The volume concentration ratio has posted a minor periodic rise (3.2 percentage points in the second half of 2004), whereas the value concentration ratio has increased more moderately (by 1.8 percentage points). The rise in concentration ratios was determined by an increase in the respective banks' activity in the second half of 2004. The volume and value concentration ratios of banks' payments were respectively comprised of the Bank of Latvia, two large banks, one medium-sized universal bank and one niche bank, and the Bank of Latvia, three large banks and one universal bank.

In the second half of 2004, the volume concentration ratio of customer payments in the SAMS was by 18.6 percentage points lower than that of the value. Such a share of concentration ratios indicates that banks with a substantial share in the total value of customer transactions provide more services to corporate customers. The dynamics of customer payment concentration ratios was insignificant: in comparison with the first half of 2004, the volume concentration ratio grew by only 0.3 percentage point, while that of value rose by 1.1 percentage points. In the second half of 2004, the volume and value concentration ratios of customer payments were respectively comprised of the Bank of Latvia and the group of large banks, and the Bank of Latvia, three large banks and one medium-sized universal bank.

Among the banks included in the concentration ratio calculation, the volume of bank and customer payments posted no substantial differences, thus indicating that the respective banks were active in the financial sector as well as executing urgent customer payments. The excess of customer payment volume over bank payments in the SAMS was due to the lesser activity of medium-sized niche banks and small banks on the financial market, i.e. in executing interbank payments. The value concentration ratio trends, being the main indicator of the financial sector's payment system analysis, were determined by those bank payments (the average value of payment per period – 600.7 thousand lats) which substantially exceeded urgent customer payments (the average value of payment per period – 62.9 thousand lats). Thus, the value concentration ratio of total transactions in the SAMS mostly resulted from the operation of those banks in the financial sector, which were included in the concentration ratio of bank payments in the SAMS.

**The EKS concentration ratio is mostly comprised of large banks, and the netting efficiency has reached its high in this group. Several banks have reached such a volume of payments that, as a result of a varied tariff, the use of this system is to their economic advantage.**

**With the introduction of a second clearing cycle in the EKS, the Bank of Latvia fostered the velocity of bank retail payment circulation, thus retail payments could be executed in a day. In the second half of 2004, a higher turnover was recorded in the first clearing cycle, whereas that of the second cycle posted a more vigorous rise. The concentration and netting effect ratios of the second clearing cycle were also similar to those of the first cycle, indicating that both cycles are equally secure in the context of financial stability.**

As in the SAMS, the group of large banks accounted for the largest share of payment volume and value in the EKS as well: 58.2% (4.6 million) and 62.3% (1 959.1 million lats), for medium-sized universal banks this share amounted to 24.0% (1.9 million) and 21.2% (667.6 million lats), for medium-sized niche banks it was 16.5% (1.3 million) and 14.3% (449.2 million lats) and for small banks – 1.3% (0.1 million) and 2.2% (68.6 million lats), respectively.

The EKS is a net settlement system and its netting effect is featured by liabilities settlement effect rather than the circulation velocity of settlement funds, as is the case in gross settlement systems (the SAMS). In the second half of 2004, the total netting ratio of the system accounted for 13.8%. By groups of banks, the group of large banks accounted for the highest netting effect (11.1%) of the EKS. The netting ratio of medium-sized universal banks, medium-sized niche banks and small banks was 15.0%, 15.1% and 16.9%, respectively.

In the second half of 2004, large banks made most of EKS payments, and they also accounted for the highest netting effect. Hence the EKS was most widely and efficiently used by the group of large banks. The Bank of Latvia fostered the economic efficiency of using the EKS through the implementation of a varied tariff at the beginning of 2004. Latvian banks were thus interested to reach a particular number of payments in a given month rendering the payment processing the most profitable. In the second half of 2004, in terms of volume the EKS concentration ratio was determined mostly by those participants in the system who had attained the most favourable tariff: 0.002 lats for the processing of a single retail payment order.

As of January 9, 2004, when two clearing cycles were introduced, banks have ensured the execution of retail payments in a single day. In the second half of 2004, the share of payments processed in the first and second clearing cycles in the EKS amounted to 63.7% and 36.3% in terms of volume and value, respectively.

In the first clearing cycle 5.7 million payments amounting to 2 384.4 million lats were processed and in the second cycle 3.2 million payments in the amount of 1 360.4 million lats. An increase in the transaction volume and value was observed in both clearing cycles in the EKS: in the first clearing cycle the total volume and value of payments rose by 5.6% and 16.1%, respectively, whereas in the second clearing cycle the turnover increased more buoyantly – by 9.3% and 30.2%, respectively.

Comparison of the concentration ratios of both cycles (see Charts 52 and 53) showed that in the first cycle the value concentration ratio was by 5.7 percentage points higher, whereas both ratios were similar in the second clearing cycle. It should be noted that concentration was higher in the second clearing cycle both in terms of volume and value (11.9 percentage points and 5.1 percentage points, respectively). By group of banks, large banks accounted for most of the turnover in both clearing cycles. Although large banks executed fewer payments in the second clearing cycle than in the first one, their share in the total turnover was higher in the second clearing cycle. In the second half of 2004, other groups of banks, in contrast to the group of large banks, increased the share of the second clearing cycle in the total volume and value of payments processed in the EKS. However, as the group of large banks determined the main trend, changes in the share of payments executed by this group in clearing cycles mostly accounted for the changes in concentration ratio, compared with the first half of 2004, i.e. in the first clearing cycle the concentration ratio posted a moderate rise (0.4 percentage point and 1.0 percentage point in terms of volume and value), whereas in the second cycle it shrank (by 4.1 percentage points and 1.2 percentage points, respectively), also fostered by an increase in other banks' activity in the second clearing cycle.

Chart 52

#### CONCENTRATION RATIOS OF THE FIRST CLEARING CYCLE IN THE EKS (%)

• Volume  
— Average volume ratio (half a year)  
• Value  
— Average value ratio (half a year)

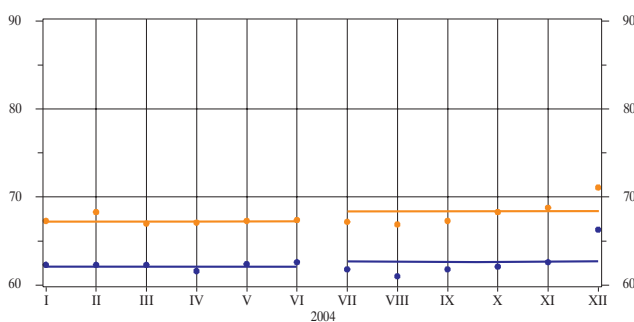
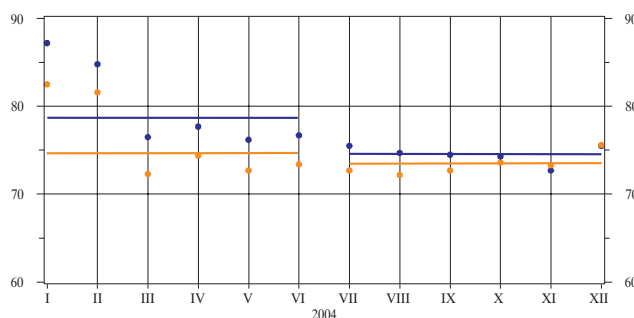


Chart 53

#### CONCENTRATION RATIOS OF THE SECOND CLEARING CYCLE IN THE EKS (%)

• Volume  
— Average volume ratio (half a year)  
• Value  
— Average value ratio (half a year)



The volume concentration ratio of the first clearing cycle was comprised of the Bank of Latvia, three large banks and one medium-sized niche bank, and the value concentration ratio of the Bank of Latvia and four large banks. The volume concentration ratio and the value concentration ratio of the second clearing cycle was comprised of the Bank of Latvia, three large banks and one medium-sized universal bank, which was significant for the respective concentration ratio.

In the second half of 2004, the netting effect of the first clearing cycle (16.6%) was by 3.7 percentage points higher than that of the second clearing cycle (20.3%), indicating that the liabilities settlement by the EKS participants was more efficient in the first clearing cycle or the liabilities were more evenly distributed. This distribution between the EKS clearing cycles was also determined by the second clearing cycle operating for less than a year, therefore customers needed some time for adaptation in order to identify the possibility of executing payments in a day, thereby increasing the rate of transactions. In the second half of 2004, the increase in transactions in the second clearing cycle also fostered a substantial improvement in the netting effect of the respective clearing cycle (10.3 percentage points).

An execution of settlements in two clearing cycles in the EKS fosters more dynamic retail transactions. In the context of financial stability, the concentration ratios in every cycle did not exceed the limit (80%) set by the ECB. In the second half of 2004, concentration ratios of the second clearing cycle were higher, whereas, compared with the previous period, they declined, marking a trend of dispersion of liabilities in the system. The second domino effect indicator, netting effect, was higher, thus confirming the lesser efficiency but, in the event of settlement problems, higher degree of security of the second clearing cycle. The less efficient netting effect in the second clearing cycle resulted in a lower concentration ratio impact in this cycle. With the turnover indicators of both clearing cycles levelling out, it will also impact the concentration ratios and netting effect in the future. Domino effect indicators show that both clearing cycles in the EKS were economically efficient and systemically secure in the second half of 2004.

