



NÁRODNÁ BANKA SLOVENSKA

**Analysis of the  
Slovak Banking Sector  
June 2005**



# Introduction

This report on the results of the analysis of the Slovak banking sector is based on several sources of information. The financial data about individual banks is largely drawn from the NBS's banking supervision and statistical information. Additional sources include data from the Statistical Office of the Slovak Republic (ŠÚ SR), Eurostat, the European Central Bank, and from other external sources and commercial information systems. The document also contains a summary of the most important terms and their definitions.

The logical structure, definition of terms and overall character of the analysis reflects the attempt to make it comparable with the analyses of several central banks of European Union Member States and with the analyses of the European Central Bank. Unless stated otherwise, all financial figures are given in SKK.

# Contents

<b>1 Economic environment</b>	<b>7</b>
<b>2 Main changes and trends in liabilities</b>	<b>9</b>
Customer funds	9
Funds raised by issuing securities	11
<b>3 Main changes and trends in assets</b>	<b>12</b>
Customer loans	12
Investments in securities	13
<b>4 Interbank market and trading with the NBS</b>	<b>17</b>
<b>5 Off-balance sheet</b>	<b>20</b>
<b>6 Profitability</b>	<b>21</b>
<b>7 Capital adequacy</b>	<b>25</b>
<b>8 Risks in the banking sector</b>	<b>26</b>
Household credit risk	26
Corporate credit risk	28
Foreign-exchange risk	30
Interest rate risk	32
Liquidity risk	34
<b>9 Stress testing</b>	<b>36</b>
Methodology	36
Results of stress testing	37
<b>Terminology used</b>	<b>39</b>

## Summary

The first half of 2005 saw continued significant growth in short-term funds from foreign banks, in both foreign and Slovak currency. Banks acquired most of these funds from within their own banking group. The main reason was the appreciation of the currency in the first quarter of 2005 and the existence of an interest-rate differential supported by the opportunity to realize two-week reverse repo transactions with the NBS. A number of banks also acquired short-term funds from the Debt and Liquidity Management Agency (ARDAL).

Corporate deposits stagnated while the volume of retail deposits continued to fall slightly. On the other hand, households invested in mutual funds to an increasing extent. The mutual funds invested part of this money in banks and the volume of such deposits grew. Within retail deposits there was a rise in the share of sight deposits.

The volume of issued mortgage bonds continued to grow, although at a slower pace in the first half of 2005. The volume of mortgage bonds as a share of the volume of mortgage loans remained unchanged from its level at the end of 2004.

Banks deposited the majority of short-term funds from foreign banks and ARDAL with the NBS, and used the rest to finance loans, in particular corporate foreign-exchange loans, and the purchase of NBS bills. In transactions with customers the fastest growth was posted by retail loans, in particular long term housing loans. In contrast to 2004, the first half of 2005 saw significant growth in other types of housing loan (i.e. housing loans other than mortgages, building loans and bridging loans). As well as the growth in retail loans, the volume of loans to financial intermediaries continued to increase.

As regards investments in securities, there was a decline in investments in government bonds, whose yields were falling. An issue of Treasury bills scheduled for the first half of

2005 was suspended. The increase in the purchased volume of mortgages bonds issued by domestic banks slowed down in comparison to 2004. There was an increase in the volume of equity securities issued mainly in Slovakia and the Czech Republic.

The volume of deposits and loans on the domestic interbank market fell slightly, continuing a trend that began in 2003. One reason for this is the possibility to enter into two-week reverse repo transactions with the NBS. The volume share of deposits and loans between banks in the Slovak banking sector is relatively low compared to the size of this share in several EU countries.

The net profit of the banking sector increased year-on-year by almost 10%. In terms of profit formation the most significant growth was recorded by retail sector income and interest income from reverse repo transactions with the NBS. Income from fees continued to grow, while expenses for writing off claims towards customers fell. The average return on equity weighted by volume of own funds in the banking sector grew, while the average return on assets weighted by volume of assets fell, indicating a decline in asset yields. In contrast to 2004 the interest-rate margin of the banking sector decreased. This was largely caused by a decline in yields on securities and a fall in interest income from loans. The level of both interest and non-interest income in individual banks was to a great extent related to their position in the retail market. The operating efficiency of the banking sector deteriorated year-on-year, above all due to the increase in operating expenses.

The indicator of capital adequacy for the Slovak banking sector, which has long had a relatively high value, continued to decrease in the first half of 2005.

The most significant risk to which banks are exposed is credit risk. This is especially true for credit risk related to the high pace of growth in household lending. Even though there is positive development of macroeconomic indicators for the household sector, banks are being forced by increasing competition to loosen credit standards, which in turn may lead to growth in overdue loans. Growth in banks' credit risk could also arise as an effect of the interest-rate risk for households, in a situation where a majority of the loans provided to this sector are tied to short-term interest rates. Similarly, the significant share of corporate foreign exchange loans is putting banks at an increased credit risk in the event of fluctuations in exchange rates.

As regards liquidity risk, it has long been seen to be adversely affected by the time structure of assets and liabilities. On the liabilities side there was an increased volume of short-term funds from the foreign interbank market; the volume of time and saving deposits in retail fell, while the volume of sight deposits increased. On the assets side, however, the volume of long - term retail loans grew, the

growth being faster than that in the volume of issued mortgage bonds. There was also an increase in the volume of short-term funds held with the NBS.

The overall open foreign exchange position of the banking sector remained short and its value is relatively stable. Foreign exchange funds from the foreign banking market grew, and banks used them to increase foreign exchange loans or the open foreign exchange positions were closed by means of derivatives transactions.

The results of stress testing of banking sector stability showed that the recurrence of previous extreme situations in terms of interest-rate and foreign exchange risk would not have a critical impact on any bank. Credit risk would have a more significant effect on the health of banks if new loans began to be non-performing to the same extent as loans provided in the past. Of the four situations applied in the stress testing of liquidity risk, the forecast of a decline in customer deposits by 20% had the biggest impact.

# 1 Economic environment

## Macroeconomic environment in the SR

The strong growth of the Slovak economy continued in the first half of 2005. GDP growth in fixed prices stood at 5.1% in June. The economic growth was supported above all by higher household consumption and the greater creation of fixed capital. Employment rose, while real wages increased significantly and gross disposable household income continued to grow. There was improvement in how the economy is perceived by consumers and the indicator of consumer confidence increased.

The real economy developed positively with growth in industrial and construction production for the first half of the year. In most service sectors there was growth in revenues year-on-year.

From the beginning of the year, the Slovak koruna strengthened against the EUR and weakened against the USD. From March, the NBS cut interest rates by 100 basis points. From the beginning of the year, interest rates on the interbank market fell as did the interest rates for 10-year government bonds. In February, the NBS did not realize sterilization repo tenders. In the first half of 2005, an issue of Treasury bills was suspended.

## Banks in the EU

The profitability of banks in the EU increased in the first half of 2005 compared to the same period of the previous year. The main determinants of profitability growth were the decline in the creation of provisions, the growth in household lending, and the reduction of operating expenses.

Low interest rates and competition between banks put pressure on the interest-rate margin of banks. Income from fees continued to grow.

As household lending grew, so did the credit risk for banks. Despite the relatively positive development of the macroeconomic data for the

household sector, its growing indebtedness is increasing the risk of default on its obligations.

The EU saw a recovery in corporate financing, especially in the growth of loans to small and medium-sized enterprises.

The risk to which EU banking sectors are most exposed is further growth in the price of crude oil. It is expected that continuing growth in the crude oil price may be negatively reflected in the quality of loans.

## Internal banking environment

The banking sector was enlarged by the entry of HSBC Bank plc, a foreign bank branch. As at June 2005 there were 22 credit institutions operating in Slovakia.

There was minimal change in the concentration of assets in the first half of 2005. The share of assets of the three largest banks in the sector (C3 Index) fell slightly, from 51.7% in January to 49.9% in June. On the other hand, the share of assets of the five largest banks (C5 Index) increased slightly, from 65.9% to 66.4%. In the first half of the year, the Herfindahl Index<sup>1</sup> (HI)<sup>1</sup> was fluctuating between 1112 and 1141, while its level in June was 1128. When interpreting changes in the values of the concentration indices it is necessary to take into consideration the growth in the share of short-term transactions with the NBS. The concentration of assets is therefore not reflected in the concentration of typical banking operations of Slovak banks. That is why we also show the independent concentrations of retail loans and corporate lending.

The retail sector is one of the most concentrated activities in the banking sector. This is true despite the slight decline in all three indicators in the first half of 2005. The C3 Index fell from 65.3% to 64.8% and the C5 Index from

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<sup>1</sup> According to the definition of the US Department of Justice, a market is deemed highly concentrated if the HHI level exceeds 1800 and it is non-concentrated if the value is less than 1000. The HHI level for the EU's integrated banking market is 579.

81.1% to 80.7%. The HI level declined from 1643 to 1624.

The higher competition in the corporate sector is also borne out by the fact that its concentration is lower than that of retail. The changes in the C3 and C5 levels are more volatile

and it is not possible to interpret them as a decrease. In June 2005, the C3 and C5 indices had levels of 40.3% and 58.6%, respectively. The more equal spread of activities is indicated above all by the HI level, which fell year-on-year from 968 to 942.



## 2 Main changes and trends in liabilities

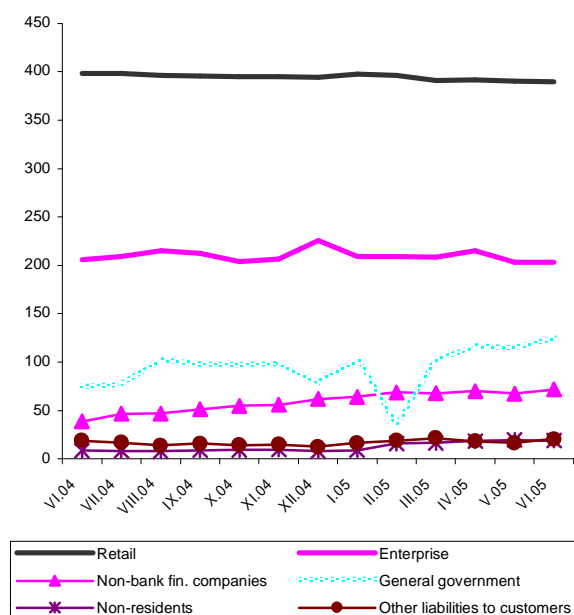
A significant trend on the liabilities side continues to be the growth in short term-funds from foreign banks, especially from within the same financial group. The liabilities structure of several banks was to a large extent affected by Debt and Liquidity Management Agency, which deposited large volumes of funds in banks. On the other hand, the volume of household deposits in the banking sector fell slowly, and corporate deposits also did not grow. As funds increased in volume and short-term share, so it became more volatile and partly speculative.

Mortgage bonds continued to be issued in the first half of 2005, albeit at a slightly slower pace. The volume of issued bills of exchange further increased.

### Customer funds

Customer deposits continue to account for the largest part of liabilities in the Slovak banking sector. Year-on-year they grew from 745 bn to 825 bn SKK. The biggest growth was in the deposits of ARDAL and mutual funds. Due to the increasing volume of funds from the interbank market, however, the share of customer funds fell year-on-year, from 71.2% to 61.8%.

Chart 1 Structure of customer deposits



- source: NBS
- data is in SKK bn

In general, however, it may be said that despite of the growth in funds from foreign banks, most Slovak banks rely on customer deposits for financing their activities. Deposits are dominated by household funds, which banks acquire directly from small depositors or indirectly through investments of mutual funds in banks.

The changes in structure of customer deposits were influenced above all by strengthening of the Slovak koruna, low interest rates and growth in household disposable income.

### Fall in retail deposits

Household deposits account for more than 90% of retail deposits. The rest comprises deposits of self-employed persons (5.7%) and non-profit organizations (3,9%). Whereas deposits of self-employed persons and non-profit organisations grew slightly, household deposits fell by 12 bn SKK (from 365 bn to 353 bn SKK).

The decline in household deposits came about largely with the fall in foreign-currency time deposits. The share of foreign-currency retail deposits fell in June to 10.6% compared to 12.6% in June 2004. Household koruna deposits remained at approximately the same level with the only change being in their time structure. The volume of time and saving deposits fell, while funds held in current accounts grew, mainly in connection with increasing household disposable income. The decline in fixed-term funds was accompanied by growth in mutual fund investments.

Interest rates on retail deposits fell in all categories - sight, time and saving deposits.

### Funds of non-financial companies

Corporate funds continued to represent the second most significant component of customer deposits.

In analysing corporate deposit accounts it is very difficult to make out trends; the development of items has followed a more volatile course in comparison to retail. In December 2004 corporate deposits grew slightly, and in June 2005 they fell back to their level of June 2004. Overall, the volume of funds from enterprises moved in the range of 203 bn to 226 bn SKK. The share of foreign-currency deposits fell year-on-year, from 20.8% to 17.9%, a development similar to that of retail deposits.

### Bank deposits of financial companies

Funds acquired by the banking sector from the financial sector (other than banks) are the fastest growing item of liabilities. From June 2004 to June 2005 they grew by 85% (from 38.7 bn to 71.7 bn SKK). Their fixed term and currency structure makes them distinctive from corporate deposits.

Financial company deposits are predominantly time deposits (92.8% in June 2005). It is time deposits that accounted for the growth in financial company deposits. From January 2005 they grew from 58.1 bn to 66.6 bn SKK. Growth in time deposits was caused almost exclusively by mutual fund deposits, which from December 2004 to June 2005 increased from 19.4 bn to 30.8 bn SKK. Sight deposits of financial companies in 2005 moved in a range from 4.9 bn to 6.5 bn SKK.

What distinguishes the deposits of financial companies from corporate deposits is the particular investment nature of the funds that they, especially mutual funds and pension funds, deposit in banks. In contrast to corporate deposits, that have more operational character, these funds are deposited with the aim of increasing their value. In the case of several

banks, the mutual fund is a subsidiary into which the funds of small customers are transferred from saving deposits in the bank.

The funds that banks acquire from mutual funds originate to a great extent from households (Table 1).

**Table 1 Flow of household funds**

	June 2004	June 2005	Change
Household deposits in banks	364 702	352 644	-12 058
Household deposits in MF	26 592	78 972	52 380
MF deposits in domestic banks	9 938	31 880	20 843

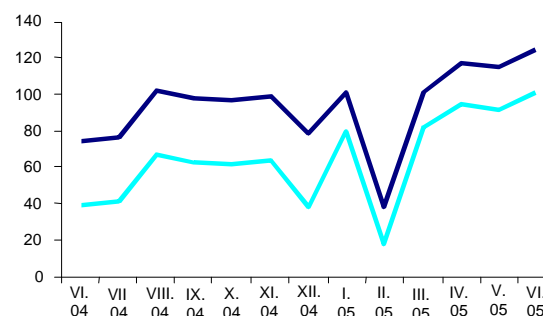
- source: NBS
- data is in SKK mil
- MF – mutual funds

### General government deposits

The volume of funds deposited in banks by general government grew over the previous twelve months. The majority of these are deposits of Debts and Liquidity Management Agency, which are short-term and volatile funds. The volume of the other general government deposits fell slightly year-on-year.

Banks invested the major part of ARDAL funds into reverse repo transactions with the NBS. These funds were absent from the banking sector in February 2005 when the NBS did not realize two-week repo transactions with banks.

**Chart 2 General government deposits**



- General government deposits
- Deposits and non-budgetary funds of state authorities

- source: NBS
- data is in SKK bn

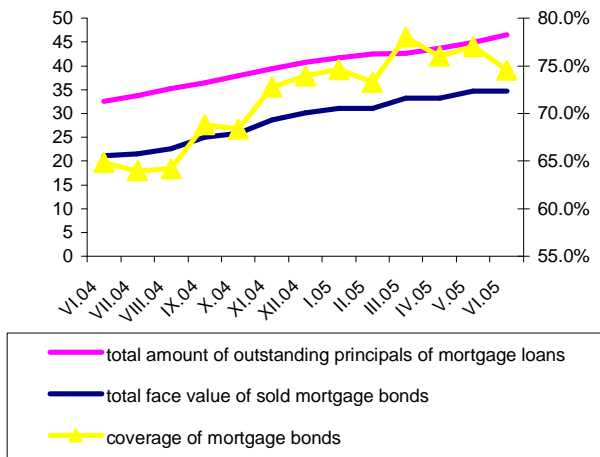
## Funds raised by issuing securities

### Mortgage bonds

The growth in the volume of issued mortgage bonds continues a trend in the banking sector that was noted in December 2004. The rate of mortgage financing with mortgage bonds did not, however, change significantly from the beginning of the year.

Issues of mortgage bonds for which at least 90% of the principal must be repaid by the end of 2006 were catching up more slowly in the first half of 2005. The total nominal value of issued mortgage bonds as a share of the total of unpaid principals stood at 74.6% in June. Within particular banks this figure varied from 50% to 90%. Apart from mortgage bonds, no other long-term debt securities were issued.

**Chart 3 Mortgage financing with mortgage bonds**



- source: NBS
- the left vertical axis shows data in SKK bn; the right axis shows the coverage of mortgages by mortgage bonds in %

### Bills of exchange

Bills continued to be issued and in the first half of 2005 their volume grew from 10 bn to 13.2 bn SKK an historically the highest level. However their share of total liabilities remained of minor significance, reaching 1% in June.

One possible reason for the growth in financing with bills is the attempt by banks to optimise contributions to the Deposit Protection Fund.

### Changes in the liabilities of banks in the EU

It is fitting to compare the development of liabilities among banks in the Slovak Republic with the changes that have taken place over recent years in the fund structures of banks in the EU.

Given the very limited growth in deposits, banks have been forced to diversify funds using balance sheet and off-balance-sheet instruments. The main reason for this is the increasing rate of investment in pension funds, the change in composition of household and corporate financial assets, the change in bank strategies and the low rates of interest.

There has been growth in the securitization markets in several EU Member States. The biggest part of asset-backed securities, almost 50%, comprises residential mortgage-backed securities. Among the originator's main reasons are, for example, the reduction of risk-weighted assets and therefore also capital relief, the acquisition of longer-term funds, and the opportunity for arbitrage with interest-rate spreads.

In this regard the position of banks on the risk transfer market has changed. Banks are, on the one hand, preserving their staple operation of financial intermediation, while on the other hand they are increasingly active in the sale of credit risks to third parties. This activity of banks may continue to grow if enterprises or the government assume the position of an originator of securities, which banks then sell on to investors.

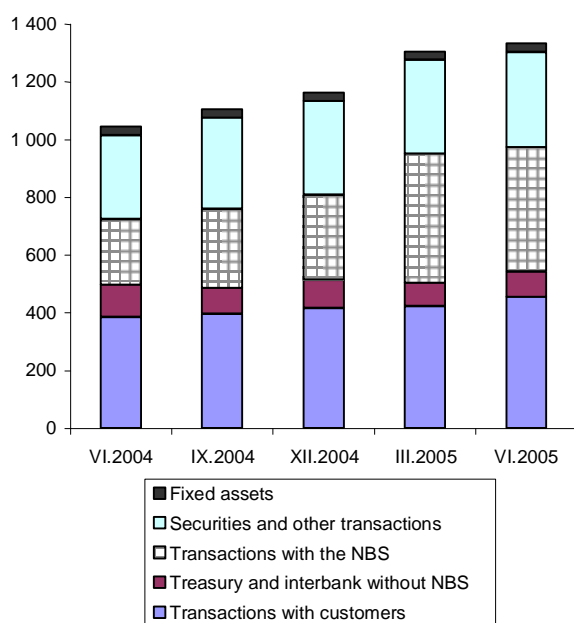
### 3 Main changes and trends in assets

In this part we focus on the analysis of the main changes and trends in transactions with customers and with securities in terms of the composition of the respective assets. The analysis of interbank assets is described in the section "Interbank market", where it is tied in with the analysis of interbank liabilities.

As regards the analysis of main asset aggregates, prominence is given to the fact that growth in the volume of customer loans and in investments in securities has not managed to temper the pace of growth in interbank assets, created mainly by reverse repo transactions with the NBS. Among customer loans, there continued to be high growth in retail loans and somewhat lower growth in loans to financial companies.

Among the most significant changes in securities investments were the change in the volume of Treasury bills caused by the suspension of their issue, the purchase of mortgage bonds issued by domestic banks and the bonds of foreign banks, and the growth in domestic and foreign equity securities.

**Chart 4 Asset structure development**



- source: NBS
- data is in SKK bn, in net figures

#### Customer loans

Despite the growth in customer loans, from 385.7 bn in June 2004 to 455.2 bn in June 2005 (a rise of 18%), their share of total assets fell over the same period from 37% to 34%. This is largely a consequence of fast-growing active

transactions with the NBS, in particular reverse repo transactions and the purchase of NBS bills.

Koruna loans continue to be prevalent among customer loans. Foreign-exchange loans, which posted faster growth, accounted for 24.6% of customer loans.

**Table 2 Sectoral structure of loans**

	VI. 2004	VI. 2005	Change
Retail loans	108.3	152.5	40.7%
Corporate loans	241.0	251.4	4.3%
Loans to financial companies other than banks	30.0	39.1	30.5%
General government loans	21.3	22.9	7.6%
Loans to non-residents	11.6	12.7	9.3%

- source: NBS
- data is in SKK bn, in gross figures

#### Retail loans

Although there are banks that are not doing retail business, the overall significance of retail is growing. The biggest share of retail loans is made up of those loans with a maturity of more than five years, which in terms of volume correspond to a considerable extent with housing loans.

Retail loans are dominated by households, which consistently account for approximately 91% of the retail portfolio. In June 2005, household loans stood at 139 bn. The most important products

are housing loans (mortgages, building loans, interim loans and other housing loans), which make up approximately two-thirds of household loans.

The pace of growth in household lending has accelerated over the past two years, so far dispelling speculation about saturation of this segment and confirming the low initial indebtedness of households. Retail loans are to a large extent represented by mortgage loans. The concentration in mortgage loans is even higher than the concentration of total assets. Whereas the C3 Index of total assets stood at 49.9% in June 2005, the three largest banks accounted for 70.9% of mortgages. There may, however, be noted a certain negative dependency between market share and rate of growth.

Although in some banks the volume of mortgage loans did not grow, there was instead a more dynamic increase in other housing loans. These may be understood as a parallel product to mortgage loans, which need not be financed by the relatively expensive issue of mortgage bonds.

Retail foreign-exchange loans as a share of total retail loans stood at only 1% in June 2005, but their volume recorded a fourfold increase year-on-year. The main contributors to this growth were housing loans denominated in EUR and overdrawn current accounts maintained in foreign currency.

While loans to self-employed persons have a less significant share of total retail loans, their pace of growth almost matched that of household loans.

Loans to non-profit organisations continue to have a negligible share, 0.2% of total loans, yet nevertheless reported growth of 230% year-on-year.

### **Corporate loans**

Corporate loans remain the most significant subaggregate of customer loans. Their volume grew year-on-year by 4.3% (from 241 bn to 251 bn) in contrast to the fall reported at the end of

2004. The de facto single cause of the growth was foreign-exchange loans. Koruna loans with some volatility stagnated.

### **Loans to financial companies other than banks**

Financial companies are increasingly significant counterparts of Slovak banks. Whereas deposits are largely the domain of pension funds and mutual funds, loans are mainly provided to other financial intermediaries.

The volume of loans to financial companies grew year-on-year from 30 bn to 39 bn, a rise by 31%. Their currency structure shifted slightly in favour of foreign-exchange loans. Koruna loans still dominate however, and their share of total loans to financial companies stood at 78% in June 2005.

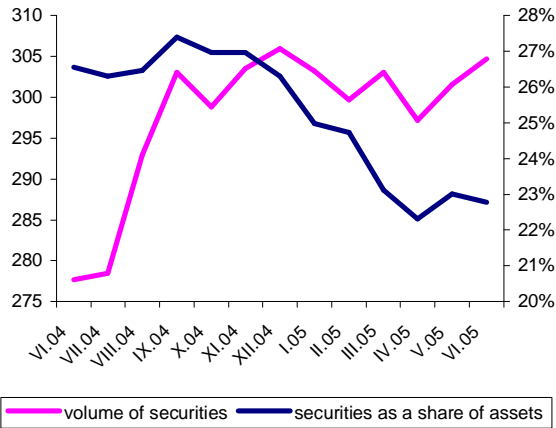
### **General government loans**

General government loans are relatively stable within the context of the sector. In 2004 their total volume grew, while in the first half of 2005 it fell slightly. The share of koruna loans is falling. General government loans as a share of total loans fluctuated from June 2004 between 4.8% and 5.8% (with the exception of December, when they grew to 8.3%).

### **Investments in securities**

The importance of securities in the Slovak banking sector remains high. The total net volume of investments in securities grew from 277.7 bn in June 2004 to 304.7 bn in June 2005. As with loans, this growth was less than the growth in interbank assets, which resulted in securities falling as a share of total assets from 26.6% to 22.9%.

**Chart 5 The volume of securities and securities as a share of assets**

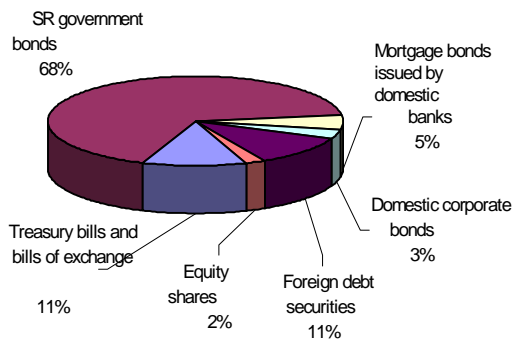


- source: NBS
- data on the left axis is in SKK bn
- the axes indicate:
  - o left vertical- volume of securities
  - o right vertical- securities as a share of assets

**Government bonds**

Slovak government bonds dominate the portfolios of all Slovak banks that trade in securities. As a share of the total volume of investments in securities, however, they fell year-on-year from 75% to 69%.

**Chart 6 Structure of the securities portfolio of the banking sector in June 2005**

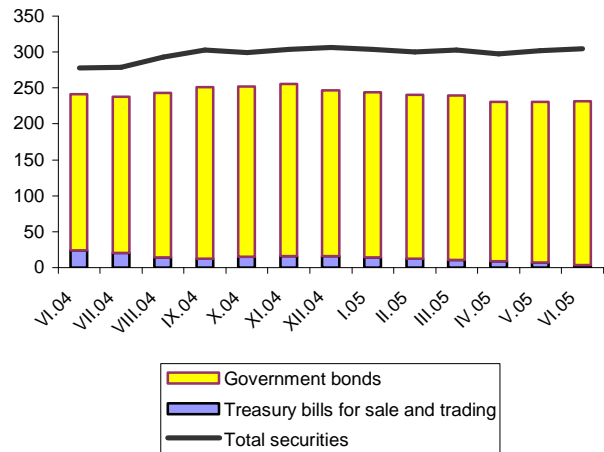


- source: NBS

Besides the decline of investments in government bonds, the volume of Treasury bills fell over the previous twelve months, from 28.4 bn in June 2004 to 5.0 bn in June 2005. This

was due to the suspension of their issue in the first half of 2005.

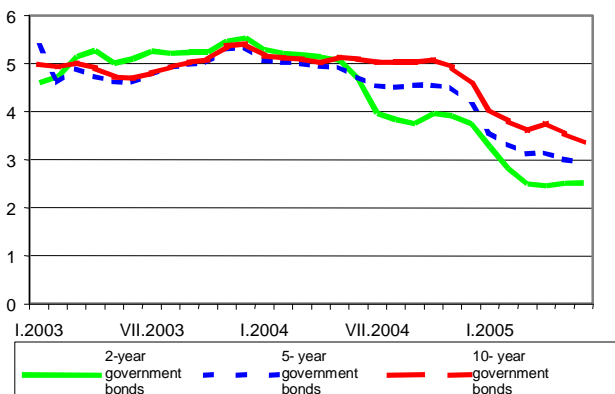
**Chart 7 Development in the volume of government bonds and Treasury bills**



- source: NBS
- data is in SKK bn

The reduced investments in government bonds may be linked with the reduction in their issue, but also with the lower demand shown by banks due to the lower yields. In June 2005, newly issued government bonds were already yielding less than were two-week repo transactions with the NBS.

**Chart 8 Development in government bond yields since 2003**



- source: NBS
- figures are in %
- in the period X.2003 – XII. 2004 the yield on 2- and 5-year bonds is estimated by using the yield on 3- and 6-year bonds

Investments in non-resident government securities did not change significantly, their volume in the banking sector fluctuated from the beginning of the year in a range from 3.3 bn to 4.7 bn.

### Bank and corporate bonds

The second most important item of assets in the banking sector are bank bonds. More than half of them are bonds issued by domestic banks. Since these are exclusively mortgage bonds, their purchase slowed down in the first half of 2005 alongside the slowdown in the issue of mortgage bonds. The subdued purchasing of mortgage bonds could also be linked to their placement in pension fund management companies. Apart from growth in the purchase of bonds of domestic banks, the volume of purchased bonds issued by foreign banks is increasing. The volume of bonds issued by domestic and foreign enterprises and by financial companies other than banks recorded a slight fall.

### Corporate bonds

The volume of domestic corporate bonds fell gradually, from 12.8 bn in October 2004 to 11.7 bn. As regards the volume of foreign corporate bonds in the banking sector, emitted by financial and non-financial enterprises, it stood at 17.8 bn in June 2005. It may be noted, too, that this group of securities fell slightly from the beginning of the year.

### Equity securities

Equity securities were over the past 12 months the fastest growing category of securities in the banking sector. They are mostly represented by financial investments in subsidiaries. Of the total volume of domestic securities, shares account for around one third.

The increasing volume of foreign equity securities is less dynamic and in general may not be considered to be a trend in the banking sector.

**Table 3 Changes in the structure of purchased securities**

	VI.2004	VI.2005	Change
<i>Securities issued by residents</i>			
Corporate bonds	12.1	11.7	-3%
Mortgage bonds	11.4	17.9	57%
Equity securities	3.6	6.9	94%
<i>Securities issued by non-residents</i>			
Debt securities	34.8	35.3	1%
of which: issued by banks	11.7	14.1	21%
of which: issued by general government	3.8	3.3	-12%
of which: issued by enterprises and financial companies	19.3	17.8	-8%
Equity securities	1.9	2.4	28%
Total	36.7	37.7	3%

- source: NBS

- data is in SKK bn, in gross figures

### Hedge funds

In May 2005 the NBS conducted a survey on banks' exposure to hedge funds, as part of a wider ECB survey. The direct exposure of Slovak banks to hedge funds is, in relation to their total assets and also income, negligible. It cannot be ruled out, however, that involvement in this type of investment will grow in the future, especially as a consequence of the low rate of return in other types of activities.

Notwithstanding the relatively minor exposure of Slovak banks to hedge funds, the NBS is monitoring the significance of bank investments in hedge funds. In the short-term, the NBS is drafting an instruction for banks exposed to hedge funds, while at the same time there should be emphasis on risk management.

The indirect exposure of the banking sector to hedge funds remains an issue. While hedge funds have a direct effect mainly through financing activities, investment and the provision of brokerage services, they may indirectly influence banks through their counterparts or through their influence on the financial market.

Despite growing fears about the impact of hedge fund activities on financial stability, it seems that there have been substantial qualitative changes compared with the period that saw the crash of Long-Term Capital Management (LTCM) in 1998. Hedge funds are contributing to the increase in market liquidity and also to the greater sophistication of financial markets. During recent years there has been an improvement notably in the level of risk management among banks exposed to hedge funds. In this regard, banks are using special and advanced methods for risk management, in particular stress testing, while at the same time the importance of utilising collateral has increased, hedge funds have

improved their discipline in providing information, and their leverage has fallen in comparison with 1998.

On the other hand, given that the high growth in hedge funds has significantly increased the competitive environment, and despite certain positive trends, there remains the issue of hedge fund transparency. The growing number of hedge funds has reduced the scope to use market arbitrage. Some crisis situations in recent years have to a certain extent cast doubt on the proposition that investments in hedge funds have a diversifying effect. This relates largely to the capacity of hedge funds to change quickly their investment strategy.

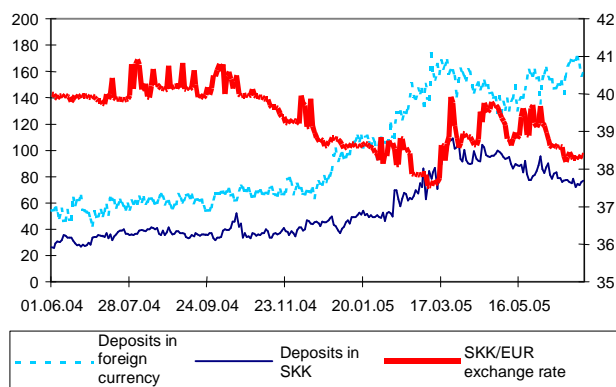


## 4 Interbank market and trading with the NBS

*The significant growth of funds from the foreign interbank market continued in the first half of 2005 with banks acquiring most of the funds from within their own banking group. These funds came in both foreign currency and the Slovak koruna. Their volume was affected to a large extent by the development of exchange rates, but it was not influenced by the suspension of reverse repo transactions in February 2005. Banks deposited most of these funds with the NBS. Using reverse repo transactions, the NBS also performed sterilization operations for Dept and Liquidity Management Agency (ARDAL) funds. Compared with the preceding period, there was increased growth in the volume of interbank market funds of longer maturity. In the long-term, the high growth in the volume of interbank market funds from NBS sterilization operations is related to the decline in deposit and lending transactions between banks.*

The development of the interbank market was affected by many factors: the changes of the SKK/EUR exchange rate, the reduction of the NBS basic interest rate by 1 percentage point, the suspension of sterilization repo transactions by the NBS, the suspension of the issue of Treasury bills in the first half of 2005, and the persisting interest-rate differential between basic interest rates in the EU and the Slovak Republic (1 percentage point up to the end of the half-year).

**Chart 9 Development in the volume of koruna and foreign-exchange deposits from foreign banks and the SKK/EUR exchange rate during the first half of 2005**



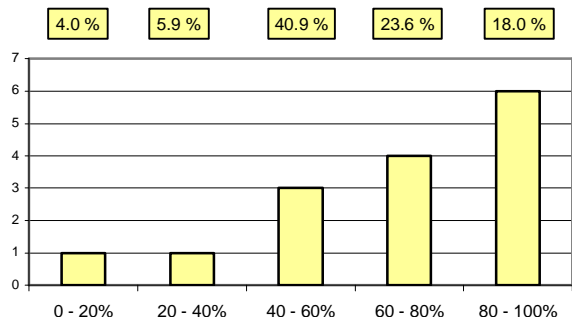
- source: NBS
- the axes indicate:
  - o left vertical: volume of deposits in SKK bn
  - o right vertical: level of the SKK/EUR exchange rate
- the data does not include the account "branches and representations"

The appreciation of the Slovak currency during the first quarter of 2005 contributed to the continuing high growth of the foreign-exchange funds that banks acquired from the foreign interbank market. From the end of November 2004 until the end of June 2005 the volume of these funds more than doubled, from 86 bn to 196 bn SKK (including the account "branches and representations"). The growth of foreign-exchange funds and their exchange for the Slovak currency was, however, less attractive from March 2005 due to depreciation of the koruna. In general, it may be concluded that there was a strongly positive dependency between the Slovak currency's rate of appreciation and the volume of foreign exchange funds acquired from the foreign interbank market.

Along with the growth in foreign-exchange funds from the foreign interbank market, the first quarter of 2005 saw high growth in koruna funds. They increased during this period from 44 bn to 110 bn SKK, and then in the second quarter fell back to 80 bn SKK. For most banks, the great majority of these funds (more than 80%) came from banks within their own banking group. Some banks proved the exception, acquiring koruna funds from foreign banks that did not belong to their own banking group. This was probably caused by the global situation in the European financial market, where foreign investors increasingly purchased the currencies of Central European countries, and therefore also

the Slovak koruna. After foreign investors closed positions in March 2005, the volume of these funds gradually fell. In June 2005, the funds provided to banks from within their own banking group accounted for around two thirds of all funds from the foreign interbank market.

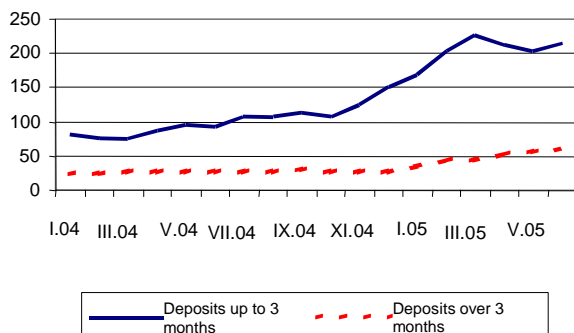
**Chart 10 Breakdown of funds from own banking group as a share of the total volume of funds from foreign banks**



- source: NBS
- the vertical axis shows the number of banks
- the percentage above each column represents the assets of the banks in that column as a share of total assets in the sector
- the chart does not show banks that have a low share of funds from foreign banks

Whereas in 2004 the growth in funds from foreign banks was exclusively accounted for by short-term funds with a maturity of up to 3 months, in 2005 there was also growth in the volume of funds with a longer maturity.

**Chart 11 Maturity of funds from commercial banks**

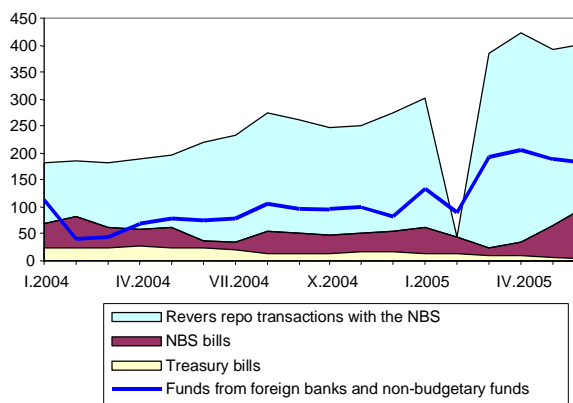


- source: NBS
- data is in SKK bn

In contrast to the previous period, when such sources were used predominantly by small banks for liquidity management in the provision of long-term corporate loans, the first half of the year saw an increase of these funds in a number of other banks.

In connection with the growth in funds from the foreign interbank market and the abovementioned increase in short-term funds from ARDAL, there was continuing growth in the funds deposited by banks with the NBS. The high growth in these funds was recorded mainly during the first quarter of 2005. From the end of 2004 they grew in value from 240 bn to 424 bn. The year-on-year growth in the volume of these funds was more than threefold.

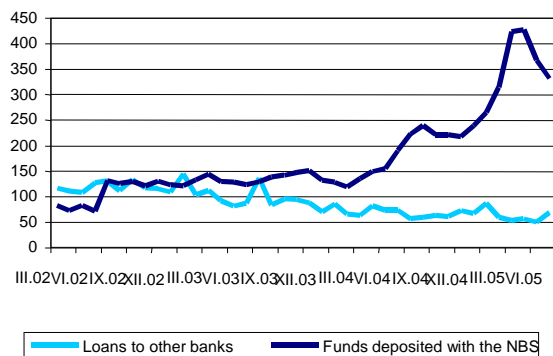
**Chart 12 Comparison of the volume of funds from the foreign interbank market and from ARDAL and the volume of assets on the interbank market**



- source: NBS
- data is in SKK bn
- including NBS bills and Treasury bills only held for trading and sale

A trend observable since the beginning of 2004 is high growth in the volume of assets that the NBS draws from the interbank market in sterilization operations. At the same time, since 2003 there has been a noticeable decline in lending by banks to other domestic or foreign banking institutions.

**Chart 13 Long-term development in the volume of funds deposited with the NBS and other commercial banks**



- source: NBS
- data is in SKK bn

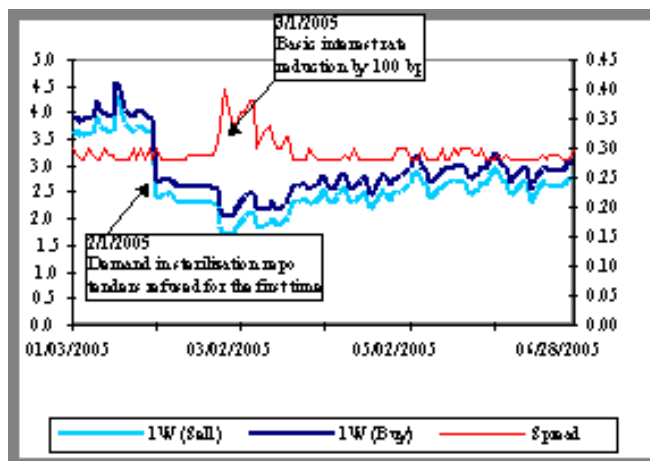
For several banks, the growth in the volume of assets placed in reverse repo transactions was followed by a recurring decline in the second quarter of 2005. One reason was the previously described exchange-rate development and probable withdrawal of short-term capital by foreign investors. That said, the first issue of NBS bills for almost three months took place on 15 April 2005, and some banks directed part of their free funds into the purchase of these bills (around 76 bn in total).

Besides the mentioned growth in funds from the foreign interbank market and ARDAL, which were placed mainly in sterilization transactions with the NBS, two other facts had an influence on the domestic interbank market. First, it was not possible to place funds in two-week repo transactions in February 2005. Nor was there the alternative of investing in an issue of Treasury bills since these issues were suspended during the first half of the year. In the only issue of NBS bills to take place in the first quarter, there was demand of 47 bn but only 25 bn was satisfied. This led to a high surplus of liquidity and a reduction in interbank rates. Although in

February there were no ARDAL funds in the banking sector, the volume of funds from the foreign interbank market did not decrease. Banks in fact placed these funds in one-day transactions with the NBS.

During the first quarter of 2005, however, the volume of transactions between domestic commercial banks fell. Among the contributing factors was a reduction in the NBS basic interest rate by 1 percentage point from 1 March, while at the same time there was the renewed possibility to take part in reverse repo transactions with the NBS (the total demand was from the outset not satisfied). The interbank rates reacted with an increase in the spread between the buy rate and sell rate, which contributed to a decline in the volume of interbank transactions.

**Chart 14 Development of the interbank interest rate BRIBOR**

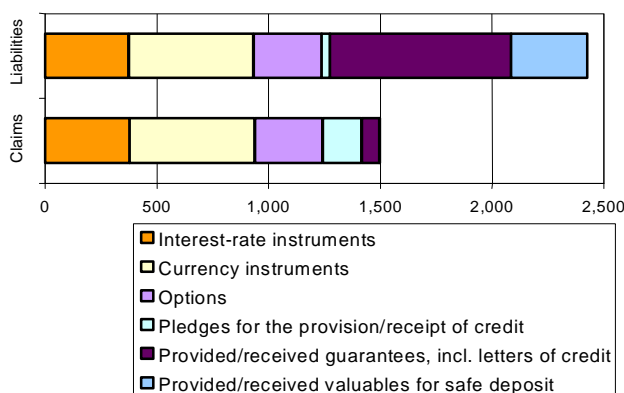


- source: NBS
- data is in percent
- the right vertical axis shows the BRIBOR values; the left axis shows the spreads between the buy and sell rate

## 5 Off-balance sheet

The volume of figures recorded in the off-balance sheet exceeds the size of the balance sheet for the banking sector and it even doubled on the liabilities side. In the first half of 2005, the main growth was in the volume of currency instruments, collateral received in repo transactions with the NBS, the volume of guarantees provided by banks, and the valuables received by banks for safe deposit.

**Chart 15 Structure of the off-balance sheet in June 2005**



- source: NBS
- data is in SKK bn

### Currency instruments

Currency instruments were the most dynamically growing part of the off-balance sheet in the first half of 2005. We include in them spot and forward currency instruments and currency options. Having posted high volume growth in 2004 (81%), currency options increased this pace still further. During the course of the first half of 2005 the real value of underlying instruments for these options increased by more than 120%. Options other than currency options had a share of less than 1% in the banking sector.

Along with currency options, the volume of underlying instruments in forward currency transactions also grew dynamically. Compared to a slight decline in 2004, it increased almost twofold during the first half of 2005.

### Interest-rate instruments

The value of underlying assets for transactions with interest-rate instruments moved in the range from 300 bn to 430 bn without showing a clear trend. As for transactions in interest-rate instruments concluded with foreign counterparts, their share grew. In May, the volume of interest-rate instruments increased in several banks and grew month-on-month by 75 bn. In June it fell again.

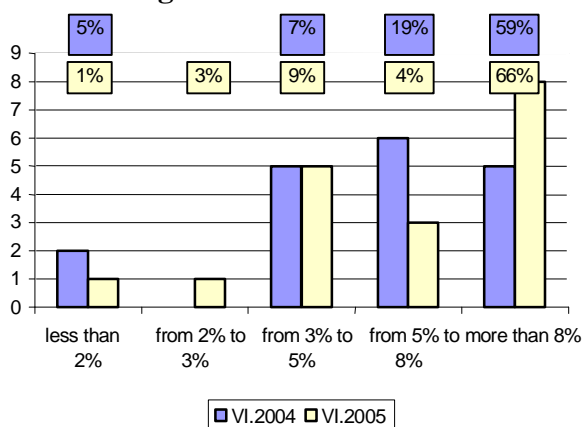
### Other off-balance-sheet transactions

Another item with high growth was received guarantees. This was mainly related to the increase in the volume of securities that banks received in reverse repo transactions with the NBS. The volume of guarantees received by banks stood at 78 bn, a twofold increase year-on-year. The same pace of growth was recorded in valuables received by banks for safe deposit. Their volume came to 250 bn at the end of the reviewed period.

## 6 Profitability

The banking sector made a net profit of 7.6 bn for the first half the year, an increase of almost 10% year-on-year. The average return on equity (ROE) weighted by size of own funds, which expresses the return on the funds of banks' shareholders, increased to 9.7% in the first half of 2005 compared to 8.7% in June 2004. Profitability growth in the banking sector was supported largely by the household sector, an increase in revenues from the NBS, and a year-on-year fall in the costs of writing off claims against customers.

**Chart 16 Breakdown of the ROE indicator in the banking sector**



- source: NBS
- the vertical axis shows the number of banks
- the percentage above each column represents the assets of the banks in that column as a share of total assets in the sector

The profitability of assets declined year-on-year: the average ROA weighted by volume of assets fell from 0.66% to June 2005 level of 0.57%, while the weight represented the size of assets. The fall in this indicator indicates a decrease in asset yield in the banking sector, a consequence of the high growth in funds deposited with the NBS.

### Growing importance of the household sector in terms of profit generation

Households turned out to be a key sector for banks in terms of profit-generation by individual sectors.

**Table 4 Year-on-year changes in basic income categories of the banking sector**

	30.6.2004	30.6.2005	Y-on-Y change
<i>net interest income</i>	15 510	14 928	-3.75%
<i>interest expenses</i>	14 026	12 342	-12.01%
<i>interest revenues</i>	29 536	27 270	-7.67%
<i>of which: interest revenues from securities</i>	10 554	8 407	-20.34%
<i>net non-interest income</i>	5 798	7 066	21.88%
<i>income from equities and business interests</i>	89	81	-9.30%
<i>net income from fees</i>	4 388	5 232	19.21%
<i>net income from trading</i>	3 210	3 974	23.79%
<i>other net operating income</i>	-1 890	-2 220	-17.47%
<i>gross income</i>	21 308	21 994	3.22%
<i>total operating costs</i>	13 014	13 657	4.95%
<i>purchased performances</i>	5 662	5 543	-2.10%
<i>staffing costs</i>	5 159	5 928	14.91%
<i>other operating costs</i>	2 193	2 187	-0.29%
<i>net income</i>	8 294	8 337	0.52%
<i>net creation of provisions, reserves and net income from writing off receivables</i>	753	-245	-132%
<i>extraordinary result and taxes</i>	606	977	61.04%
<i>net profit</i>	6 925	7 605	9.83%
<i>ROE</i>	8.7%	9.7%	
<i>ROA</i>	0.66%	0.57%	
<i>Cost-to-income ratio</i>	61%	62%	
<i>Net income from fees as a share of gross income</i>	21%	24%	

- source: NBS
- data is in SKK m
- the ROA and ROE denominators are based on the June value of assets, or own funds (not the average value)

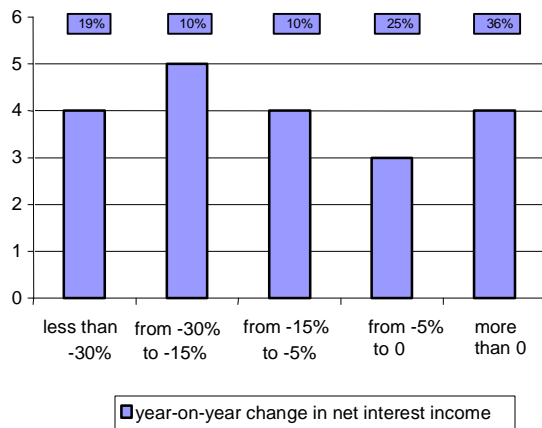
On the liabilities side, households traditionally provide banks with the cheapest

funds, but on the assets side income from household loans as well as fee income from households make up a significant volume of overall income and are also important with respect to their pace of growth. Interest-rate margins are higher in the household sector than in the corporate sector. Low interest rates as well as favourable macroeconomic development indicate that the growth trend in household loans will continue. For individual banks, the growth of interest and noninterest income will depend on their market position and the competition among the banks.

Compared with the household sector, the interest margin on loans to the corporate sector is low. The corporate sector continues to account for a significant part of banks' income, especially for those banks focusing on enterprises.

### Fall in the net interest income in the banking sector

**Chart 17 Year-on-year change in the net interest income in the banking sector as at June 2005**



- source: NBS
- the vertical axis shows the number of banks
- the percentage above each column represents the assets of banks in that column as a share of total assets in the sector

Net interest income declined most sharply in the group comprising small and medium-sized banks, with interest revenues from securities and

loans declining significantly due to the cut in interest rates and growing competition in the loan market. The group of large banks, by contrast, exploited its dominant market position in the loan market and reported growth in interest revenues on the back of growth in the volume of provided loans, in particular household loans

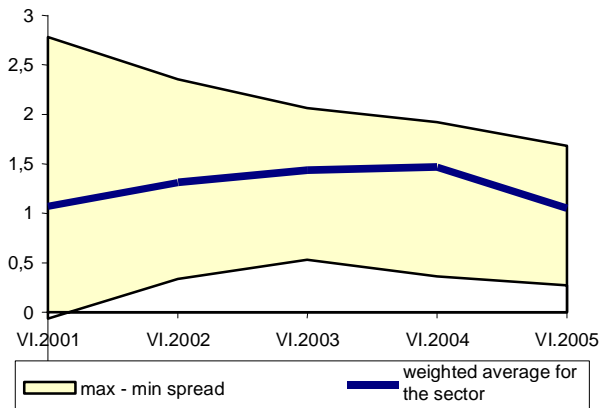
For the first time since 2001 there was a year-on-year fall in the net interest margin<sup>2</sup> in the banking sector. In June 2005 it stood at 1.05%.

Given the growth in retail loans, interest revenues from loans were important to the profitability of banks (in June 2005 they accounted for 43% of total interest revenues). Banks reported a fall in revenues from commercial and short-term loans. On the other hand, there was growth in interest revenues from current-account overdraft balances and from long-term loans, which was connected to the increase in household loans. Amid a situation of low interest rates, the decline in interest revenues from securities continued. Interest revenues from the NBS increased in connection with high growth in the volume of funds invested in reverse repo transactions (in June, they accounted for 18% of total interest revenues). Interest revenues from the interbank market as a share of the total interest revenues fell to 7%.

The impact that the fall in interest revenues had on net interest income was partly compensated by a decline in interest expenses, itself related to the cut in deposit interest rates. On the other hand, there was a marked increase in the interest expenses paid to non-resident banks (up by 58% year-on-year). Due to the increase in funds from ARDAL, interest expenses grew also in relation to the public sector. Issues of mortgage bonds pushed up the interest expenses in those banks with a mortgage licence. The banking sector also saw increased interest expenses for bills of exchange.

<sup>2</sup> The net interest margin is defined as net interest income as a share of the average value of assets.

**Chart 18 Development of the interest margin in the banking sector**



- source: NBS
- data on the vertical axis is in percent

The development of banks' interest income in the following period will be affected most of all by lending growth, competition among the banks, development of the interest margin, changes in the structure of external funds, falling yields on securities, and the volume of sterilized funds at the NBS.

### Growth in non-interest income

In contrast to the net interest income, the net non-interest income grew in most banks and increased in the sector as a whole by almost 22% year-on-year. The importance of non-interest income within total income from banking operations therefore increased, and in June 2005 it accounted for 32% of banks' gross income<sup>3</sup>.

Banks saw positive development notably in income from fees, which in June 2005 represented as much as 24% of the gross income in the banking sector. Their substantial growth in banks is related especially to the growth in loans, other banking transactions by customers, and the rise in bank fees. As with interest revenues from loans, the importance of fee income in a bank is related to its position in the retail market. The largest contribution to fee income in the banking sector was made by the biggest banks.

<sup>3</sup> Gross income is the sum of interest and non-interest income.

The banking sector's net income from trading increased year-on-year. The growth was largely caused by the year-on-year increase in net income from securities trading (up by 25%), which was mainly related to the fair value revaluation of securities.

In most banks there is an open foreign-exchange position secured by derivatives transactions, which results in a negative correlation between net income from derivatives and net foreign-exchange income. Net income in the banking sector from foreign-exchange and derivatives transactions grew by more than 20%, caused by a substantial growth in income from derivatives trading (up by 1.9 bn year-on-year) in comparison with a fall in income from foreign-exchange transactions (down by 1.4 bn year-on-year).

In other operating income, the banking sector showed a loss. Year-on-year the loss increased by more than 17%. The most frequent cause of changes in this item were costs and revenues from sold receivables. The main contributor to the year-on-year deepening of the loss was the lower revenues in 2005 from assigned claims against customers.

### Growth in operating costs

The first half of 2005 saw continued year-on-year growth in operating costs in the banking sector. The increase was largely due to the rise in banks' staff costs, which occurred despite a fall in the number of employees in the sector. Along with growth in staffing costs, most banks also reported a fall in the biggest item of operating costs, purchased services.

Profit generation was in several banks greatly affected by a decrease in operating costs. The banks come up to costs cutting in response to a fall in revenues from basic banking operations and also to competition from other banks.

The operational effectiveness of the banking sector in terms of the cost-to-income ratio worsened slightly year-on-year. This indicator expresses the effectiveness of basic banking operations, i.e. the part of the income from their

basic activities that banks spend on operating costs. The previously mentioned trends were seen in the development of this indicator. Most banks reported an increase in operating costs. As regards changes in the total gross income from banking operations, there were considerable differences between individual banks. Where there was a decline, it was most frequently caused by a decrease in net interest income.

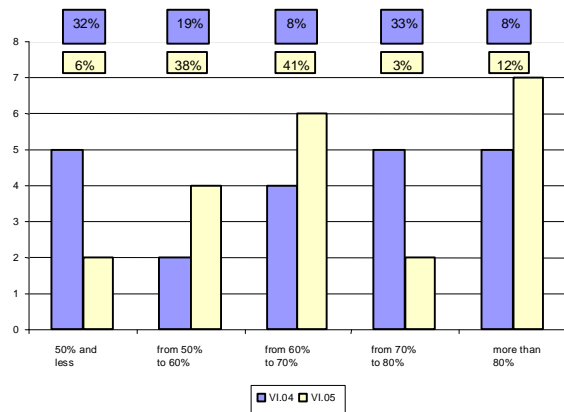
- the percentage above each column represents the assets of the banks in that column as a share of total assets in the sector
- the operational effectiveness of banks is measured as a ratio of operating costs to gross income (*cost-to-income ratio*).

### Year-on-year increase in net income from the creation of provisions and from writing off claims

The net profit in the banking sector was also influenced by the net creation of provisions and by the income from writing off receivables. In comparison with 2004, the banking sector expenses for writing off receivables towards customers fell, though the net creation of provisions grew.

For most banks, the reversal of reserves exceeded the creation of reserves in 2005. The difference between these two items was lower than in 2004.

**Chart 19 Breakdown of operational effectiveness in the sector in June 2005**



- source: NBS
- the vertical axis shows the number of banks

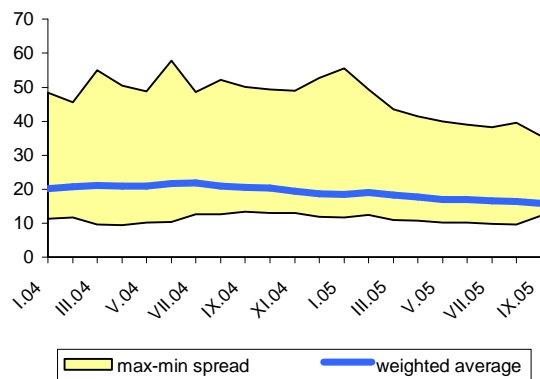


## 7 Capital adequacy

All banks in June 2005 had a capital adequacy above the required level of 8%. In the banking sector, capital adequacy values continued to fall from the beginning of the year 2005. Despite the decline, the level of capital adequacy has long been posting relatively high values (in December 2004, the weighted capital adequacy of the EU 25 banking sector stood at 12%).

The capital adequacy of the banking sector in June 2005, weighted by the volume of risk-weighted assets of individual banks, stood at 17% (Chart 20).

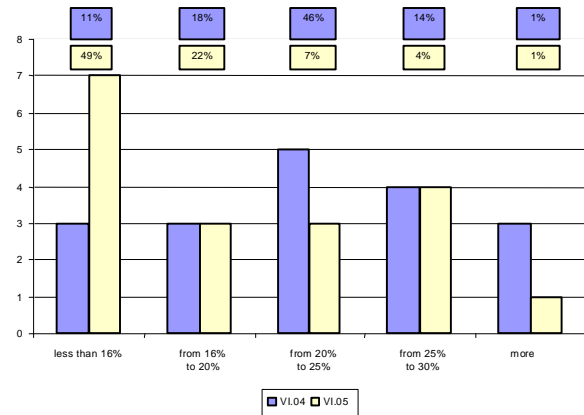
**Chart 20 Development of capital adequacy in the banking sector**



- source: NBS
- the vertical axis shows the capital adequacy value in percent
- the chart shows the development of the maximum, minimum, and average values of capital adequacy

The decrease in capital adequacy in the banking sector during last year is shown in Chart 21. If the current trends on the assets side are assumed to continue, then the capital adequacy will continue to fall.

**Chart 21 Breakdown of capital adequacy in the banking sector**



- source: NBS
- the vertical axis shows the number of banks
- the percentage above each column represents the assets of the banks in that column as a share of total assets in the sector

The capital adequacy decrease was largely the effect of growth in risk-weighted assets. The main growth in the banking sector came in retail loans, equity shares and corporate loans. Risk-weighted assets in the banking sector (not including the branches of foreign banks) grew from January 2005 by almost 9%. Meanwhile the value of own funds did not change substantially, increasing from January 2005 by 0.2%. The banks presented a high quality of own funds, of which almost 100% were in the form of Tier 1 capital.

## **8 Risks in the banking sector**

*The banking sector's exposure to risks in the first half of 2005 did not represent a significant threat to the stability of the banking system. The capacity of banks for risk coverage is benefiting from the banking sector's growing profitability and its relatively high level of capital adequacy. Yet despite this positive assessment there remain weak points that could have an adverse effect on the sector.*

*Given their high pace of growth and large volume, it is household loans that pose the most significant credit risk. Even though there is a positive development in the macroeconomic indicators for households, the competition among the banks is putting significant pressure on banks' interest margins and loosening credit standards, resulting in the provision of loans to low-income groups. Growth in the credit risk of banks could also be an effect of the household interest rate risk, in a situation where the majority of loans to the household sector is tied to short-term interest rates.*

*The provision of long-term loans, the decline in saving deposits, and the growth in sight deposits in retail further deepened the time mismatch between assets and liabilities. Most banks saw their liquidity ratio worsen, while the banking sector's short position in the residual maturity of balance-sheet assets and liabilities became even more open. The exchange rate, interest-rate differential, and the position of the NBS in sterilization repo tenders supported the growth in the volume of short-term funds, which increased the interconnection between the Slovak banking sector and foreign banks.*

### **Household credit risk**

#### **High growth in household loans**

The trend of sharp growth in household loans is visible in nearly all EU countries. The pace of this growth is, however, fastest in the New Member States.

The loans to Slovak households grew from January 2005 by 17%, and by June 2005 accounted for 29% of the total volume of loans in the banking sector.

The loans provided by banks were predominantly housing loans secured against real estate (making up more than 70% of total household loans). In December 2004 the banking sector's loan-to-value ratio of mortgage loans stood at 55%, indicating a somewhat conservative approach on the part of the banks.

Consumer loans, more risky in terms of collateral, grew in volume by more than 18% from January to June 2005, when they accounted for 13% of total loans.

#### **Easing of credit standards in banks**

As a rule, high growth in household loans can pose an increasing credit risk to banks. The banks

themselves through their credit standards and lending conditions to a great extent influence this credit risk. An easing in the standards for providing loans may result in lending to more risky entities and growth in loan impairment.

Several banks in the first half of the year eased credit standards for retail housing loans and consumer loans. The reason for this lay mainly in the relatively high competition pressure from other banks and the positive development of the macroeconomic environment. Development of household income, the high household demand for loans, and the growth in real estate prices also contributed to the growth in loans.

#### **Growth in household indebtedness**

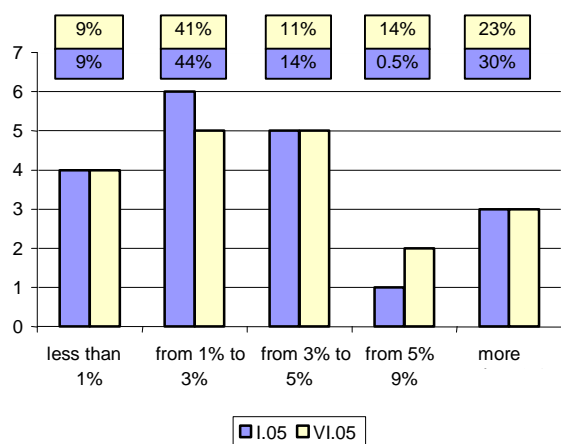
Household debt increased in the first half of 2005, largely in connection with the growth in loans (in December 2004 loans accounted for 60% of total household financial liabilities). The indebtedness of Slovak households is lower than the EU average. Slovak household loans totalled 139 bn in June 2005, representing 10% of GDP in current prices.

## Non-performing household loans

If we assume that households repay loans similarly as they did in the past, then the current quality of the loan portfolio could be an indicator of the size of the credit risk.

The ratio of gross non-performing household loans<sup>4</sup> to the total gross household loans fell slightly from January 2005 (from 4.54%, to 4.47% in June 2005). However the volume of the non-performing loans grew by more than 15%.

**Chart 22 Breakdown of gross non-performing household loans as a share of total household loans**



- source: NBS
- the vertical axis shows the number of banks
- the percentage above each column represents the assets of banks in that column as a share of total assets in the sector

The growth in the non-performing loans may, alongside the growth in lending volume, be attributed to the easing of credit standards for new loans, which is in turn a reaction to the pressure of competition among banks. The increase of the non-performing loans was mostly due to consumer loans.

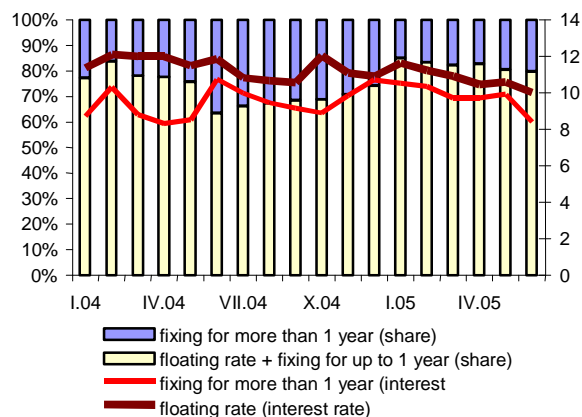
## Interest rate risk for households

Together with the growth in household loans comes the relatively high sensitivity of

<sup>4</sup> Non-performing loans are defined as loans to customers and banks which are overdue for more than 90 days or based on other qualitative criteria.

households to changes in interest rates. Despite the slight fall in their share, loans with a floating interest rate, or with fixed rate up to one year, accounted for 80% of all loans as at June 2005. Therefore the risk from a rise in interest rates is transferred from banks to households. The transfer of the interest rate risk onto the households indirectly increases the credit risk for banks, since a rise in interest rates could lead to loan impairment among households lacking the means to make repayments.

**Chart 23 New fixed-interest loans to households**



- source: NBS
- the right axis shows the interest-rate level in percent
- the left axis shows the share of loans according to the fixing period

Since foreign-exchange loans make up a low share of household loans, the indirect foreign-exchange risk for households is negligible.

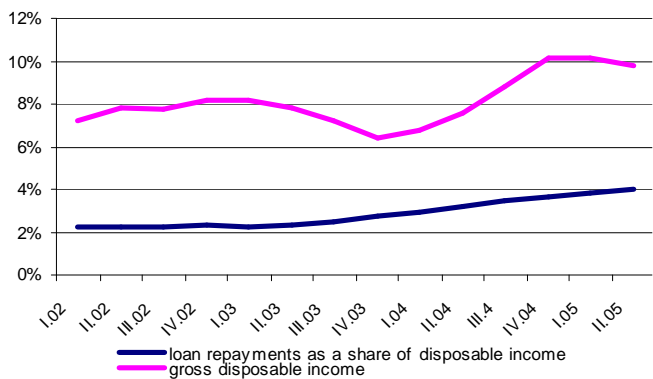
## Financial position of households

The willingness of banks to lend to households reflects the improving financial situation of households. This has been supported by the positive development of macroeconomic indicators, in particular, growing of real wages, declining unemployment, increasing real estate prices and low inflation. Gross disposable income and financial assets are creating a volume of funds sufficient for the repayment of loans.

The breakdown of loans into individual income groups remains a question. According to the most recent survey conducted in 2003<sup>5</sup>, the majority of household loans are provided to the highest income groups, which at the same time have the highest stock of financial assets. The fact that lending to low-income groups of households has grown is most likely due to the strong competition among the banks and their attempts to increase their market shares.

Therefore the risk for households will remain strongly related to the provision of loans to more risky household categories.

**Chart 24 Credit burden of households in relation to income of households<sup>6</sup>**



- source: Statistical Office of the Slovak Republic
- the chart shows gross disposable income in terms of its percentage change compared to the same period of the previous year

Household gross disposable income, the primary source for loan repayments, increased by 10% in the second quarter of 2005 compared to the same period of the previous year. Loan repayments<sup>7</sup> as a share of gross disposable income grew and in the second quarter stood at 4%. The increase was caused both by the growing indebtedness of households and by the

lower pace of growth in household gross disposable income.

Household financial assets are a potential source of loan repayments. These include mainly bank deposits, investments in mutual funds, life insurance and, to a lesser extent, securities. The bulk of household financial assets is sufficiently liquid and may, if necessary, be used for loan repayments.

The amount of the financial assets is large enough to cover household financial liabilities. The ratio between financial liabilities and financial assets stood at 32% in 2003.

## Corporate credit risk

### Growth in foreign-exchange loans

The use of loans for corporate financing grew by 8.5% from the beginning of the year with the most notable growth in foreign-exchange loans.

The high corporate demand for loans was most often related to the financing of operating capital, and several banks reported a substantial increase in demand for financing of long-term investments.

In a number of banks the revival of corporate financing was partly due to the higher demand from self-employed persons and from small and medium-sized enterprises.

### Quality of the loan portfolio

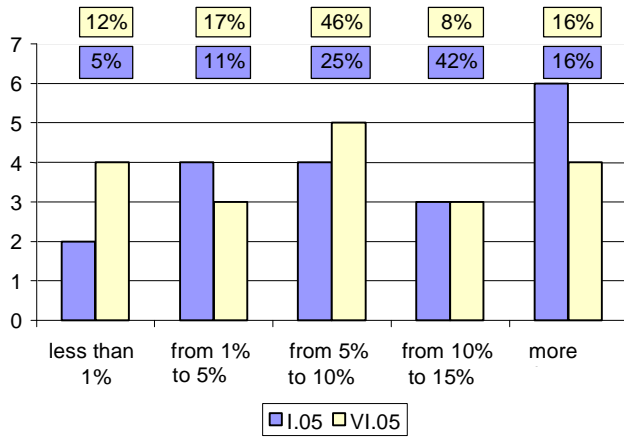
The trend of improving quality in the corporate loan portfolio continued in the first half of 2005. Gross non-performing loans as a share of the total corporate loans fell from 9.9% in January to 9.7% in June 2005. The value of this indicator fell in almost all banks.

<sup>5</sup> Microcensus 2003, Statistical Office of the Slovak Republic

<sup>6</sup> Gross disposable income is defined as the difference between the current income and expenses of households.

<sup>7</sup> Household loan repayments are calculated from household loans distributed according to maturity and from their average interest rates

**Chart 25 Breakdown of gross non-performing corporate loans as a share of total corporate loans**



- source: NBS
- the vertical axis shows the number of banks
- the percentage above each column represents the assets of the banks in that column as a share of total assets in the sector

**Table 5 Quality of corporate loans by individual industries in June 2005**

Industry	Non-performing loans as a share of total loans	Industry share of total loans
Industrial production - total	14.1%	16.0%
Construction	12.6%	2.0%
Transport, warehousing, postal services and telecoms	11.8%	4.3%
Agriculture, hunting and forestry	10.4%	2.0%
Wholesale and retail trade, repair of motor vehicles and consumer goods	9.6%	14.1%
Other community, social and personal services	6.9%	1.9%
Non-residents	4.6%	2.7%
Real estate, leasing, and business activities	4.3%	6.8%
Public administration and defence, social insurance	0.2%	4.8%
Financial mediation	0.2%	9.0%
Electricity, gas and water generation and distribution	0.2%	5.6%

- source: NBS
- data for industries whose share of the total loans is less than 1% is not included

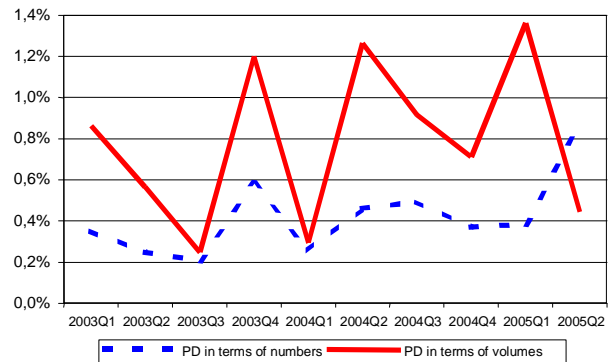
Within the industry breakdown of loans, the worst quality loans were those provided to

enterprises having industrial production as their main activity.

For these enterprises, the ratio of non-performing loans to the total volume of loans stood at 14% in June 2005 (Table 5).

### Default rate

**Chart 26 Development of the probability that a loan will move from the category of standard loans or special mention loans to that of sub-standard, doubtful or loss loans.**



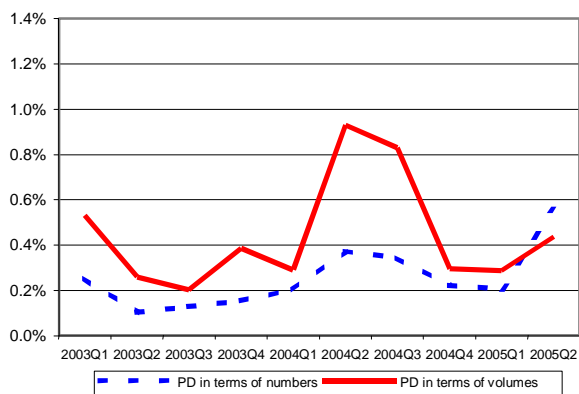
- source: Register of Credits and Guarantees, own calculations

One of the parameters in attributing the level of credit risk is the default rate. It expresses the percentage of performing loans that become non-performing within a given time period. The quotient may be reached using either the number of loans or the volume of their balances. For loans to legal persons the development of the default rate is calculated on a quarterly basis as shown in Chart 26 and Chart 27.<sup>8</sup> It may be noted in both cases that, with the exception of the second quarter of 2005, the default rate based upon the number of non-performing loans is at least as large as the default rate based upon the

<sup>8</sup> When interpreting the charts, account should be taken of the amendment to the Decree on the Classification of Assets and Liabilities, which introduced changes in the quantitative characteristics for the classification of loans into individual categories. The past-due period for individual categories was shortened. The fact that this change is not significantly reflected in the chart probably means that, when classifying claims into individual categories, qualitative characteristics are of greater importance.

volume of loan balances. It may therefore be concluded that default is more common among loans that are larger than the average.

**Chart 27 Development of the probability that a loan will move from the category of standard loans, special mention loans or sub-standard to that of doubtful or loss loans**



- source: Register of Credits and Guarantees, own calculations

When interpreting the data, it should be borne in mind that they indicate quarterly default rates. Annual default rates are, of course, different. In 2004 the loan default rate (i.e. where a loan becomes a doubtful loan or a loss loan, in other words 90 days or more overdue) was calculated at 0.69% using the number of non-performing loans. This is better illustrated by comparing the value with the average annual default rate for enterprises with a BB rating<sup>9</sup>, which is exactly 0.9%.

The default rate calculated using the volume of balances of non-performing loans stands at 1.49%.

**Quality of the loan portfolio in other sectors**

The quality of loans provided to general government is good, with non-performing loans accounting for less than 1% of the total. The same standard is found in loans to financial companies, which in the reviewed period reported

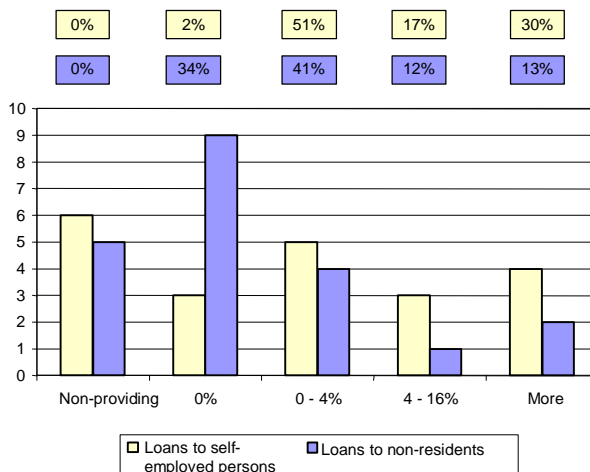
<sup>9</sup> Source: S&P's - One-year average transition matrix for total European structured finance.

constant growth (up by almost one third year-on-year).

The volume of loans to self-employed persons represents around 9% of the total loan portfolio. It is notable for having the highest share of non-performing loans vis-à-vis the total volume of loans - as much as 11.5%. Due to the growth in loans to this sector, however, this share is falling when in January it stood at 13.1%.

Loans to foreign customers also account for around 9% of the total volume of loans. Of this, non-performing loans make up 4.6%.

**Chart 28 Breakdown of gross non-performing loans as a share of total loans in the sector of self-employed persons and non-residents in June 2005**



- source: NBS
- the vertical axis shows the number of banks
- the percentage above each column represents the loans of the banks in that column as a share of the total loans to self-employed persons or non-residents
- non-providing – banks that do not provide loans to the stated sectors

**Foreign-exchange risk**

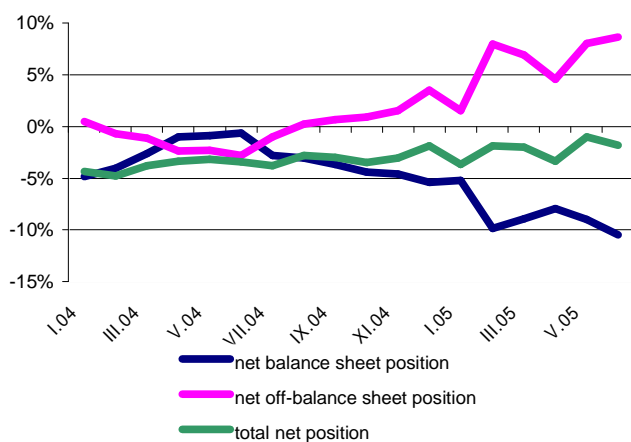
**Stable development of banks' total open foreign exchange position**

The total open foreign exchange position of the banking sector in June 2005 stood at 2% of the sector's assets. The banking sector has long been reporting a relatively small open foreign exchange position. In general, it may be said that

the direct foreign-exchange risk in the banking sector, arising from the direct effect of exchange-rate fluctuations, is negligible.

The growth in foreign-exchange funds from banks was either seen in the increase in foreign-exchange loans or it was secured by derivatives transactions. The extent of the hedging varied since banks expected the Slovak koruna to appreciate. Some banks therefore held a short position. The open positions were largely created by the off-balance-sheet guarantees and loan pledges.

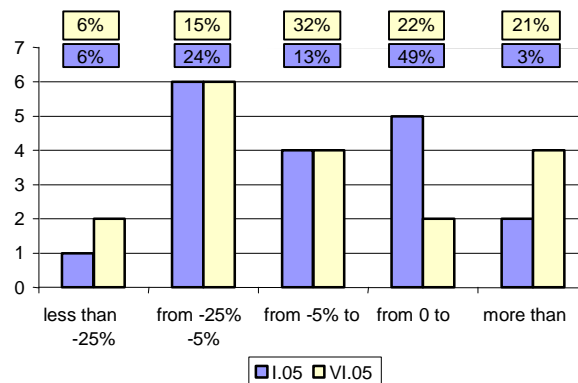
**Chart 29 Development of open foreign exchange positions as a share of assets**



- source: NBS
- the vertical axis shows open positions as a share of total assets in the banking sector

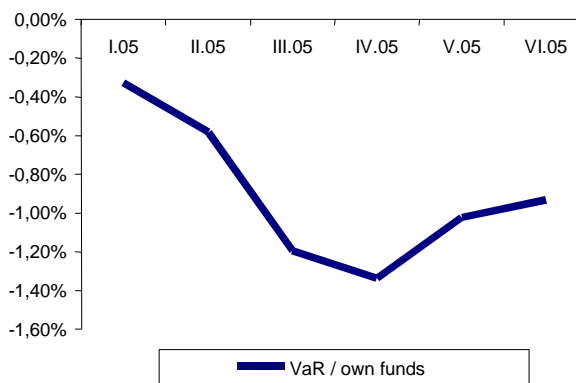
The value-at-risk (VaR) indicator, which in addition to the open foreign exchange position takes into account the volatility of exchange rates and their correlations, reported a worsening value from the beginning of the year. The biggest risk undertaken by the banking sector was in April 2005, when the anticipated loss from the foreign-exchange risk in the sector represented 1.3% of banks' own funds. This could have been due to changes in exchange-rate development in March and April 2005.

**Chart 30 Breakdown of total open foreign exchange positions as a share of banks' assets in the sector**



- source: NBS
- the vertical axis shows the number of banks; the horizontal axis shows total net positions as a share of assets
- the percentage above each column represents the assets of the banks in that column as a share of total assets in the sector

**Chart 31 Development of VaR - foreign-exchange risk in the banking sector**



- source: NBS
- the indicator represents the ratio of the VaR for all banks and branches in the sector and own funds for banks only
- data on the vertical axis is in percent
- VaR is defined as the biggest possible portfolio loss with a 99% probability during a single day. VaR was calculated using an historical simulation.

### Development of the foreign-exchange position in the balance sheet

Foreign exchange assets in the banking sector grew by 4% from the beginning of the year. The banks mainly increased the biggest item of foreign-exchange assets, foreign-exchange loans, which grew by 16%. Growth in corporate financing was largely in the form of long-term loans.

Even more marked were the changes in foreign-exchange liabilities, which increased by almost 36% from the beginning of the year 2005. The high growth was exclusively caused by the increase in short-term foreign-exchange funds from foreign banks. A part of these foreign-exchange funds from non-resident banks were used to finance foreign-exchange loans. More than 50 bn was invested into Slovak koruna assets.

Foreign-exchange deposits from the general government sector (ARDAL) grew by almost 12 bn and were used for investments in the domestic currency.

The total foreign-exchange position in the balance sheet of the banking sector became significantly open in the first half of 2005 (Chart 29).

### Development of the foreign-exchange position in the off-balance sheet

The securing of growth in the foreign-exchange balance-sheet position was reflected by growth in the long off-balance-sheet position (Chart 29). This indicates that the majority of the banks closed their open balance-sheet positions using off-balance-sheet transactions. The net value of derivatives transactions (the difference between derivatives receivables and liabilities) was positive and its development from the beginning of the year correlated positively with the growth in foreign-exchange funds.

Banks' foreign-exchange option transactions were carried out mainly for their customers. In the case of most banks, open option transactions with customers were closed with other banks.

### Indirect foreign-exchange risk

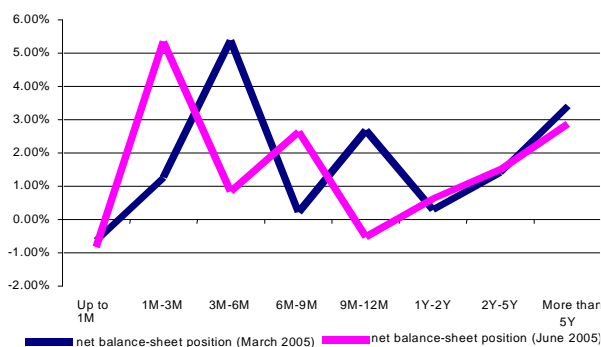
Even though the direct foreign-exchange risk for banks is not significant, the growth in foreign-exchange loans is heightening the credit risk for banks' customers and therefore indirectly the credit risk for banks. Despite the assumptions about foreign-exchange risk management, especially in larger enterprises, exchange-rate fluctuations could lead directly to impairment on loans or they could indirectly affect the competitiveness of the corporate sector.

### Interest rate risk

#### Changes in the interest rate sensitivity of assets and liabilities within the total banking position

The balance-sheet assets and liabilities of the banking sector demonstrated in the first half of 2005 sensitivity to changes particular in the SKK interest rates. Almost 82% of the interest rate sensitive assets and 76% of the rate sensitive liabilities were denominated in SKK. As regards other positions in foreign currency, the interest-rate risk was most significant for EUR positions (12% of assets and 15% of liabilities) and to a lesser extent for USD positions (5% of assets and 8% of liabilities).

Chart 32 Net balance-sheet position of the interest rate sensitive assets and liabilities (in SKK)



- source: NBS
- the horizontal axis shows the time buckets; the vertical axis shows the net balance-sheet position (non-cumulative) as a share of banks' total assets



Time buckets of up to one year include mainly deposits with banks and the NBS (including 95% of such deposits that are in the time buckets of up to one month), customer loans (75% up to one year) and securities (64% up to one year). Most of the assets with long-term fixing or revaluating of interest rates were securities and customer loans.

The interest rate sensitive liabilities also had a low interest rate sensitivity (84% up to one year). Predominant among interest rate sensitive liabilities were customer deposits with a short fixation of interest rate.

In the first half of 2005 there was only a slight change in the time structure of the Slovak koruna assets. With most banks there was harmonisation of customer deposits and customer loans in individual time buckets, except for the one-month time bucket. A long position in the shortest time bucket was reported by those banks with a high volume of deposits at the NBS. By contrast, a short position in this time bucket was reported by those banks where short-term customer deposits predominate.

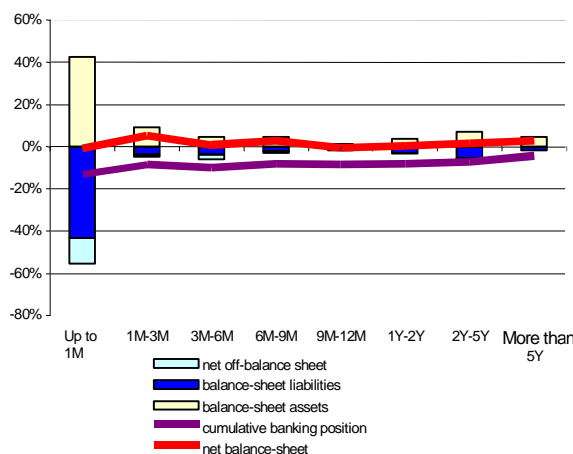
The interest-rate risk in longer time buckets was faced mainly by large banks in the holding of securities on the assets side. Changes in the time structure of rate sensitive balance-sheet items between March and June 2005 (Chart 32) were caused particularly by movements of securities within the group of large banks (often due to the redemption of securities or the purchase of new securities). As regards other banks, the interest rate sensitive assets and liabilities in time buckets of over one month were more or less harmonised, or their open positions were not significant.

A specific group with regard to interest-rate risk was the group of building societies. Because it provides loans with long-term fixed interest rates, this group reported a long position in the long time buckets, which exposed building societies to risk in the event of an increase in interest rates.

The interest rate sensitive off-balance-sheet transactions included mainly transactions in

derivatives, in particular foreign exchange and interest rate derivatives. In June 2005, interest rate sensitive derivatives accounted for 88% of rate sensitive assets and 78% of rate sensitive liabilities. In terms of interest-rate risk, the derivatives position in all time buckets was closed. Open interest-rate positions in the off-balance sheet within the one-month time bucket were represented by other off-balance-sheet liabilities.

**Chart 33 Time structure of the interest rate sensitive items in the balance and off-balance sheets in SKK**



- source NBS
- the horizontal axis shows the time buckets; the vertical axis shows the share of banks' total assets

Funds from foreign banks created a short position in the one-month time bucket for the interest rate sensitive items denominated in EUR. The short position stood at 4.5% of the value of total assets in the sector. Open positions in other time buckets were not significant.

## Interest rate sensitivity of individual items of assets and liabilities<sup>10</sup>

On the assets side, securities showed the greatest rate sensitivity due to the longer period until the repricing or fixing of their interest rates. Customer loans, along with assets on the interbank market and with the NBS, showed lower sensitivity since much of their volume was in short time periods.

Customer deposits, the biggest item among the interest rate sensitive liabilities, demonstrated only small rate sensitivity. The most sensitive liability item was other liabilities, though their volume was negligible.

**Table 6 Interest rate sensitivity of selected aggregates of assets and liabilities in the banking sector**

	III.05	VI.05
interbank market and NBS - assets	-0,0007%	-0,0007%
asset transactions with customers	-0,0116%	-0,0095%
securities transactions	-0,0203%	-0,0168%
interbank market and NBS - liabilities	-0,0049%	-0,0052%
liability transactions with customers	-0,0046%	-0,0047%
other liability transactions	-0,0329%	-0,0286%

- source: NBS
- the figures in the table express the percentage change in the value of interest rate sensitive asset and liability items upon a parallel rise in interest rates by 1 basis point

## Liquidity risk

The liquidity risk in the first half of 2005 was affected by several factors.

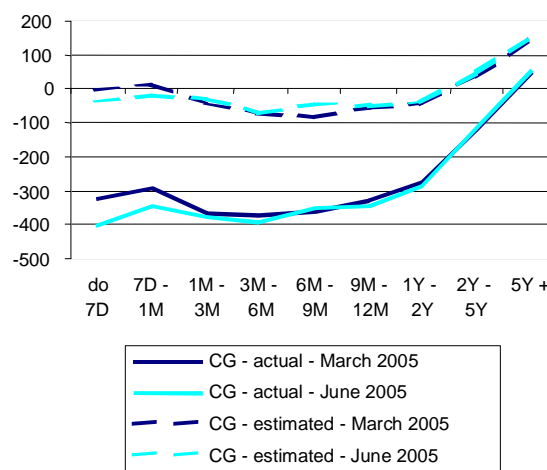
First there are the changes in time structure for loans and deposits resulting from the general economic environment. The provision of long-term loans was supported by the unsaturated

<sup>10</sup> Interest rate sensitivity is calculated as the change in the net present value of asset items (interbank market and NBS, loans and securities) and liability items (interbank market and NBS, deposits and other interest rate sensitive liabilities) upon a parallel rise in interest rates by 1 basis point.

market in household loans, growth in household disposable income, the low initial indebtedness of households, the easing of credit standards by banks, and lower interest rates. Interest rates also influenced the decline in saving deposits, whereas current-account balances increased in connection with the growth in real wages. The time mismatch between assets and liabilities widened.

The second factor is the exchange-rate development of the Slovak koruna and the high position of the NBS in sterilization repo tenders, which encouraged growth in short-term funds from foreign banks. Changes in the short-term gap occurred mainly in the shortest maturity – up to 7 days. In terms of current maturity, the change between March and June was 83.6 bn. As a result, the short balance-sheet position opened even further, to 405.5 bn.

**Chart 34 Change in the cumulative gap between balance-sheet assets and liabilities**



- source: NBS
- data is in SKK bn
- CG – cumulative gap

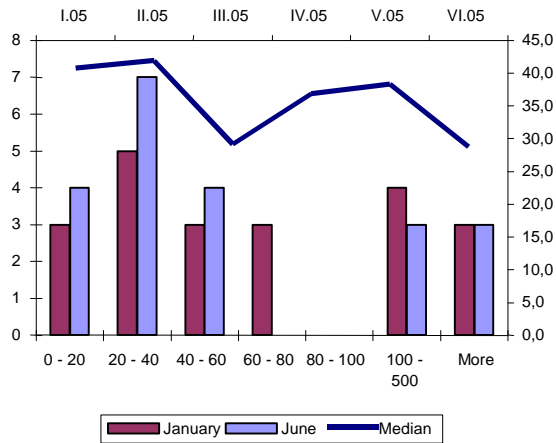
## Indicator of fixed and non-liquid assets

The indicator of fixed and non-liquid assets did not change significantly during the course of the year. All banks reported its value at less than 1, while the median moved in the range between 0.25 and 0.27.

## Acid ratio

The acid ratio indicator is by definition considerably volatile. Nevertheless, we may say in general that it shows a continuing worsening trend.

**Chart 35 Acid ratio indicator – distribution and development of the median**



- source: NBS
- the axes indicate:
  - o lower horizontal - breakdown of acid ratio values in %
  - o left vertical – number of banks in the breakdown on the lower horizontal axis
  - o upper horizontal – time frame
  - o right vertical – average value of acid ratio in time, in %
- the chart does not include data for building societies

## 9 Stress testing

*The main purpose of stress testing is to quantify the ability of both individual banks and the whole banking sector to manage extreme, but ever possible, market conditions. The subject-matter of stress scenarios includes credit risk, foreign-exchange risk, interest-rate risk, liquidity risk, and systemic risk.*

*Interest-rate risk does not represent a significant problem for the banking sector. The main negative impact related to interest rates would be caused by their increase. Upon a parallel rise in interest rates by 1.5 percentage points, the weighted capital adequacy of the banking sector would fall by almost 1 percentage point. A decline in short-term interest rates, which could be caused by a reduction in the sterilization position of the NBS, would have a positive impact on the capital adequacy of the banking sector.*

*Nor does foreign-exchange risk pose a substantial threat to banking sector stability. Were there to be a recurrence of the historically largest month-on-month relative changes in the exchange rates (since 1999), it would not cause the capital adequacy of any bank to fall below the threshold of 8%. For most banks there would be an adverse effect from depreciation of the Slovak currency. If the historically most significant depreciation of individual exchange rates happened again, the capital adequacy of the banking sector would fall by 0.58 of a percentage point.*

*Non-performing receivables as a share of the total volume of provided loans have not recorded notable growth in recent years. The reason is that the majority of new loans are standard. Stress testing of the banking sector in regard to credit risk shows, however, that the most serious threat would arise if defaulting on new loans began to happen to the same extent as it did in the past. The main risk in this regard is posed by corporate loans.*

*From among the individual stress scenarios in relation to liquidity, the one with the biggest impact on banks would be the withdrawal of 20% of customer deposits. A less significant impact would be caused by the reduction in short-term funds from foreign banks. Banking sector liquidity would be least significantly affected by a reduction in the sterilization position of the NBS and a decline in the value of government bonds by 10%.*

*Systemic risk, understood as the impact of the default of one bank on other banks through interbank deposits and loans, does not appear to be significant in the Slovak banking sector. The reason is the relatively small volume of interbank deposits and loans that is linked with high sterilization position of the NBS.*

### Methodology

In the case of credit, foreign exchange, and interest rate risk, we assess the impact of such scenarios on the capital of banks and subsequently on their capital adequacy.

$$KP_{SCi} = \frac{K + D_{SCi}}{RWA}$$

$KP_{SCi}$  is the capital adequacy after applying the stress scenario, where  $i$  is the number of the scenario;  $K$  is the capital of the bank,  $RWA$  are the risk-weighted assets, and  $D_{SCi}$  is the impact of stress scenario  $i$ , in other words the size of

the potential loss in the event of the scenario. With the credit risk, account is also taken of the potential impact of the stress scenario on the risk-weighted assets.

In the case of the liquidity risk, we quantify the stress scenarios on the liquidity indicators.

Quantification of the systemic risk is based on the matrix of interbank deposits and loans. In the event of one of the banks defaulting, it is assumed that the losses on non-performing receivables towards it are reflected by a fall in capital adequacy.

Stress tests were applied on data from June 2005 to all banks in the sector. The exceptions were the stress tests quantified using the impact

on capital, which were not applied to the branches of foreign banks. The results for the whole banking sector are weighted by the share of individual banks in the sector's risk-weighted assets.

When interpreting the results of stress scenarios it is important to realise the particular limitations of stress testing. Like other models, stress testing simplifies the real situation in the market. Even though we seek to create stress scenarios and to quantify them in a way that is as close to the market reality as possible, the complexity of the reality forces us to work with certain assumptions and simplifications.

The stress testing of the mentioned risks was performed independently for each risk. Even though the employed scenarios are connected, they do not as yet assume a correlation between the individual risks.

## Results of stress testing

### Interest-rate risk

The following four stress scenarios were applied in the stress testing:

- *Scenario 1*: parallel decline/growth in the yield curve by 150 basis points,
- *Scenario 2*: fall in interest rates by 150 basis points in time bucket up to one month, and an increase in rates by 150 basis points in time bucket over 15 years,
- *Scenario 3*: steepening of the yield curve (a fall in interest rates in time bucket up to one month and an increase in rates in time bucket over 15 years by 150 basis points),
- *Scenario 4*: parallel decline/growth in the yield curve in EUR by 130 basis points.

The value of capital was adjusted by the difference between the net present value of interest rate sensitive positions before and after application of the scenario.

**Table 7 Impact of the stress scenarios for interest-rate risk on the capital adequacy of the banking sector as at June 2005.**

		<i>Capital adequacy</i>
<i>Original value of capital adequacy</i>		17.0%
Scenario 1 (SKK)	decrease	18.2%
	increase	15.9%
Scenario 2 (SKK)	increase "long"	16.1%
	decrease "short"	17.2%
Scenario 3 (SKK)		16.3%
Scenario 4 (EUR)	decrease	17.3%
	increase	16.7%

- source: NBS
- the branches of foreign banks are not included

### Foreign-exchange risk

Four scenarios were also applied for stress testing of the foreign-exchange risk:

- *Scenario 1*: the largest relative depreciation of the SKK against the EUR, USD and CZK since 1999,
- *Scenario 2*: the largest relative appreciation of the SKK against the EUR, USD and CZK since 1999,
- *Scenario 3*: "worst-case scenario" – individually selected for each bank in accordance with the open position, either depreciation or appreciation,
- *Scenario 4*: outflow of funds from non-resident banks and a depreciation of the SKK the same as that during the period between 14 March and 30 March 2005

Using these scenarios and the values of the net open foreign-exchange positions in the respective currencies, the losses were calculated and then projected into a change in the value of capital adequacy.

**Table 8 Impact of the stress scenarios for foreign-exchange risk on the capital adequacy of the banking sector as at June 2005**

	Capital adequacy
Original value of capital adequacy	17.0%
Scenario 1: Depreciation of the SKK	16.3%
Scenario 2: Appreciation of the SKK	17.5%
Scenario 3: "Worst-case"	16.1%
Scenario 4: Depreciation of the SKK when taking into account the correlation of exchange rates	16.5%

- source: NBS
- the branches of foreign banks are not included

### Credit risk

Three scenarios were used for stress testing of the credit risk:

- *Scenario 1*: growth in non-performing receivables by three times the maximum month-on-month growth in non-performing receivables during the first half of 2005,
- *Scenario 2*: increase in non-performing receivables on the assumption that new loans as a share of non-performing loans will be equal to 1.5 times non-performing loans as a share of total loans,
- *Scenario 3*: similar to scenario 2, but we also assume a growth in the loans by 1.5 times the maximum of the month-on-month growth in the first half of 2005.

In each scenario, the growth in non-performing loans was deducted from the capital.

**Table 9 Impact of stress scenarios for credit risk on the capital adequacy of the banking sector as at June 2005**

	Retail	Corporate	Retail + corporate
Original value of capital adequacy		17.0%	
Scenario 1	16.8%	17.0%	16.7%
Scenario 2	15.8%	14.0%	12.8%
Scenario 3	15.8%	13.9%	12.7%

- source: NBS
- the branches of foreign banks are not included

### Liquidity risk

Four scenarios were used:

- *Scenario 1*: decline in the value of government bonds by 10%,
- *Scenario 2*: fall in customer deposits by 20%,
- *Scenario 3*: decrease due to external reasons in short-term funds from the banking sector by 80%,
- *Scenario 4*: reduction in the sterilization position of the NBS by 90% and the placing of these funds on to the interbank market.

The significance of the individual scenarios was evaluated using the change in ratios between assets and liabilities that are liquid for up to 7 days, or 3 months, in relation to the current month-on-month changes in such ratios.

### Systemic risk

Systemic risk, understood as the impact of the failure of one bank on other banks through interbank deposits and loans, does not appear to be significant in the Slovak banking sector. The reason is the relatively small volume of interbank deposits and loans. The banks most exposed to systemic risk in the first half of 2005 were those highly engaged in the interbank market.

## Terminology used

*Acid ratio* – immediately liquid assets / highly volatile funds

*C3 Index* – concentration of the three largest banks, i.e. the sum of their assets or loans shares in total assets or loans.

*Cost-to-income ratio* - defined as the ratio between total operating costs and gross income from banking operations (purchased performances + staff costs + social costs + depreciation of tangible and intangible assets + taxes and fees / income from equity securities + net income from fees and commissions + net income from securities transactions + net income from derivatives transactions + net income from foreign-exchange transactions + net income from other transactions).

*Cumulative gap* – the sum of open positions (short or long) within certain time buckets.

*Enterprises* – non-financial companies (sector 11).

*Financial companies other than banks* – other financial companies, financial intermediaries, pension funds, mutual funds, insurance companies (sectors 122b, 123, 124 and 125).

*General government* – bodies of the central government and local government (sector 13).

*Herfindhal index* - defined as the sum of squares of the shares of individual banks' assets on total assets.

*Households* – the population, i.e. citizens' accounts (sectors 143, 144 and 145)

*Indicator of fixed and non-liquid assets* – introduced by the NBS Decree on liquidity rules for banks and branches of foreign banks. It is defined as the ratio of fixed and non-liquid assets to selected liability items approximately equal to own funds; it should not exceed the value 1.

*Long position* - a position in which assets exceed liabilities

*Net balance-sheet position* - defined as the difference between foreign-exchange assets and liabilities in the balance sheet.

*Net off-balance-sheet position* - defined as the difference between foreign-exchange assets and liabilities in the off-balance sheet.

*Non-performing loans* - defined as loans to customers and banks that are overdue for more than 90 days or based on qualitative criteria.

*Retail* – households, self-employed persons, non-government organizations serving mainly households (sectors 14 and 15)

*Short position* - a position in which liabilities are greater than assets

*Total net position* - defined as the aggregate of the net balance sheet and the net off-balance-sheet position.