



NÁRODNÁ BANKA SLOVENSKA

# **The Analysis of the Slovak Financial Sector for the First Half of 2008**

# Foreword

The National Bank of Slovakia (Národná banka Slovenska, NBS) regularly analyses the state of the Slovak financial sector for the needs of the Bank Board, as well as for the professional and general public. The goals of this analysis are derived from the Bank's mission to maintain financial stability in Slovakia and to supervise the safe functioning of the financial market. The main task of the analysis is to evaluate the current trends in the financial sector and their impact on the stability of the sector as a whole.

The present Analysis of the Slovak Financial Sector for the First Half of 2008 was carried out in the light of the ongoing financial crisis in the global financial markets. Hence, some of its chapters are devoted to the impact of this crisis on the domestic financial sector.

Although the banking sector is one of the sectors which were not hard hit by the crisis in the first half of 2008, the chapter on credit risk assessment points to the risks which became more serious in the period under review. The analysis focuses on the growing risks in the household sector, which are associated with the growing indebtedness of households. This development is closely connected with the trend in real estate prices. This trend and its possible impact on the stability of the banking sector is analysed in a separate box.

In assessing the risks related to legal entities, we used a new approach to risk assessment. Credit risk in the corporate sector was assessed according to the customer's significance for the bank. Thus, customers were divided into key customers and less significant customers. This approach better expresses the credit risk inherent in this sector.

Special attention was paid to the commercial real estate sector, which is one of the most vulnerable sectors at times of crisis. The trends and risks in this sector are analysed in the chapter 'Selected Topic'.

Since the beginning of 2008, capital requirement fulfilment in the banking sector has been monitored according to the Basel II principles. Thus, the analysis gives a new view into this area.

In the first half of the year, the financial crisis was mostly reflected in sectors where resources are managed by funds. In the chapter on collective investment and pension funds, we analysed the decline in performance and the risks related to such funds.

The possible impacts of various financial crisis scenarios on the domestic financial sector are analysed in the part 'Stress Testing'. We have evaluated the sensitivity of the financial sector to two macroeconomic scenarios, a moderate one and an extreme scenario.

Like in the previous analyses, financial data on the individual institutions were mostly obtained from the banking supervision's information system (MIM), the STATUS, STATUS DFT, and RBUZ systems, and from the data processed at the individual departments of the Financial Market Supervision Division. Additional sources of information were the Statistical Office of the SR, the Real Estate Price Map, Eurostat, the European Central Bank, and other external sources and commercial information systems. Activities performed during the supervision of individual institutions were not taken into account in this analysis.

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## Summary

### *The impact of the global financial crisis on the Slovak financial sector strengthened in the first half of 2008*

The situation in the domestic financial sector in the first half of 2008 was influenced by the crisis in global financial markets. The individual entities of the domestic financial sector were affected in different measure. Most seriously affected in the period under review were financial market investments. Negative developments in such investments were recorded in numerous mutual funds and pension management funds.

While in 2007 the impact of the crisis was felt by the customers of financial institutions, rather than by the institutions themselves, the first half of 2008 saw an increase in this impact, which started to hit some of the financial institutions as well. This resulted in a slowdown in their activity and increased pressure on profitability. The relative impact of the crisis on financial institutions is, however, still much lower than the impact on customers.

### *Bank lending to customers continued to grow*

The banking sector is one of the sectors which remained virtually unaffected by the financial crisis in the first half of 2008. An increase in assets in that period was an indication of the continuing orientation of banks to lending to customers. The strong domestic economic growth coupled with increased consumption, investment, and growth in the real estate market created conditions for buoyant demand, mainly in the corporate and household sectors. These two sectors recorded the largest increases in loans in the first half of 2008, compared with the previous periods.

Investment in securities continued to decline in the first half of the year.

The liabilities of the Slovak banking sector continued to be dominated by funds received from customers, though their share showed a decreasing tendency. Except for funds from enterprises and the general government, the other aggregates followed a growing trend in that period. Total funds from customers continued to exceed the volume of loans to customers in the first half of 2008, but showed a noticeably declining tendency.

The proportion of funds from banks also increased, mainly as a result of growth in funds from foreign banks. The issuance of securities continued, mainly in the form of mortgage bonds, due to the persistently high demand for mortgage loans among customers.

### *The financial position of the banking sector continued to improve*

In terms of profitability, the first half of 2008 was a positive period for the banking sector. The net profits of banks increased by almost 10% on a year-on-year basis. This was mainly the result of strong growth in interest income over the first six months. Despite the reduced margins, the banks profited from the strong growth in new loans. Non-interest income also increased on a year-on-year basis, mainly income from fees and charges. In trading, the banks achieved mixed results. Negative trends were mainly recorded in trading in debt and equity securities. The sector recorded increased expenses on provisions on a year-on-year basis.

During the first half of 2008, the gradually increasing trend in own funds continued in the individual banks, mainly as a result of retained profits from previous years. In the period under review, all banks recorded lower capital requirements, compared with the actual level of own funds. Compared with December 2007, the proportions of credit, operational, and market risks to the capital requirements remained virtually unchanged.

On the other hand, banks tend to reduce the ratio of own funds to risk-weighted assets in the long term. Regarding the actual situation in the financial markets and the results of stress testing, this may

represent increased pressure on certain institutions in the future, while the price of capital is on the increase and numerous parent financial groups are already exposed to such pressure.

***Developments in the selected financial market segments were influenced by the financial crisis***

In the first half of 2008, the financial crisis was reflected in the rate of return on assets in insurance companies, including assets covering Unit-linked products. The profit ratios of insurance companies, the large ones in particular, dropped in comparison with the first half of 2007. Technical premiums continued to grow at approximately the same rate as in the first half of 2007. In line with expectations, technical premiums were dominated by life-insurance premiums, due to persistently strong year-on-year growth in comparison with premiums in non-life insurance. Looking at the individual insurance branches, the market concentration, and the losses in non-life insurance, no significant changes occurred in comparison with the previous period. The only significant change was a slowdown in the sales of Unit-linked products, which was due to their negative performance.

The volume of securities transactions with customers, conducted via securities dealers, increased significantly over the first half of 2008. The largest increases occurred in deals in derivatives and money market instruments. The capital requirements were satisfied by these entities with a sufficient margin.

The volume of assets managed in the collective investment sector of Slovakia was stagnant over the first half of 2008, when an inflow of new investments into domestic funds was offset by an outflow of assets from the funds of foreign asset management companies. Domestic money market funds profited from the atmosphere of uncertainty dominating the financial markets and recorded a marked increase in assets. Except for mutual funds, all types of money market funds recorded a sharp decline in yields. On a year-on-year basis, investments depreciated most significantly in equity funds and the funds of funds.

In the area of pension saving, developments in the first six months were influenced by the opening of the second pillar of the pension system, which allows new savers to enter and those involved to leave. Despite this, the volume of assets managed in this sector continued to grow in the period under review.

In the case of the second pillar, the structure of funds by type was still dominated by growth funds and, in the case of the third pillar, by contributory funds. The composition of investments in pension funds was mainly influenced by the continuing financial crisis, which spread to other segments of the financial market as well, causing a fall in the volume of the equity sub-portfolio and a change in the structure of the bond sub-portfolio, with more investments made in government bonds. The average year-on-year yields of growth funds and balanced funds within the second pillar, as well as contributory funds in the third pillar of the pension scheme, were in the red in June 2008.

***The exposure of banks to credit risk increased***

The negative developments in the financial markets were not fully reflected in the banking sector. Some of the banks recorded a depreciation in their financial assets, due to decreases in market factors. This, however, does not mean the banking sector was not affected by the crisis. The sector as a whole recorded a rise in the price of funds on the interbank market, which was later reflected in the prices of primary funds from customers and in the level of required yields from securities.

Despite the moderate impact of the financial crisis on the banking sector, the risks faced by banks increased in the first half of 2008. This was primarily the result of credit risks in the household and corporate sectors.

The increase in credit risk related to households is mainly associated with the rapid growth in lending to households. Deteriorations were recorded in several credit risk indicators in respect of the household loans portfolio. The average amount of loans provided increased, mainly in reaction to the high real estate prices. Thus, monthly loan instalments also increased. This increase exceeded the growth in disposable household income. As a result, the ratio of loan repayments to household incomes increased.

The risk faced by banks in relation to households increased, mainly due as a result of growth in the volume of new loans. In 2007 and in the first half of 2008, the volume of new loans reached historical highs. These loans represent a higher risk for banks than loans provided earlier. The loan instalment burden in relation to income was higher than in the case loans provided earlier. Differences can mainly be observed in the case of loans provided in 2007 and 2007, when real estate prices increased to new highs, and loan instalments reached record amounts. For banks, new loans are also more risky because of the value of collateral. The high real estate prices and the effort to maintain the achieved market share forced banks to reduce their requirements concerning the value of loan collateral in relation to the loan provided.

Credit risk related to the corporate sector is assessed with regard to the selected groups of bank customers. Almost one-third of the exposures to corporate entities is formed by loans and debt securities issued by bank groups. A substantial part of the exposures is formed by receivables from own bank groups. In general, exposures to banks are classified as less risky exposures. This is also confirmed by the very low proportion of defaulted receivables vis-à-vis bank groups. However, the credit risk inherent in these receivables increased, mainly in response to the ongoing global financial crisis. Ratings were reduced for some of the bank groups, towards which domestic banks have exposures. The credit risk outlook for bank groups in the EU and USA is rather negative for the coming period.

A significant part of the corporate loan portfolio is formed by loans to key customers. These are loans to large supranational corporations, domestic state-owned enterprises and local governments, domestic private companies, and domestic financial institutions. The risks faced by banks are mainly given by the share of these groups in the total portfolio. The exposures of banks are dominated by exposures to small customers. The largest share of defaulted loans is recorded in loans to small customers.

The credit risks faced by banks were tested under selected stress tests, designed to assess the sensitivity of banks to specific negative situations. The results indicate that the banking sector is relatively resistant to the current unfavourable trends. The individual banks produced markedly different results. Compared with 2007, the sensitivity of banks to stressful situations remained virtually unchanged. Banks responded most sensitively to the scenario of a marked increase in defaulted loans, combined with suspended lending activity (credit crunch).

Market risks in the banking sector remained insignificant, despite the ongoing crisis. This can be ascribed to the conservative approach of banks: most banks closed their open market positions.

In terms of liquidity risk, the banking sector recorded no significant changes in the short term. The sector as a whole records adequate values in the indicators under review. In some of the banks, however, the liquidity situation deteriorated in the short term. To maintain an adequate level of liquidity, it is vital for banks to maintain a stable core of deposits. Some of the banks showed increased sensitivity to the stress scenarios related to the collection of deposits from customers and non-resident banks. Regarding liquidity in the long term, an important aspect is that lending activity in most banks is financed from stable customer deposits or from issues of long-term securities. Over the first six months, however, these indicators deteriorated in the banking sector.

***The other segments of the financial market recorded increased market risks***

The degree of risk in the financial sector increased in the first half of 2008, compared with the previous period. This is largely connected with the global financial crisis.

The turbulence in the financial markets increased in that period, mainly due to market risks. Despite a decrease, equity risk was still a dominant risk in the selected mutual funds, i.e. contributory funds within the third pillar, and balanced and growth funds within the second pillar of the pension system. Credit risk occurred in all funds within the second pillar of the pension system, but was relatively moderate. In the first half of 2008, however, its degree increased somewhat as a result of an increase in the volatility of domestic interest rates and an increase in the share of bonds. Exposed to exchange rate changes were only contributory funds forming the third pillar of the pension system and selected mutual funds.

***The financial sector was tested under various crisis scenarios***

The domestic financial sector's resistance to various scenarios of the financial crisis was assessed within the scope of stress testing. The tests have revealed the banking sector's increased sensitivity to the risks involved in the corporate sector. Credit risk related to households and/or market risks are likely to have serious consequences in a few banks only.

Pension funds and mutual funds will probably be affected by a decline in equity markets, but mutual funds investing in American shares by the exchange rate risk as well. The proportion of assets which may depreciate to a significant extent is relatively small, for approximately two-quarters of the investments in mutual funds are made in relatively conservative money market funds and/or in bond funds. Conservative pension funds and insurance companies are likely to suffer virtually no losses as a result of market risks.

**Box 1 The macroeconomic environment in Slovakia**

The rate of economic growth in the Slovak Republic slowed over the first half of 2008, with GDP at constant 2000 prices growing year-on-year by 8.7% in the first quarter and by 7.6% in the second quarter. On a year-on-year basis, this development was mainly influenced by the growing domestic demand. Within the scope of domestic demand, the first half of 2008 saw the most rapid growth in consumer demand (6.5% in real terms), which was 1.2 percentage points more than in the first half of 2007. The dynamics of household final consumption remained unchanged on a year-on-year basis (7.1%). The growth in the investment component of demand was 1.9 percentage points slower than a year earlier.

Falling steadily since 2005, the unemployment rate closed the first half of 2007 at 7.4%.

The average nominal monthly wage in the first half of 2008 reached SKK 20,950, representing a year-on-year increase of 9.7%. Real wages increased by 5.3%.

Inflation as measured by the Harmonised Index of Consumer prices (HICP) had been rising since the end of 2007 and reached 4.3% in June 2008.

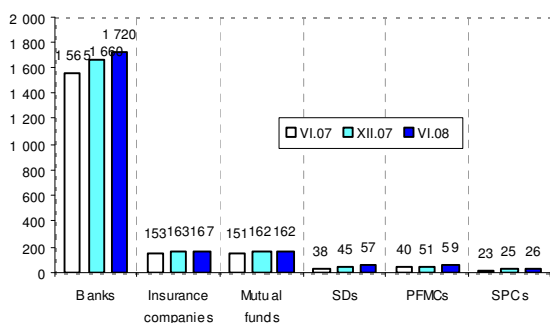
During the first half of 2008, the National Bank of Slovakia left its key interest rates unchanged and conducted no interventions in the foreign exchange market. On a year-on-year basis, two-year government bond yields increased by 0.79 of a percentage point, five-year government bond yields by 0.35 of a percentage point, and ten-year government bond yields by 0.28 of a percentage point (by 30 June 2008).

# Characteristics of the Slovak financial sector

## Activities of financial institutions

The first half of 2008 was the second six-month period marked by the ongoing crisis in global financial markets. Despite the continuing orientation of domestic financial institutions towards Slovak markets, which prevented the financial sector from being directly affected by the crisis in 2007 and the continuing growth in assets in most segments of the financial market (Chart 1), the first half of 2008 witnessed certain new situations in connection with activity and profit generation.

**Chart 1 Amounts of assets or assets under management in the financial market by segment**



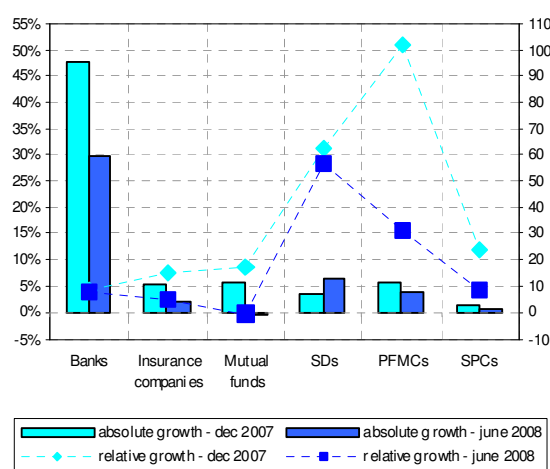
- Source: NBS.
- The data are in billions of SKK.

In 2007, the financial crisis affected mostly the customers of financial institutions, rather than the institutions themselves, which was mostly due to the exposure of these customers to equity markets (mainly mutual funds and Unit-linked products). In the first half of 2008, the impact of the crisis upon the customers of financial institutions deepened (some of the pension funds were also affected)(Chart 9), but some of the financial institutions also started to be affected by the crisis. This led to a slowdown in their activity (Chart 2) and to increased pressure on profitability (Chart 3).

The impact of the crisis on the activity and profitability of financial institutions is,

however, still much weaker than its impact upon customers. In the case of banks, this is connected with the fact that part of the financial assets of households depreciated, which was not accompanied by a depreciation of their financial liabilities, namely loans.

**Chart 2 Absolute and relative increases in assets in the financial market by segment**

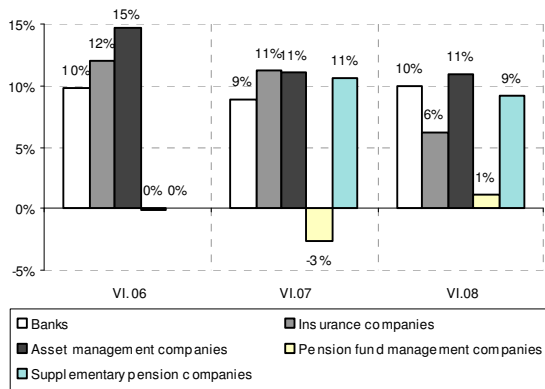


- Source: NBS.
- Amounts (right-hand scale) are in SKK billions.
- Relative changes (left-hand scale) are in %.

The decrease in the size of relative changes was, in numerous cases (mainly in the case of pension funds), caused by a base effect or by the appreciation of the Slovak koruna, which reduced the value of assets in foreign currency. This cannot be interpreted as the impact of the crisis, except in the case of mutual funds.



**Chart 3 Average values of ROE in the financial market by segment**

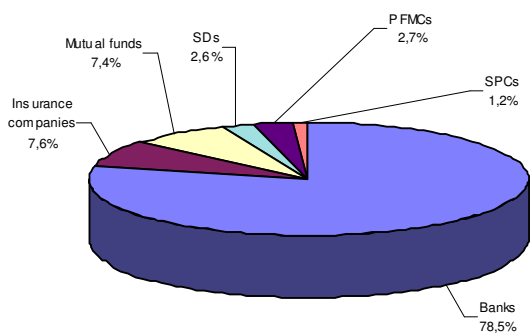


- Source: NBS.

An important development was, however, the diminishing absolute increase in most sectors, which may indicate a slowdown in activity in the first half of 2008, compared with the second half of 2007.

This development is responsible for the continuation of the long-term trend, under which the individual sectors have a more or less constant share of total assets (Chart 4), while Pillar II pension funds gradually increase their share to the detriment of the banking sector.

**Chart 4 Structure of assets and assets under management by segment: entities under NBS supervision**



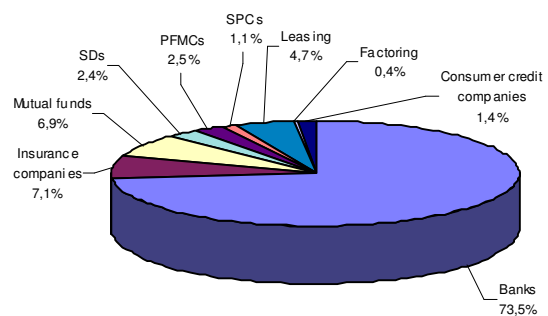
- Source: NBS.

Apart from the entities under supervision, there are leasing companies, consumer credit companies, and factoring companies operating

in the market, the majority of which are parts of bank groups. In the first half of 2008, the lending activity of banks in the area of consumer loans was, in contrast with the second half of 2007, more intense than the activity of consumer credit and leasing companies. While banks managed to lend SKK 4.9 billion in consumer loans over the first half of 2008, compared with SKK 3.4 billion in the second half of 2007, non-bank entities provided only SKK 1.7 billion, compared with SKK 7.3 billion in the same periods.

Owing to a slowdown in activity, the share of leasing and consumer credit companies of total assets in the financial market decreased slightly (Chart 5).

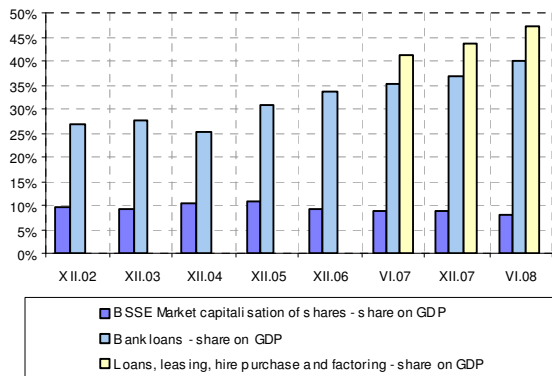
**Chart 5 Structure of assets and assets under management by segment: all entities**



- Source: NBS.

On the other hand, indirect financing (lending, leasing, and factoring) continued to exceed direct financing through the Bratislava Stock Exchange (Chart 6).

**Chart 6 Direct and indirect financing**

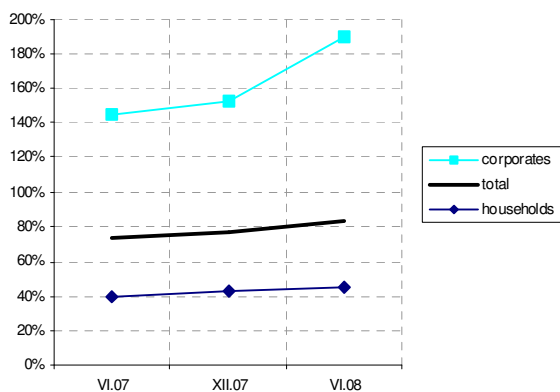


- Source: NBS.

This situation is logical with regard to the low significance of the Bratislava Stock Exchange (BSSE) within the EU and the fact that numerous large companies which could issue securities are either financed within their parent groups or they issue securities on other stock markets.

The continuing lending activity of banks and non-bank entities contributed to the increased indebtedness of enterprises and households. This, coupled with a decline in corporate deposits at banks, led to an increase in the share of liabilities in total assets in both sectors.

**Chart 7 Financial assets and liabilities of households and enterprises**

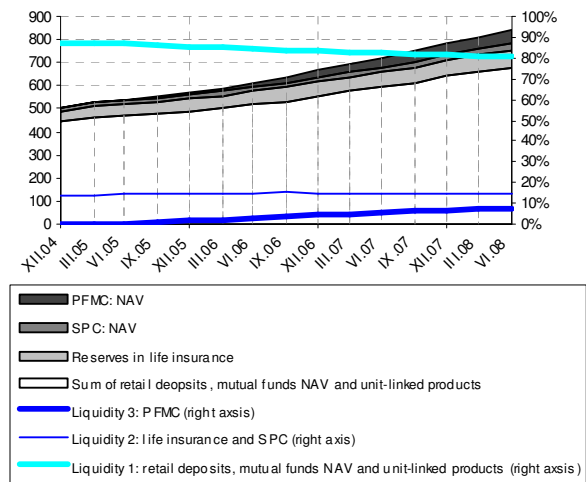


- Source: NBS.  
 - The percentage expresses the ratio of financial liabilities to financial assets.

In the long term, this may result in a fall in the financial sector's liability, which may increase expenses on the acquisition of funds for lending purposes, mainly in the case of banks.

**Financial assets of households**

**Chart 8 Financial assets of households: changes in terms of liquidity**

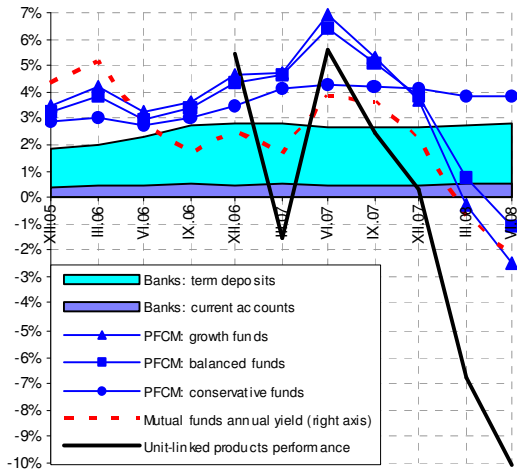


- Source: NBS  
 - Data on the left-hand axis are in SKK billions.  
 - Liquidity 1,2,3 expresses the liquidity of assets, i.e. how quickly they can be converted into cash; liquidity 1 means the highest level of liquidity.

In terms of volume, the positive growing trend in the financial assets of households continued in all products. Like in previous years, deposits grew most dynamically in pension accounts, but bank deposits maintained their absolute dominance in terms of volume (Chart 8).

The financial assets of households yielded different returns. The left end of the interval shows conservative pension funds with an average return of 3.8% and bank deposits with an average term deposit rate of 2.8%, the opposite end of the interval displays unit-linked products with a return of -10.1% or pure equity funds with a return of -29.3 %.

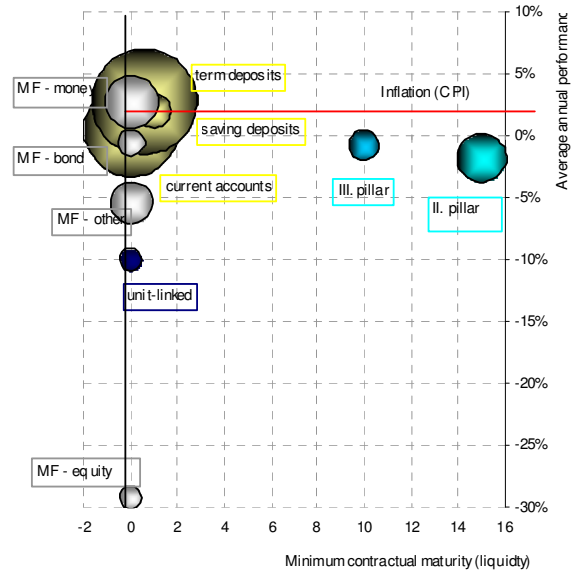
**Chart 9 Return on households' financial assets by type**



- Source: NBS.
- Performance is calculated per annum (which is an average value in the case of banks).
- Data on yields written in life insurance are not available.

As far as household savings are concerned, it is important that a substantial part of such savings is held in instruments with less volatile yields (bank deposits) or in products with a sufficiently long saving horizon to compensate for the short-term volatility in the financial markets (pension saving).

**Chart 10 Structure of households' financial assets by return, liquidity, and risk**



- Source: NBS.
- The circle size expresses the volume of assets.
- Data on yields written in life insurance are not available.

### Selected financial flows

In the first half of 2008, the exposure of the domestic financial sector to other economic entities increased somewhat. The most significant increases occurred in financial flows with real economic entities (household, enterprises), on the assets as well as liabilities sides. Thus, households and enterprises strengthened their positions as dominant debtors and creditors in the domestic financial sector. On the asset side, the relations between the domestic financial sector and the real economy were formed almost exclusively by bank loans, which showed relatively dynamic growth in both the household and corporate sectors over the first six months of 2008. On the other hand, the volume of financial instruments derived from the real economy and held in the domestic financial sector increased only as a result of the behaviour of households, which increased their bank deposits and long-term investments in life insurance, collective

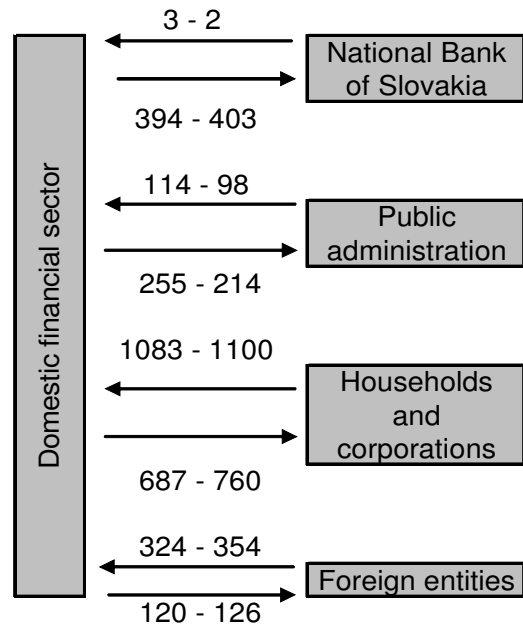
investments, and pension savings under both pillars. Corporate deposits declined in the first half of 2008, though it should be added that this decline can be mostly attributed to the December seasonal increase in corporate deposits. Thus, the net debtor position of enterprises to the financial sector deepened still further. The opposite applies to households, though in relation to the banking sector, their liabilities grew more rapidly than receivables.

A bilateral increase in financial flows was also recorded in relation to financial institutions. An inflow of foreign bank deposits into domestic banks strengthened the net creditor position of foreign entities vis-à-vis the domestic financial sector. Funds from foreign banks, together with other instruments, are in large measure invested repeatedly in reverse repo transactions with the NBS via domestic banks. As a result of this situation, a significant part of assets from the domestic banking sector is utilised in reverse repo transactions with the NBS.

A fall in mutual financial flows occurred in relation to the general government. This fall can partly be explained by a change in the behaviour of the Agency for Debt and Liquidity Management (ARDAL). Significant decreases were mainly recorded in bank loans provided to this sector.

Within the financial sector, the mutual positions of banks increased most significantly. The dominant position of the banking sector, which has the largest volume of assets at its disposal, is also ensured by the fact that all domestic financial institutions hold a significant part of their assets in banks.

**Diagram 1 Selected links between the financial sector and other sectors (December 2007 and June 2008)**



- Source: NBS.

**Table 1 Selected financial flows**

in SKK bn	NBS	Domestic financial sector						Domestic non-financial sector			Foreign entities			
		Domestic banks	Insurance companies	PFMCs	SPCs	AMCs	Other fin. comp.	Households	Corporations	Public administration	Foreign banks	Foreign AMCs	Foreign public administration and int. institutions	Other
NBS		3 - 2,4	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0,3 - 0,3	0,1 - 0,1		192 - 168		201 - 179	25 - 19
Domestic banks	394 - 403	56 - 69	0,04 - 0,03			0 - 0	67 - 61	283 - 320	404 - 440	255 - 214	70 - 78		1 - 2	49 - 46
Insurance companies	0 - 0	49 - 47				4,3 - 5,1								
PFMCs + SPCs	0 - 0													
AMCs	0 - 0	32 - 40				7,7 - 8,5								
Other fin. comp.	0,1 - 0,04	32 - 34												
Households	0,9 - 1	494 - 525	67 - 74	51 - 59	25 - 27	109 - 113								
Corporations	0 - 0	336 - 300				1,4 - 1,9								
Public administration	0,1 - 0,03	114 - 98				0 - 0,07					28 - 23			
Foreign banks	7 - 6	295 - 324												
Foreign AMCs														
Foreign public administration and int. institutions	0,2 - 0,4	0,3 - 0,2				1,7 - 2,2								
Other		27 - 28												

- Source: NBS.
- The data are in billions of SKK.
- The structure of data in the cells: December 2007 - June 2008.
- Rows: financial assets (loans and securities) invested in institutions given in the columns.
- Columns: liabilities (deposits and loans received) towards institutions given in the rows.
- For insurance companies, the value of technical reserves for life insurance is given.

# 1. The banking sector

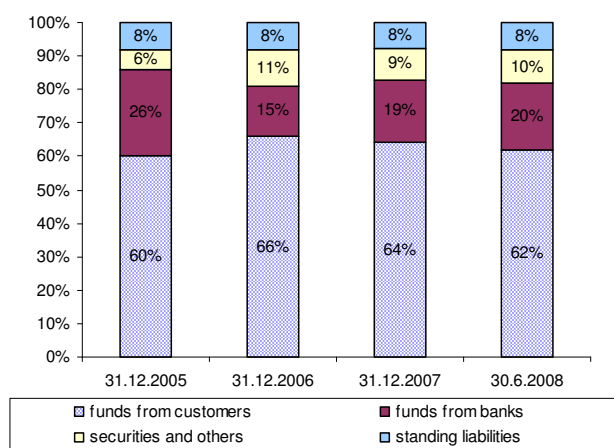
## Main changes and trends in the liabilities of banks

The liabilities of the Slovak banking sector are still dominated by funds received from customers, though their share shows a decreasing tendency (62% of total liabilities as at 30 June 2008). This decrease can be attributed to the volatility of corporate deposits and general government deposits. The increasing share of funds from banks was mainly the result of funds received from foreign banks, the volume of which increased over the first half of 2008. Banks issued securities mostly in the form of mortgage bonds, which reflects the persistently high demand for mortgage loans among customers.

Retail deposits represent a relatively stable source of asset financing for the banking sector; their volume is on the increase in the long term, and they are cheaper for banks than other deposits. The second largest source of financing is corporate deposits, which are, however, more volatile and more expensive. Corporate deposits are formed predominantly by sight deposits or short-term deposits (up to one month); this is connected with the fact that enterprises use bank deposits for cash-flow financing, rather than for saving purposes. In the recent period, the deposits of non-bank financial companies have been increasing as a percentage of customer deposits, which is connected with the growing popularity of money market funds as a form of investment. A major component of such deposits are term deposits at banks. The fourth and most volatile component is general government deposits, which, however, cannot be classified as a stable source of financing.

The loan-to-deposit ratio continued to increase over the first half of 2008, up to 82% in June 2008.

**Chart 11 Structure of liabilities in the Slovak banking sector**



- Source: NBS.

During the first half of 2008, the liabilities of the banking sector as a whole followed a trend that was comparable with that in the previous two years. Total funds from customers decreased somewhat in comparison with December 2007, by less than SKK 4 billion (0.4%), due to drops

in deposits and loans received from enterprises and from the general government. The other aggregates increased. The strongest growth was recorded in funds received from banks, mainly from foreign banks. As a result, the share of funds from customers in total liabilities continued to decrease, whereas the share of funds from banks increased.

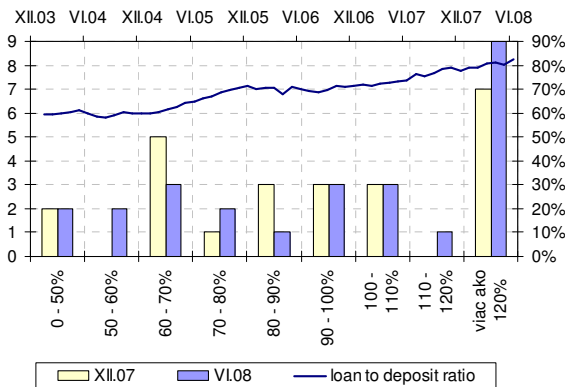
The loan-to-deposit ratio<sup>1</sup>, which is an important indicator of the extent to which the banking sector is able to finance its lending activity from domestic sources, continued to increase in the first half of 2008. Its value for the banking sector stood at 82%, which was 5 percentage points more than at the end of 2007 and 9 percentage points more than a year earlier.

The value of the ratio dropped in several banks only, while rising or remaining unchanged in the other banks. In branches of foreign banks,

<sup>1</sup> The loan-to-deposit ratio is defined as the ratio of total receivables from customers to the sum of liabilities to customers, excluding the deposits of ARDAL, plus issued mortgage bonds.

the loan-to-deposit ratio was above 100%. On the other hand, banks with a strong position in the retail market had a loan-to-deposit ratio below the sectoral average.

**Chart 12 Loan-to-deposit ratio: development and distribution**



- Source: NBS.
- The lower horizontal axis gives the intervals of the ratio, the number of banks with the given ratio is on the vertical axis.
- The upper horizontal axis gives the date of the ratio's average value, the average value is on the right-hand vertical axis.

## Funds from customers

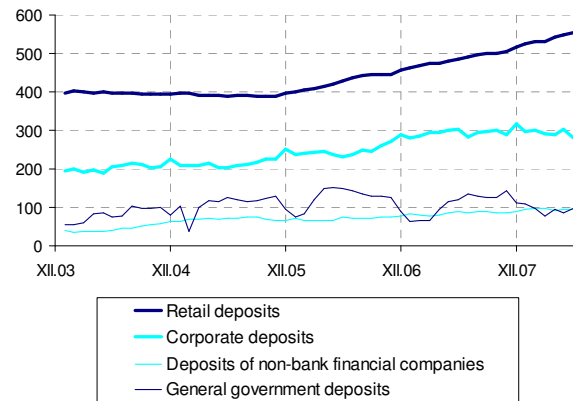
Funds from customers represent the largest component in the banking sector's liabilities in the long term, though their share of total assets has been decreasing in recent months. At the end of June 2008, they accounted for 62% of the liabilities. Compared with the end of 2007, they decreased in volume by SK 4 billion (0.4%), while increasing year-on-year by SKK 39.1 billion (3.8%).

The decrease in comparison with the end of 2007 was the result of volatile developments in corporate and general government deposits. Since the end of 2006, corporate deposits had been fluctuating at the level of SKK 280 – 320 billion. At the end of June 2008, their volume stood at SKK 280 billion. General government deposits represent another volatile component in funds from customers. Compared with the end of 2007,

they decreased by SKK 14 billion (12.7%) and on a year-on-year basis by SKK 21 billion (18%).

A less volatile component is formed by retail deposits, which had grown over the past year by more than SKK 30 billion (7%). The deposits of non-residents, which form the smallest component of funds from customers, had increased since the end of 2007 by only SKK 0.7 billion (by SKK 8 billion year-on-year).

**Chart 13 Main aggregates of customer deposits**



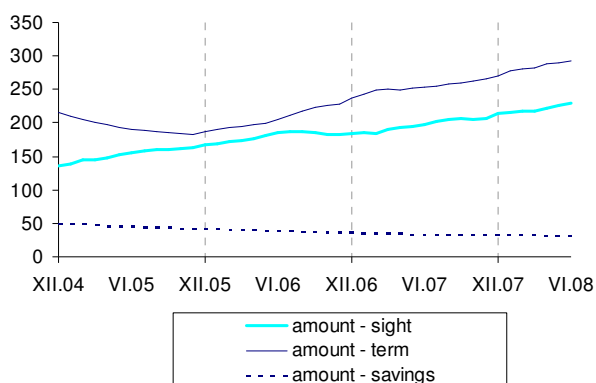
- Source: NBS.
- The data are in billions of SKK.

## Retail deposits

Retail deposits continued to grow in the first half of 2008. In June 2008, their total volume stood at SKK 553.3 billion, representing a semi-annual increase of SKK 35.4 billion (6.8%) and an annual increase of SKK 68.4 billion (14.1%). Annual and semi-annual increases were recorded in term deposits, which account for 52.8% of the retail deposits, as well as in sight deposits, which account for 41.4% of the total deposits. A slight decline was recorded in savings deposits, which account for only 6% of the volume of retail deposits.

Retail deposits increased in almost all banks, their volume fell only in some of the banks with a less significant share of retail deposits in liabilities.

**Chart 14 Retail deposits**

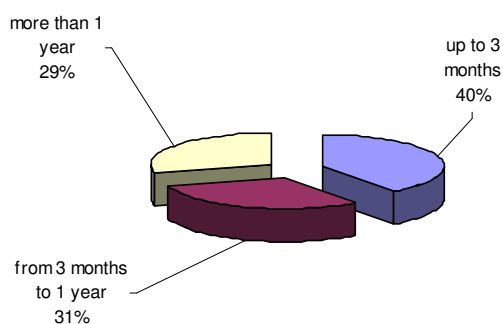


- Source: NBS.
- The data are in billions of SKK.
- Only koruna loans are included in the chart.

Term deposits are dominated by deposits fixed for a period of up to 3 months. In building societies, long-term deposits (over 1 year) are dominated by deposits with a maturity of over 5 years (70%)

Retail deposits are formed mostly by sight deposits and deposits with a maturity of up to 3 months. In the sector as a whole, these deposits account for 63.2% of the total volume of retail deposits and 18.7% of the total liabilities.

**Chart 15 Breakdown of term deposits by maturity**

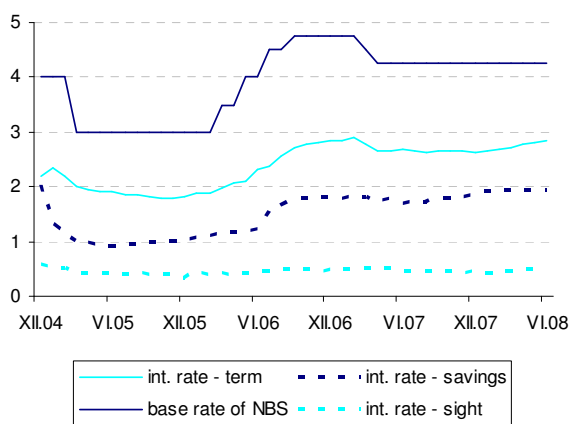


- Source: NBS.

Interest rates on sight deposits, hovering in the long term around the level of 0.5%, rose by only 0.04 of a percentage point over the first half of the year. To some extent, interest rates on term

deposits follow the course of the NBS basic rate. The correlation coefficient between monthly changes in the basic rate and term deposit rates is 0.52. The values of these rates rose slightly over the first half of 2007, which is probably connected with the entry of Slovakia into the euro area with effect from 1 January 2009 and the related increase in interbank rates on the Slovak market (for more information see 'Interbank Market').

**Chart 16 Interest rates on retail deposits**

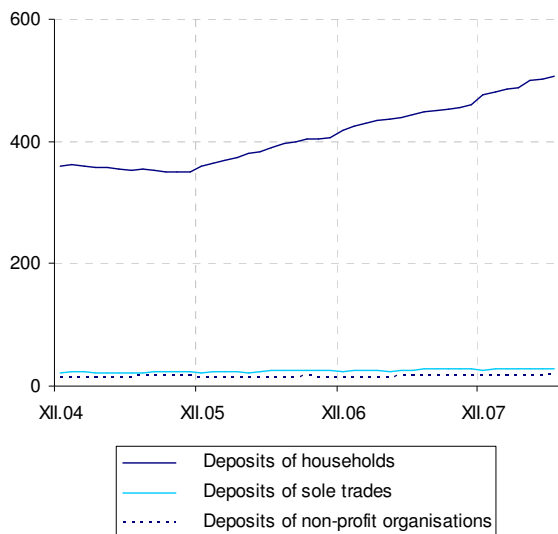


- Source: NBS.
- The data are given as percentages.

Retail deposits are dominated by deposits and loans received from households (91.5%). Deposits and loans received from sole traders account for less than 5.3%, deposits and loans received from non-profit organisations for 3.2% of the total volume of retail deposits.



**Chart 17 Breakdown of retail deposits by counterparty**



- Source: NBS.
- The data are in billions of SKK.

Slovak-koruna deposits still account for 92% of the total volume of retail deposits. In the long term, they follow the trend in household deposits. The remaining 8% is formed by foreign-currency deposits, the volume of which fluctuates in the long term in the range of SKK 40 – 44 billion.

## Corporate deposits

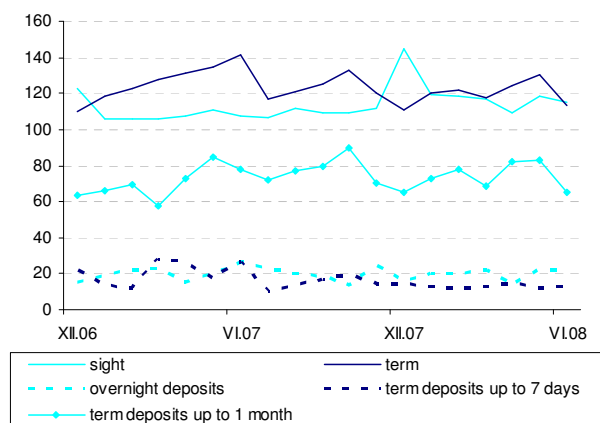
The second most significant source of funds from customers is corporate deposits (with a share of 26%). The total volume of corporate deposits in the Slovak banking sector reached SKK 280 billion at the end of the first half of 2008. This was SKK 22 billion (7%) less than a year earlier. Deposits declined most sharply in branches of foreign banks (by 28%). In medium-sized and large banks, their volume remained virtually unchanged on a year-on-year basis. Although the year-on-year change indicates a falling trend, the situation was somewhat different in the period under review. The times series show that these deposits had been more or less stagnant over the past twelve months, at a level closely below SKK 300 billion. On a month-on-month basis, they were relatively volatile. The situation over the first six months

was connected with the trend recorded in the second half of 2007, when the long-term growing trend from the previous period came to a halt.

The concentration of corporate deposits was rather high in the sector. In June 2008, the bank with the largest share held 30% of these deposits, the first five banks in this indicator accounted for almost three-quarters of the total volume. The concentration of these deposits shows an increasing tendency, for both shares stated above were about 5 percentage points smaller at the end of the first half of 2007.

Corporate deposits usually have short maturities, 54% of them are sight deposits. Term deposits are also concentrated in the short-term category, mainly in the segment with a maturity of up to one month. This is naturally connected with the fact that enterprises use bank deposits for cash-flow financing, rather than for saving purposes. Hence, corporate deposits are considered to be a less stable source of financing than retail deposits, which is also indicated by the more volatile developments in the volume of such deposits. The dominant operational character of corporate deposits is the reason why the total volume of these deposits is virtually independent of the level of interest rates. In the case of term deposits, however, a certain degree of correlation can be observed.

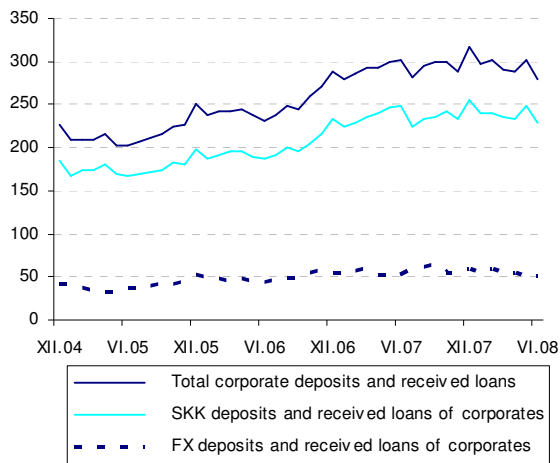
**Chart 18 Breakdown of corporate deposits by maturity**



- Source: NBS.
- The data are in billions of SKK.

A significant part of the corporate deposits is in foreign-currency deposits. In June 2008, they accounted for 18% of the total volume. This share increased on a year-on-year basis, though these deposits decreased in absolute terms, but to a lesser extent than deposits in Slovak koruna. The highest relative relevance of foreign-currency deposits for financing can be seen in the branches of foreign banks. Most foreign-currency deposits (more than four-fifth) are denominated in euro.

**Chart 19 Corporate deposits and received loans**

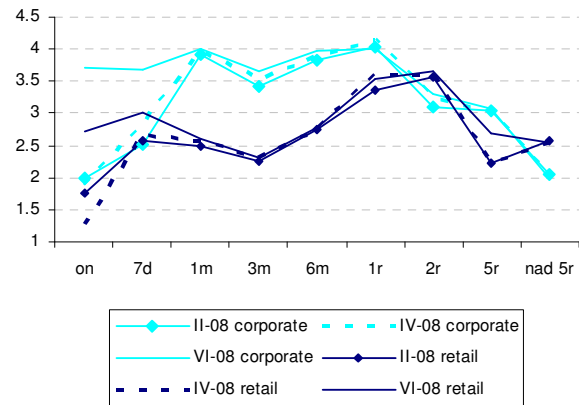


- Source: NBS.
- The data are in billions of SKK.

The average price of funds in Slovak koruna, which banks received from enterprises, fluctuated in the range of 2% to 2.4% over the first half of 2008. Term deposits offered interest at a rate of 3.5%, sight deposit at less than 1%. The yield curve had an indefinite (non-standard) shape, as illustrated in Chart 20. The yield curve was stable over the first six months, except in January and June at rates for the shortest maturities (up to one week). Interest rates have been stable for a longer period, since they are derived from the basic rate of the NBS, which was last changed in April 2007. In the period under review, corporate deposits (in Slovak koruna) represented a greater interest burden for banks than retail deposits. The most significant differences to the detriment of

corporate deposits were recorded in rates for one-month to one-year maturities. Banks also offered higher interest for corporate deposits than for retail deposits in the case of sight deposits.

**Chart 20 Interest yield curves for retail and corporate deposits**



- Source: NBS.
- The data are given as percentages.
- The horizontal axis gives the contractual maturities of deposits.

## Deposits of non-bank financial companies

The deposits of non-bank financial companies grew year-on-year at a rate of 8% in June 2008. At the end of the period under review, banks had Sk 94 billion at their disposal in deposits from such institutions. Deposits from non-financial companies accounted for less than 9% of the total volume of customer deposits. From the viewpoint of the sector as a whole, these deposits were relatively stable. The average of the absolute values of relative month-on-month changes in their volumes in the first half of 2007 and the first half of 2008 was only 2%.

The market for deposits from non-bank financial companies was concentrated in the largest banks of the sector. The first five major banks held 72% of these deposits.

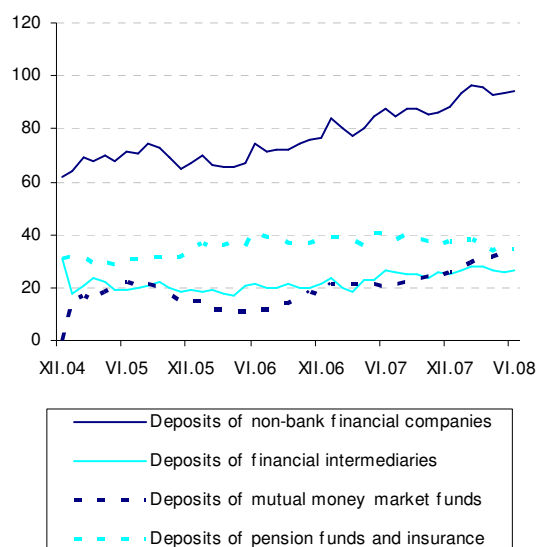
The category of non-bank financial companies can be divided into three sub-categories: pension funds and insurance companies, money market mutual funds, and

financial intermediaries (non-monetary mutual funds, leasing and consumer credit companies, etc.). The uncertainty in the financial markets in the recent period motivated investors to make low-risk investments in money market mutual funds. Together with such investments, the funds deposited in bank accounts, which represent an important component in the portfolios of these funds, increased year-on-year by 64%. On 30 June 2008, the volume of these deposits reached SKK 33 billion. Thus, the overall increase in deposits from non-bank financial companies can be attributed to money market mutual funds. Deposits in similar amounts, as in money market funds, were recorded in pension funds and insurance companies. These deposits, however, showed a slightly falling tendency on a year-on-year basis. Financial intermediaries had deposits at banks in the amount of SKK 26 billion, of which ca. SKK 11 billion was in collective investment funds.

The deposits of collective investment funds, pension funds, and insurance companies, which have a dominant share in this category, are mostly investments in character. This is indicated by the large share of term deposits (86%). In most cases, the fixation of these funds does not exceed one month. It is possible that part of the funds is invested in sterilisation repo tenders with the NBS and the question is how these deposits will develop after the introduction of the euro.

Interest rates on koruna deposits from non-bank financial companies (for maturities from 1 week to 1 month inclusive and from 6 months to 1 year inclusive, which are significant in terms of volume) were virtually at a standstill over the twelve months preceding June 2008. Term deposits with a maturity of 1 week to 1 month inclusive, which account for 58% of the total volume of koruna deposits in this sector, offered an average yield of 4.1% throughout the period under review. Thus, in terms of yield, these deposits were somewhat above the level of corporate deposits.

**Chart 21 Deposits of non-bank financial companies**



- Source: NBS.
- The data are in billions of SKK.

## General government deposits

General government deposits represent the most volatile component of customer deposits in the long term. This was also confirmed in the second half of 2007 and subsequently in the first half of 2008. In that period, the volume of deposits fluctuated within a relatively wide range, from SKK 80 billion to SKK 140 billion, and closed the month of June 2008 at SKK 98 billion. This represented a year-on-year decline of 18%.

The two main components of general government deposits are deposits from the central government and from local governments. In June 2008, local governments had SKK 67 billion deposited in the Slovak banking sector, almost exclusively in term deposits with a maturity of one day or up to one month. The euro deposits of the SR Treasury, predominantly represented by the Agency for Debt and Liquidity Management (ARDAL) and the National Property Fund (FNM), accounted for SKK 37 billion of this amount. At the same date, local government deposits reached SKK 30 billion. These were mostly current accounts denominated in Slovak koruna.

The average interest rate on general government deposits held in Slovak koruna fluctuated over the first half of 2008 between 0.5% and 0.8% for sight deposits, and between 3.5% and 3.9% for term deposits.

The list of banks using general government deposits for financing in significant amounts is very limited. This liability item accounts for more than one percent of the total assets in five banks only.

### Funds gained from issues of securities

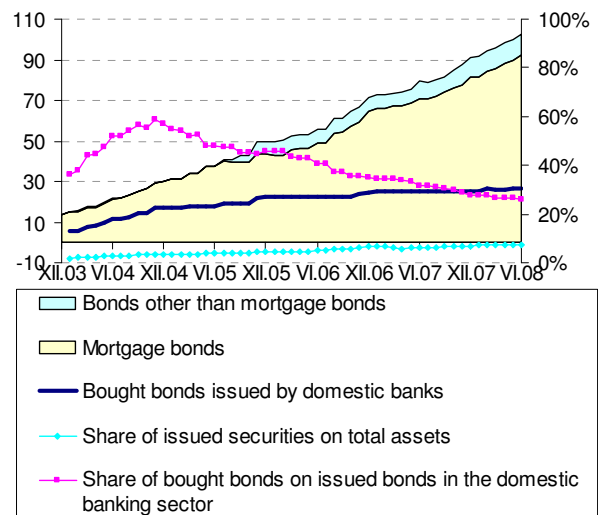
For banks, the second alternative for obtaining external sources of financing is the issuance of securities. The total volume of funds obtained in this way in the Slovak banking sector stood at SKK 124 billion in June 2008. Issues of securities covered 7.2% of the sector's total liabilities. On a year-on-year basis, this share increased by approximately 1 percentage point, due to dynamic growth in this component. This development is expected to strengthen the stability of credit financing, because securities have longer maturities as a rule.

The most significant increase occurred in the volume of mortgage bonds (SKK 22 billion year-on-year as at 30 June 2008), which account for three-quarters of the securities portfolio. Mortgage bonds were issued by all nine banks holding a mortgage licence.

Bonds other than mortgage bonds still play a marginal role in financing in the Slovak banking sector (SKK 10 billion). Only four banks had issued own bonds before June 2008.

The third category of securities, through which banks obtain funds for financing, comprise bills of exchange. The character of bills-of-exchange transactions is basically similar to that of term deposits; bills of exchange usually have a maturity of up to one year. At the end of June 2008, the total value of bills of exchange issued in the Slovak banking sector reached SKK 21.5 billion, representing a year-on-year increase of less than 3%. At the end of the period under review, only seven banks had bills of exchange issued in significant amounts.

**Chart 22 Structure of issued securities**



- Source: NBS.
- Data on the left-hand axis are in billions of SKK (volumes of securities)
- The right-hand axis gives the share of securities of total assets in %.

## Main changes and trends in the assets of banks

The first half of 2008 saw an increase in bank assets, which can be ascribed to the continuing orientation of banks towards lending to customers. The strong economic growth, coupled with increased consumption, investment, and rapid growth in the residential and commercial real estate markets, created conditions for buoyant demand, mainly in the corporate and household sectors. At the end of the first half of 2008, loans to customers accounted for almost 55% of the total assets (compared with 45% in the same period a year earlier). The largest increases in that period were recorded in loans to households and enterprises, compared with the previous periods. The concentration of loans to customers in the three leading banks continued to increase.

Investment in securities continued to decline in the first half of the year. In large banks, this was connected with the expiration of the maturities of several government bond issues. Investment in the selected securities was also affected by the ongoing financial prices.

In the first half of 2008, the assets of banks were still oriented to the domestic economy, with more than 90% of them linked to domestic entities. They were dominated by assets denominated in the domestic currency.

### Loans to corporations

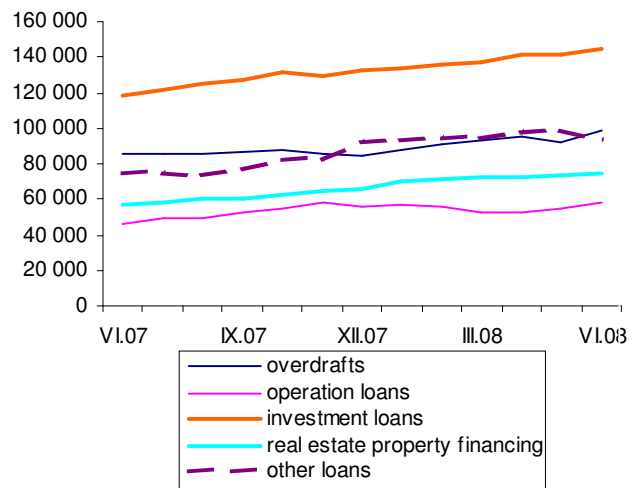
The volume of loans provided to the corporate sector continued to grow over the first half of 2008, though at a slower pace than loans to households.

Slower growth was mainly recorded in long-term loans in that period. A slowdown in comparison with the second half of 2007 was observed in investment loans and real estate loans (under project financing). Short-term loans, current account overdrafts, and operating loans grew at approximately the same rate.

The trend of lending to enterprises in domestic currency continued in the first half of 2008, when loans were provided almost exclusively in Slovak koruna.

As we have already mentioned, the volume of corporate loans is much more volatile than that of household loans. This can be explained by the lower diversification of the corporate loan portfolio (its structure can be changed by a single customer), the different needs of enterprises for financing compared with households, and the greater competition between banks. Hence, the share of banks in corporate financing may often change.

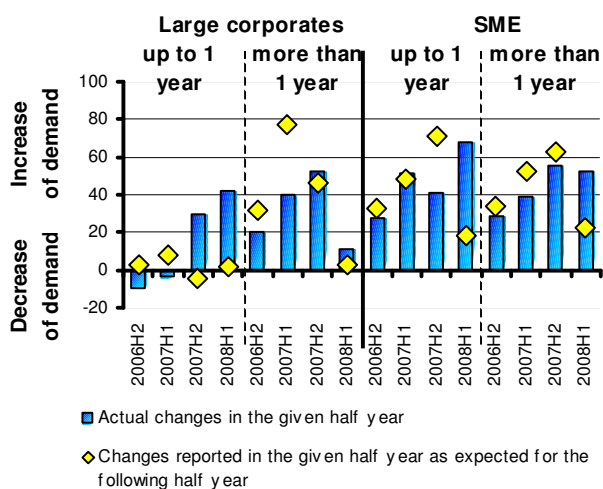
**Chart 23 Lending to the corporate sector**



- Source: NBS.
- The data are in millions of SKK.

In the first half of 2008, there was a strong demand for loans in the corporate sector, stronger than in the previous periods. Demand increased for all types of loans. Permanently strong demand was shown by small- and medium-sized enterprises. This development was caused by the still strong economic growth and the need of enterprises to finance their operations and investment projects.

**Chart 24 Demand for loans in the corporate sector**



- Source: NBS, Bank lending survey.
- The data are given as net percentages, a positive value means an increase in demand.
- Changes in demand are based on the subjective views of banks.

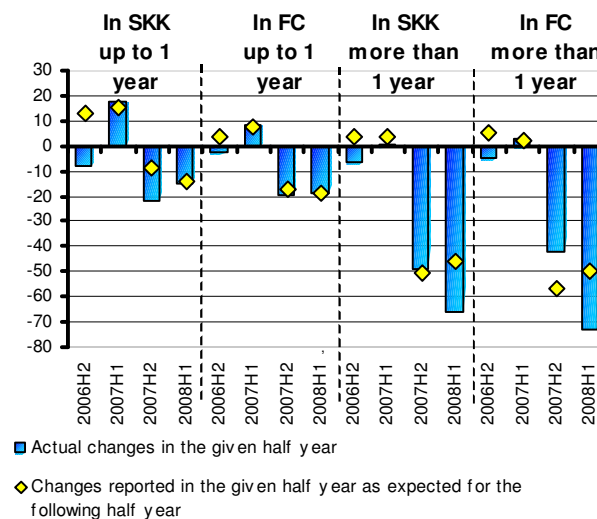
Banks adopted a more prudent approach to corporate financing in the first half of 2008. Despite the strong demand and growth in lending, numerous banks tightened their credit standards. Unlike in the second half of 2007, the tightening of credit standards affected not only the large companies but small- and medium-sized enterprises as well.

Banks view the future course of macroeconomic development as negative, as well as the risks related to certain sectors or customers. Banks tightened their lending conditions as early as the second half of 2007, for sectors that are sensitive to changes in the business cycle, mainly for the commercial real estate sector and for private equity projects. Similar developments can be observed in the banking sectors of other EU countries, where banks tightened their credit standards due to uncertainty about the future trend in economic development.

The tightening of credit standards at domestic banks was connected with the fact that funds for corporate financing had become more difficult to obtain and more expensive. For some of the

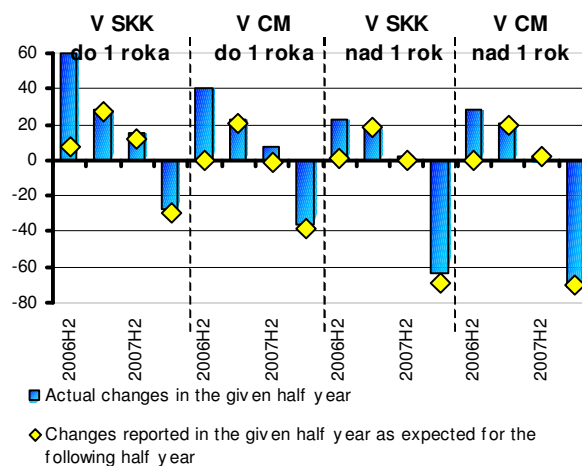
banks, another limiting factor was the lower capital requirement.

**Chart 25 Credit standards for loans to large enterprises**



- Source: NBS, Bank lending survey.
- The data are given as net percentages, a positive value means a loosening of the standards.
- Changes in the standards are based on the subjective views of banks.

**Chart 26 Credit standards for loans to small- and medium-sized enterprises**



- Source: NBS, Bank Lending Survey.
- The data are given as net percentages, a positive value means a loosening of the standards.
- Changes in the standards are based on the subjective views of banks.

Bank lending to corporate entities was at its peak, but was somewhat lower than in the second half of 2007. This development was closely connected with the strong economic growth and is likely to continue.

The rate of economic growth reached its peak in 2007. The Slovak economy still shows strong growth, one of the strongest in the EU, but this growth is likely to moderate in the coming years. This will also be influenced by developments in EU countries, to which the exports of domestic enterprises are directed.

The willingness of banks to provide financing will also depend on developments in the specific sectors and corporations. Bank loans were previously directed in large measure to risky areas, such as commercial real estate financing, the restructuring of domestic companies, etc.

The dynamics of lending will also be influenced by the tightening of credit standards. The uncertainty about the future trend in economic development, the price and availability of funds for financing, and the pressure on capital requirements for banks will gradually reduce the availability of loans for corporate customers.

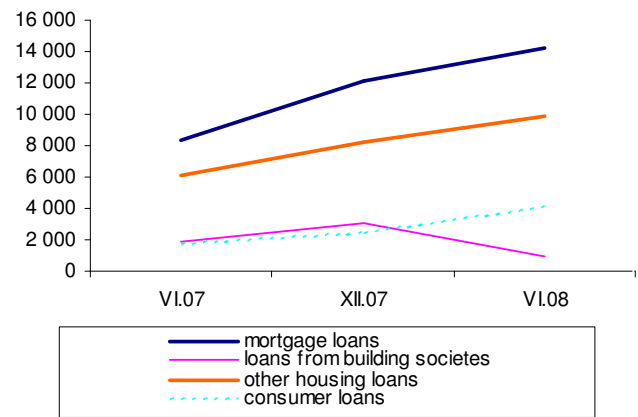
### Loans to households

The financing of households by banks continued to grow at a fast pace in the first half of 2008. The rate of growth accelerated mainly in the case of house purchase loans. Mortgage loans and other loans for house purchases increased by 18% over the first half of 2008, and year-on-year by almost 38%. Home savings bank loans increased to a lesser extent. Consumer loans also maintained their dynamics from the previous period.

The growth in loans was relatively unevenly distributed over the banking sector. The growth in housing loans took place mostly in the largest banks. The three largest banks accounted for 77% of the total increase in house purchase loans in the first half of 2008. The five leading banks accounted for almost 90% of the increase in loans in this segment, while their share steadily increased.

The three largest banks also had a significant share of the volume of consumer loans.

**Chart 27 Changes in the amounts of loans provided to households**



- Source: NBS.
- The data are in millions of SKK.
- The vertical axis gives the changes in the amounts of household loans by category.

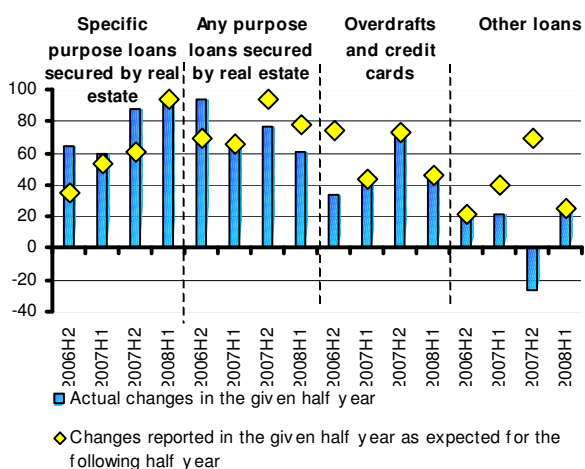
Interest in financing through home savings bank loans was relatively low in the first half of 2008. Decline was mainly recorded in building loans. Intermediate loans increased somewhat.

Almost all loans to households were provided in domestic currency. Loans in foreign currency accounted for 2.6% in June 2008, after recording a fall in volume at the beginning of the year.

In the first half of 2008, the loans provided increased in terms of both volume and number. The number of housing loans provided in that period increased by 11% in comparison with the second half of 2007. They grew in volume to a significant extent, hence the average volume of new housing loans increased. This indicator increased in almost all banks.

In the first half of 2008, demand factors had a more significant influence on the dynamics of lending to households than supply factors. Almost all banks recorded an increase in demand, mainly for house purchase loans.

**Chart 28 Demand for loans in the household sector**



- Source: NBS, bank lending survey.
- The data are given as net percentages, a positive value means an increase in demand.
- Changes in demand are based on the subjective views of banks.

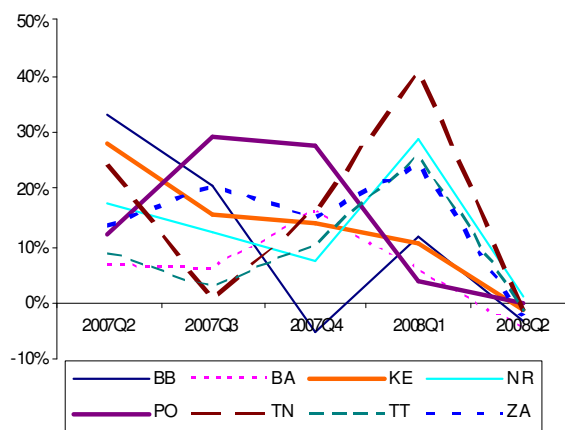
The domestic economy showed rapid growth (one of the strongest in the EU), unemployment was falling, and real wages were on the increase. These factors were responsible for the positive attitude of households to their growing indebtedness.

The household sector, i.e. the capacity of households to repay loans, was also viewed by banks in a positive light during the first six months. Some of the banks partially eased their standards for granting loans for real estate property purchases, mainly as a result of competition on the part of other banks. However, the majority of banks kept their credit standards unchanged.

The willingness to get into debt was largely supported by the upward trend in real estate prices. The expectation of a further price increase made households to purchase real estate property as soon as possible, at a lower price. Owing to the faster rise in real estate prices than in wages or savings, households had to finance a larger part of the purchase price from a bank loan when buying a real estate property. For banks,

increased real estate prices mean loans in larger amounts and increased collateral requirements.

**Chart 29 Quarterly changes in residential property (3-room flat) prices by region**



- Source: Real Estate Price Map, NBS calculations.
- The left-hand axis gives the changes in % compared with the previous quarter.

From the viewpoint of real estate prices and their relation to the volume of loans provided, the first half of 2008 can be divided into two phases: the first quarter of 2008, when real estate prices continued to rise, and the second quarter of 2008, which saw a falling trend in these prices in almost all regions.

The fall in real estate prices in the second quarter has not yet caused a slowdown in bank lending. This is due to the larger number of loans provided in comparison with the previous periods.

In evaluating of the impact of changes in the real estate market and the volume of loans provided, it should be mentioned that real estate prices dropped in certain categories only.

The rate of growth in loans to households is currently at its peak. The question is how long the banks are willing to maintain this rate or what kind of other scenarios can be expected.

The credit growth is closely connected with the overall economic growth. The economy still shows strong growth, but with a weakening tendency in 2008 (slower growth is also expected



in the coming years). The further trend in the economy will certainly be influenced by developments in the global economy. Numerous EU countries recorded a slowdown or stagnation, hence these trends will probably also appear in the Slovak economy and in the willingness of household to get into debt.

In the case of such development, changes can also be expected in the approach of domestic banks to household financing. A slowdown in economic growth or marked changes in the real estate market will force banks to tighten their credit standards, which will reduce the availability of loans.

The further growth in loans will also be influenced by developments in the residential

property market. The latest changes in this market indicate that prices in certain segments have reached their peaks, with regard to the financial possibilities of households. Such development, coupled with less intense economic growth, may lead to lower demand for loans in the household sector.

The current strong demand may also be influenced by the forthcoming entry of Slovakia into the euro area with effect from January 2009. Like before entry into the EU, households are afraid of a possible rise in real estate prices after entry into the euro area, which may cause a marked increase in demand for real estate property.

### **Box 2 Residential property prices and their impact on the stability of the banking sector<sup>2</sup> in the first half of 2008**

From the viewpoint of residential property price developments, the first half of 2008 can be divided into two phases: the first three months, when flat prices increased in all regional cities (for flats of all types), and the second quarter, when the opposite trend was recorded. These trends varied according to the size of the flat and its location.

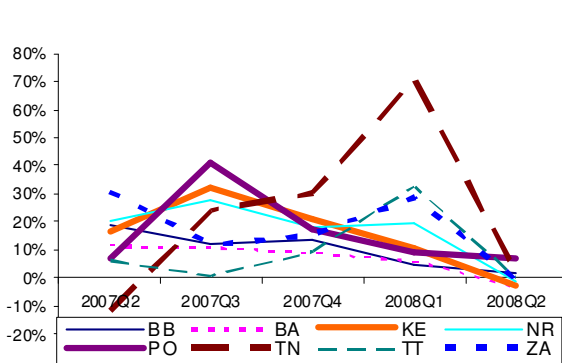
All types of flats recorded a relatively severe price shock between the first and second quarters of 2008. Prices for one-room flats recorded an average quarterly rise of 23% in all regional capitals; the second quarter saw an average price increase of only 0.29% compared with the first quarter. Prices for two-room flats recorded an average quarterly increase of 15% in the first quarter and 0.91% in the second quarter. Prices for three-room flats dropped in the second quarter by 2%, after rising in the first quarter by 19%.<sup>3</sup>

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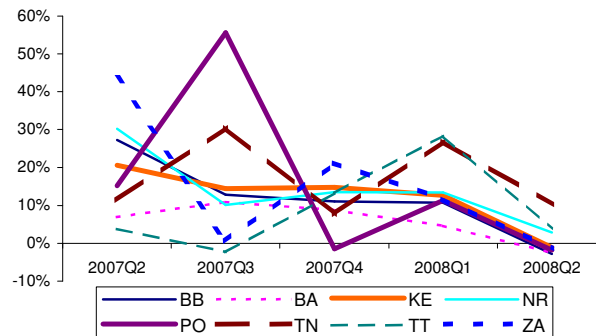
<sup>2</sup> The data were obtained from the Real Estate Price Map. The methodology, as well as the source of data, are other than in the case of data that are available on the web page of the NBS, under 'Macroeconomic Indicators'. There are certain differences between the two databases, due to differences in the methodologies used for the elimination of extreme values (principle  $\delta$  and principle 2  $\delta$ ) and the adjustment of the life cycles of records of flats offered for sale (current, and 2-3 times updated records) in these databases.

<sup>3</sup> In evaluating the price changes recorded in regional capitals, it is necessary to take into account the size of the specimen which was used for the calculation of these changes. The higher volatility of prices in Prešov, Trenčín, and Žilina since 2007 is due partly to the fact that the price changes in these cities were calculated from smaller price specimens. There were more advertisements in Košice, Nitra, Banská Bystrica, and Trnava. The largest market is in Bratislava, which greatly exceeds the markets of other cities in terms of the number of price offers. The smallest fluctuations in price changes were recorded in Bratislava.

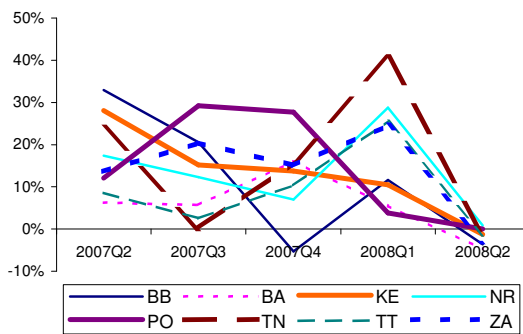
**Chart 30 Quarterly changes in prices for 1-room flats prices for 2-room flats**



**Chart 31 Quarterly changes in prices for 3-room flats**



**Chart 32 Quarterly changes in prices for 3-room flats**



- Source: Real Estate Price Map, NBS calculations.
- The left-hand axis gives the quarterly changes in percentages compared with the previous quarter.

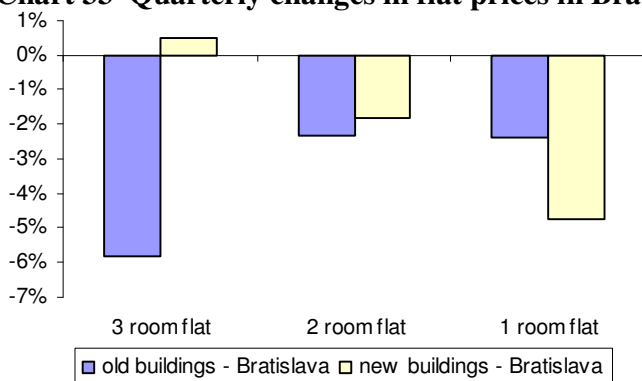
The second quarter of 2008 also saw price differences according to the age of the building concerned. A sufficiently large specimen of new buildings<sup>4</sup> and old buildings was available only for Bratislava, hence price fluctuations were monitored only in Bratislava. Prices for 3-room flats in old buildings dropped, while those for new flats continued to rise slowly. On the other hand, prices for one-room flats in Bratislava fell on a quarter-to-quarter basis.

The period of steep rise in real estate prices until the end of the first quarter of 2008 was replaced in the second quarter by a fall or minimal rise in these prices in all regions of Slovakia. It is rather difficult to analyse the fall or stagnation in real estate prices throughout Slovakia. Each region has certain specific features, on the side of supply or demand (e.g. new investments, etc.), which may influence the price fluctuations. There are also marked differences between the regions in terms of market transparency, i.e. the number of offers for sale or purchase.

On the other hand, there are certain common marks, which influence price developments throughout Slovakia. The rise in real estate prices was influenced first and foremost by the growth in real incomes in all regions. Incomes reached the highest level in the Bratislava region, where prices began to rise as first and in the largest measure. Subsequently, real incomes also increased in other regions of Slovakia.

<sup>4</sup> For the purposes of this analysis, buildings are classified according to the date of approbation as new (1995 to 2008) or old (before 1995).

**Chart 33 Quarterly changes in flat prices in Bratislava**



- Source: Real Estate Price Map, NBS calculations.
- The left-hand axis gives the changes in absolute prices (percentages) between the first and second quarters of 2008.

Domestic banks reacted to the improved financial position of households. They started to provide loans to households for real estate purchases in increased measure. Bank lending is a basic condition for the growth of the residential property market as a whole, since households can hardly cover the costs of real estate purchases from savings only. In line with the level of wages, most loans were provided in Bratislava. Since the beginning of 2007, the other regions had also seen increased lending for house purchases.

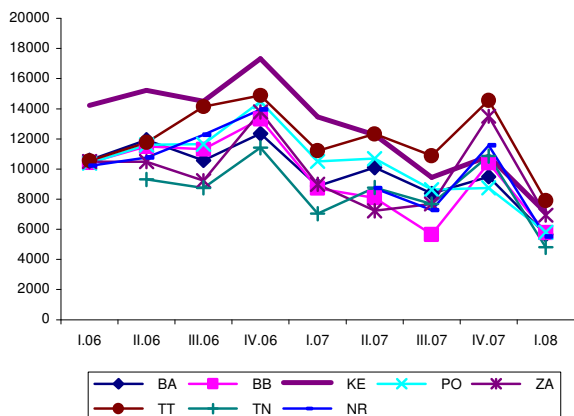
The rise in real estate prices should be in line with the financial situation of households and the availability of bank loans for real estate financing. If these variables are in harmony, the real estate market should maintain a balanced growth.

However, household incomes and real estate prices has been growing relatively unevenly in recent years. Real estate prices increased at a much faster pace than household incomes. In other words, real estate purchases from loans represented a growing burden on the incomes of households. For example, in the case of a three-room flat, the part of household income spent on loan instalments had markedly increased since 2006. Thus, households which have bought a three-room flat had a lower disposable income in the first quarter of 2008, compared with the previous quarter.

Steep increases in real estate prices were recorded in 2007 and in the first quarter of 2008, hence loan repayment burdens on households also increased. We assume that it was the growing loan repayment burden that dampened the growth of demand for real properties, causing a fall in property prices.

However, the supply of loans is still relatively high, though the primary braking mechanism in the case of such unbalanced development should be a change in the behaviour of banks. The increased loan repayment burden, coupled with reduced collateral requirements increases the credit risks of banks, which should motivate them to tighten their credit standards. However, banks loosened their standards still further (they reduced their collateral requirements). On the basis of these indicators, it is difficult to assess the overall risk to which banks are exposed. Each bank has a different loan portfolio and a different risk profile.

**Chart 34 Average wage, excluding loan instalment for a 3-room flat**



- Source: Real Estate Price Map, Statistical Office of the SR, NBS calculations.
- The left-hand axis gives the average wage of households in absolute terms (in SKK), excluding loan instalment payment for a 3-room flat.
- Loan instalment is calculated for the purchase of an average 3-room flat financed from a bank loan granted for 20 years with an 80% LTV at an average interest rate.

### Lending to other sectors

Other bank loans to customers accounted for approximately 13% of the total volume of loans provided (in June 2008).

They were dominated by loans provided to financial corporations (except banks). These are mostly leasing, factoring, and consumer credit companies. Banks often finance companies within their own financial groups. In several cases, financing was also provided to companies from other groups. The total volume of loans to financial corporations had fallen since the beginning of the year.

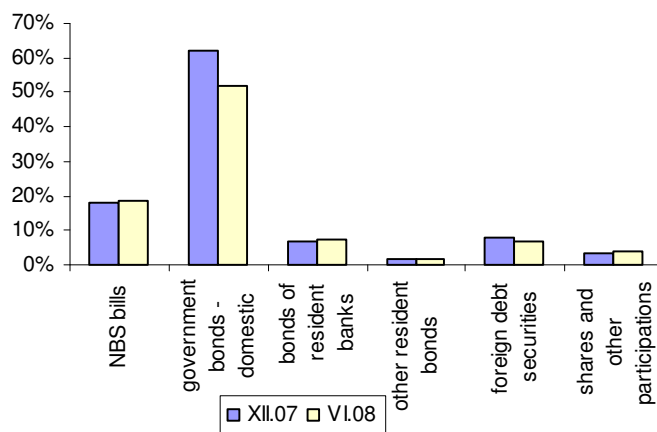
At the end of June 2008, loans to non-residents accounted for 4% of the total credit provided.

The volume of loans provided to the public sector since the beginning of the year fell by 11%. The volume of loans decreased in almost all banks.

### Securities

During the first half of 2008, investment in securities showed a declining tendency in the banking sector. The share of securities in total assets decreased (from 22% in December 2007 to 19% in June 2008), as well as their volume in absolute terms.

**Chart 35 Securities portfolios in the banking sector**



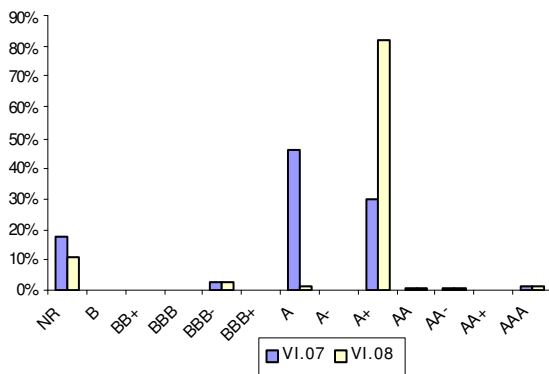
- Source: NBS.
- The vertical axis gives the percentages of securities by category of the total volume of securities.

The change in volume was followed by a change in the structure of the securities portfolios. The share of government bonds and foreign debt securities decreased. On the other hand, banks purchased bills of NBS.

Government bonds mainly decreased in large banks, due to the maturity of selected issues.

The improved rating of Slovakia<sup>5</sup> (from A to A+) was also reflected in the distribution of bonds by rating. The improved government bond rating (to A+) caused an improvement in the average rating of the debt securities portfolio.

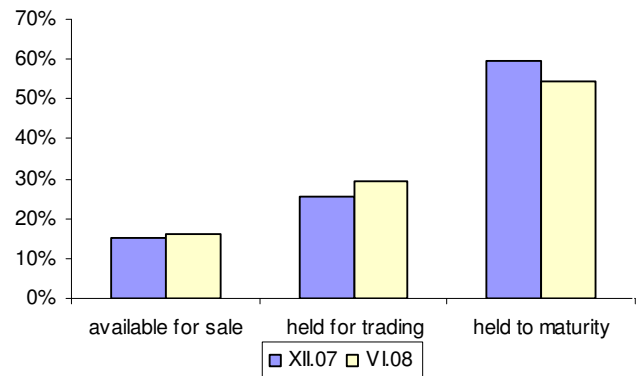
**Chart 36 Breakdown of debt securities by rating**



- Source: NBS.
- The vertical axis show ratings as a percentage of the total volume of debt securities.
- The ratings are expressed as equivalents to the ratings of Standard&Poor.
- NR – non-rated debt securities, mostly mortgage bonds issued by domestic banks.

Debt securities were mostly kept in the portfolio of securities held to maturity. Since the beginning of the year, the share of securities used for trading and sale has increased somewhat. The structure of the trading portfolio has changed: the share of risky foreign securities decreased and that of NBS bills increased.

**Chart 37 Breakdown of debt securities by portfolio**



- Source: NBS.
- The vertical axis show debt securities included in the portfolio for trading, sale, and held to maturity as a percentage of the total volume of debt securities.

Shares and equity participations form only a small part of total investments in securities. Their volume increased over the first half of 2008.

Most investments are held in the portfolio for sale. Banks invest in various types of funds and corporate shares.

<sup>5</sup> Fitch Ratings improved the country's rating to A+ (stable outlook) on 8 July 2008, the R&I rating agency to A (stable outlook) on 16 July 2008, and JCR to A+ (stable outlook) on 21 August 2008.

### **Box 3 Selected off-balance-sheet operations in the banking sector**

Off-balance sheet assets and liabilities followed similar trends as in the previous periods. Developments in fixed forward transactions were somewhat more volatile than last year. The total volume of off-balance-sheet assets reached SKK 3,098.3 billion, representing a year-on-year increase of 11 percentage points. After an identical increase, off-balance-sheet liabilities reached SKK 2,894.1 billion. Of total assets, they accounted for 180.1% and 168.2% respectively.

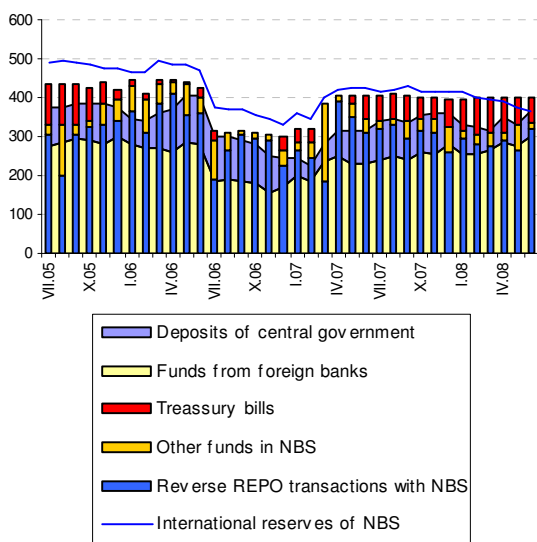
The largest component was still formed by transactions in derivatives: fixed forward transactions accounted for 46.4 % of the off-balance-sheet assets (49.7% of the liabilities), option transactions for 13.5 % (14.5 %). Derivative transactions were dominated by currency derivatives (62.%), which are purchased for the coverage of open balance-sheet positions in foreign currency or for currency risk coverage for customers. The second largest component was formed by interest rate derivatives (36.8%). The share of derivatives in total assets was rather volatile in the individual banks.

Off-balance-sheet components other than derivatives were dominated by accepted guarantees for liens, transfers of rights, and other forms of security in the amount of SKK 967.9 billion. Of this amount, guarantees accepted for real properties account for SKK 456.6 billion and securities from reversed repo transactions for SKK 329.4 billion. The annual increase in real estate guarantees (by 29.6%) is the result of strong demand for loans secured by real estate property, though their dynamics weakened somewhat in the first half of 2008, but their volume increased during that period by 13%.

## Interbank market

In the first half of 2008, as in the second half of 2007, the National Bank of Slovakia conducted no interventions in the foreign exchange market and made no changes in its base interest rates. Interest rate changes had not even been expected by the banking sector, hence these decisions had no impact on the level of interbank market rates. Rates with longer maturities rose considerably at the end of period, when they started to approach the level of euro-area interbank rates. During the period under review, the interbank assets and liabilities of the banking sector as a whole recorded similar developments as in the first half of 2007. Interbank assets were still dominated by transactions with the NBS. The amounts of funds invested in overnight sterilisation transactions, two-week reversed repo operations or in bills of NBS were mainly dependent on the level of liquidity in the sector and the level of minimum reserve requirements. Among interbank liabilities, the most significant component was non-resident bank deposits, the amount of which shows high correlation with the funds held at the NBS. These funds form a large part of the total assets in the branches of foreign banks in particular.

**Chart 38 Interbank assets/liabilities and central government deposits**



- Source: NBS.
- The data are in billions of SKK.
- Transactions between domestic banks are not included in the chart.

The interbank assets and liabilities of the banking sector as a whole recorded no substantial changes in comparison with the second half of 2007. From end-2007 to end-June 2008, the volume of interbank assets<sup>6</sup> increased by SKK 24.5 billion, to SKK 521.7 billion (from 30

<sup>6</sup> Interbank assets are the sum of receivables from the NBS, domestic and foreign banks, and bills of NBS.

June 2007 by SKK 27.5 billion), the volume of interbank liabilities<sup>7</sup> grew by SKK 29.7 billion, to SKK 339.5 billion (an increase of SKK 64.5 billion compared with 30 June 2007). The share of interbank assets on total assets increased from less than 30% to 30.3%, and that of interbank liabilities from 18.7% to 19.7%.

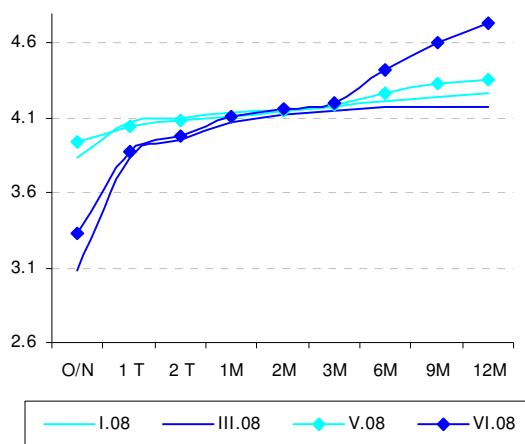
The largest share of interbank assets/liabilities on total assets was recorded in the branches of foreign banks

During the first half of 2008, the yield curve had a normal shape, which was a reflection of the fact that banks had expected no changes in the base rates of NBS for that period. Interest rates with shorter maturities were more volatile; they reacted to changes in the level of bank liquidity. In the middle of the year, steeper increases were observed in longer-term rates which were approaching the euro-area rates with longer maturities<sup>8</sup>, the differential between BRIBOR and EURIBOR rates with longer maturities (6, 9 and 12 months) was in the range of 0.38% to 0.47% in favour of the euro-area rates (at end-June).

<sup>7</sup> Interbank liabilities are the sum of deposits and loans received from the NBS, domestic and foreign commercial banks.

<sup>8</sup> Source: Monetary Survey, NBS.

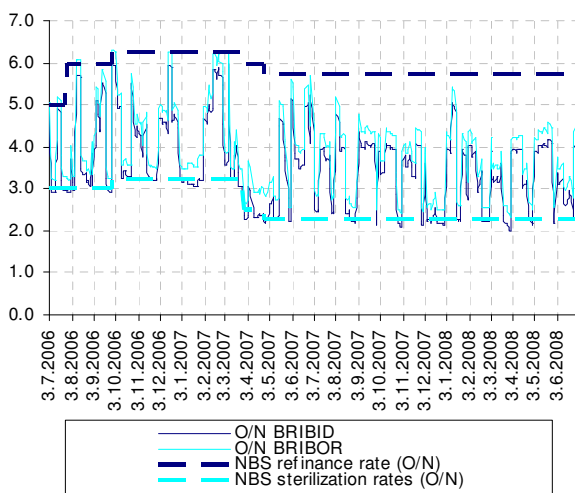
**Chart 39 Yield curves of BRIBOR rates**



- Source: NBS.
- The vertical axis express the average values in the given months (in percentages) calculated on the basis of daily data.
- O/N – overnight rate.
- Maturity: T – weeks, M – months.

Interbank assets were still dominated by transactions with the NBS; banks invested their free funds in overnight sterilisation transactions, two-week sterilisation repo operations, and bills of NBS with a maturity of three months.

**Chart 40 Developments in overnight interbank market rates**



- Source: NBS.
- The data are in percentages.
- O/N – overnight rate.

During the first half of 2008, the National Bank of Slovakia followed the standard procedure and accepted the bids in full at the regular repo tenders; NBS bill auctions were also held in January, February, April and May, where the bids were also accepted in full. The volumes of individual deals with the NBS were largely dependent on the level of liquidity in the market: in the first halves of the months, the free assets of banks were usually held on their minimum reserve accounts, then in the second halves, when banks had liquidity surpluses, the volume of overnight transactions increased. This fact was also reflected in BRIBOR rates with the shortest maturities, which were higher in the first halves of the months and then in the second halves, they fluctuated at the level of the overnight sterilisation rate.

Most transactions with the NBS over the period under review took place in reversed repo operations, in the total amount of SKK 320 billion (30 June 2008), i.e. 61.4% of the total volume of interbank assets. Overnight sterilisation transactions accounted for less than 3%, NBS bills for 13.1%.

The second largest component of interbank assets was loans and deposits in non-resident banks, which amounted to SKK 62.9 billion (at end-June 2008) and accounted for less than 12.1% of the total volume of interbank assets, representing an increase of 1 percentage point compared with 31 December 2007 and 5 percentage points compared with 30 June 2007.

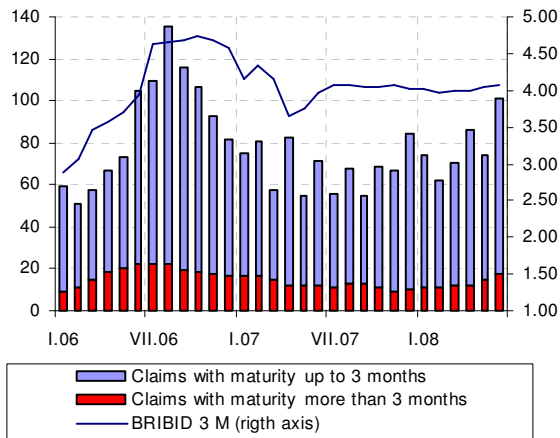
Deposits and loans to resident banks represented the third, smallest component of interbank assets, with a volume totalling SKK 37.9 billion on 30 June 2008, i.e. 7.3% of the total volume of interbank assets (82.1% at 31 December 2007 and 86.3% at 30 June 2007). In the long term, the largest component is formed by deposits and loans in SKK, accounting for 91.5% of the total volume of loans and deposits in resident banks (30 June 2008)

In terms of fixation, the domestic interbank market is still highly liquid: 82.81% of the total claims from resident and non-resident banks at



end-June 2008 were in short-term claims (up to 3 months).

**Chart 41 Loans provided and deposits in commercial banks**



- Source: NBS.
- Data on the left-hand axis are in SKK billions.

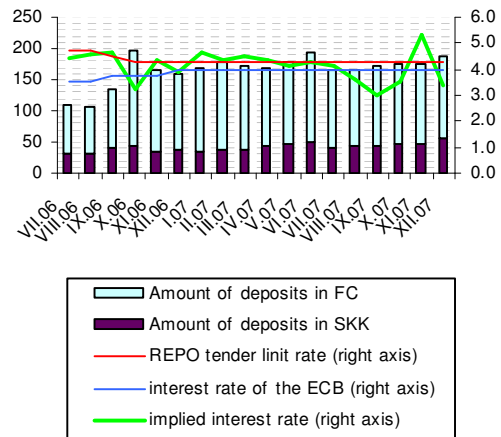
The largest item among interbank liabilities is formed by the deposits of non-resident banks, which amounted to SKK 299.6 billion at end-June 2008, representing 88% of the total volume of interbank liabilities. Of this amount, foreign-currency deposits accounted for 69.8%, which is slightly below the long-term average (75% to 80%). The volume of non-resident bank deposits shows a growing tendency in the long term, the total volume on 30 June 2008 was SKK 21.8 billion (7.8%) larger than at the end of 2007 and SKK 68.3 billion (29.6%) larger than on 30 June 2007. In the long term, the deposits of non-resident banks show high correlation with transactions with the NBS; the correlation ratio between the first differences was 0.63<sup>9</sup>. The high value indicates that banks utilise a large part of the deposits of non-resident banks in overnight sterilisation transactions and/or in reversed repo operations with the NBS.

The largest share of non-resident bank deposits in total assets was recorded in the

<sup>9</sup> The correlation ratio was calculated from monthly data for the period January 2004 to June 2008.

branches of foreign banks. The correlation ratio in the case of these banks is even higher (0.69).

**Chart 42 Non-resident bank deposits and the implied interest rate**



- Source: NBS.
- Data on the left-hand axis are in SKK billions.
- Data on the right-hand axis are in percentages.
- The implied interest rate was calculated as 12 times the ratio of interest expenses on non-resident bank deposits incurred in the given month to the average volume of these deposits in the given month calculated on a daily basis.
- Banks recording no expenses on non-resident bank deposits were not taken into account during the calculation of the implied interest rate.

The implied interest rate on non-resident deposits was rather volatile during the first half of 2008, its value fluctuated between 3% and 5.3%, and reached a maximum in May. Since the differential between the key ECB and NBS interest rates was at the level of 0.25% throughout the period, the fluctuations in the implied interest rate were probably not connected with the proportion of non-resident bank deposits in domestic and foreign currency to the total volume of non-resident bank deposits.

The deposits of resident banks followed a similar trend as loans, their volume was at the level of SKK 37.9 billion at end-June 2008, which represented 11.2% of the total volume of interbank liabilities (more than 90% are loans in SKK).

The smallest part of interbank liabilities was formed by funds from the NBS; their volume hovered around the level of SKK 2.4 billion during the first six months, which was less than 1% of the interbank liabilities. Refinancing repo transactions were not conducted during the period under review.

## Profitability

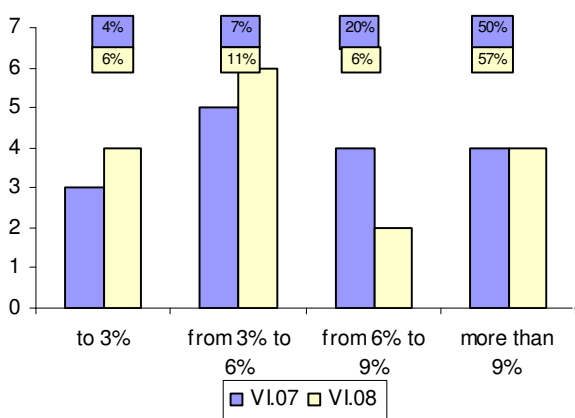
In terms of profitability, the first half of 2008 was a successful period for the financial sector. The net profits of banks increased by almost 10% on a year-on-year basis, and totalled SKK 10.5 billion. The absolute increase took place predominantly in large banks. The banks profited mostly from the strong growth in interest income over the first six months. Despite the reduced margins, huge profits were earned from the rapid growth in new loans.

Non-interest income also increased on a year-on-year basis. Income from charges and fees maintained a stable growth. In trading, banks achieved different results. Negative trends were mainly recorded in trading in debt and equity securities in certain banks.

The sector recorded increased expenses on provisions on a year-on-year basis. The quality of portfolios affected the level of profitability in some of the banks only.

Measured by the ratio of net profit to own funds, profitability fell on a year-on-year basis, from 10.2% to 9.4%. This was mainly due to an increase in the banks' own funds. The highest return on equity (ROE) in the sector was achieved by large banks (at end-June 2008).

**Chart 43 Distribution of ROE over the banking sector**



- Source: NBS.
- The vertical axis shows the number of banks in the given interval.

Positive developments were recorded in almost all the large banks. Due to their significant position in the loan market, they profited greatly from the strong growth in interest income. The growth in banking operations was accompanied by an increase in bank charges. This confirms that the most effective banks are the large ones.

The difference in effectiveness between large and small banks increased still further.

In medium-sized and small banks, both interest and non-interest incomes increased. Despite this, the growth in total income from banking operations lagged behind the growth in operating expenses in many of these banks. Thus, their relatively low efficiency fell still further. The profit ratios of building societies followed the trends from the previous years.

**Table 2 Year-on-year changes in the basic categories of expenses and revenues**

	June 2007	June 2008	Change
(a) Operating expenses	16.32	17.58	8 %
(b) Gross income (c + d)	28.26	32.77	16 %
(c) Net interest income	19.13	22.66	18 %
(d) Net non-interest income	9.13	10.11	11 %
(e) Net income (b - a)	11.94	15.19	27 %
(f) Net profit after tax	9.52	10.44	10 %

- Source: NBS.
- The data are in billions of SKK.

## Interest income

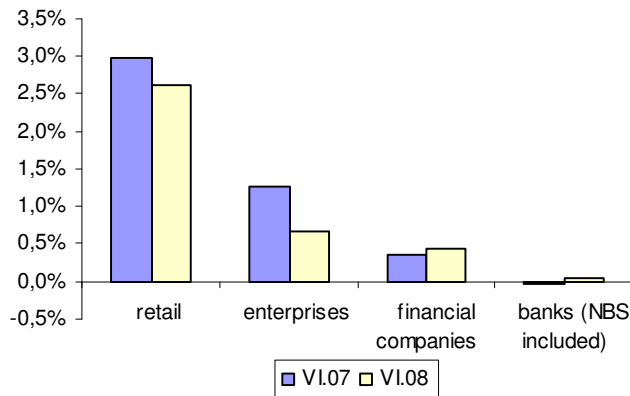
In June 2008, the most significant item in total gross income was still interest income, its significance remained virtually unchanged in comparison with the first half of 2007. Interest income traditionally forms a substantial part of income in building societies and banks focusing on retail customers. It represents a less important source of income for the branches of foreign banks.

The rate of growth in interest income slowed somewhat in comparison with the previous period (June 2008 saw a year-on-year growth of 18%). Interest income increased in almost all banks. Numerous banks managed to maintain or even increase the rate of growth from the previous years.

Interest income was influenced by several factors. Compared with June 2007, banks lowered their lending rates for households, which imposed pressure for a fall in interest income. In lending to corporations, a similar development was recorded at the beginning of 2008, which was followed by a gradual rise in interest levels. On the liabilities side, interest rates remained unchanged or rose slightly.

The fall in interest levels exerted pressure on the interest spreads of banks in the individual sectors. These decreased year-on-year in the household and corporate sectors, which form a substantial part of the total interest income. They increased somewhat in the case of non-bank financial corporations.

**Chart 44 Spread of interest rates on loans to customers**



- Source: NBS.
- Interest rate spread is defined as the difference between the ratio of income to assets and that of expenses to liabilities in the given sector.

With the pressure on interest margins continuing, the growth in interest income was mainly caused by the increased volume of loans

provided. Thus, interest income increased mostly in banks, which provided the largest volume of loans. This mainly applies to the household sector. The year-on-year increase in interest income in this sector took place mostly in the three largest banks. In the corporate sector, the share of individual banks in the outstanding amount of loans is more evenly distributed, which is also reflected in the more homogeneous interest income growth within the sector.

### Non-interest income

In the banking sector, non-interest income accounted for approximately 30% of the total gross income from banking operations. Compared with the banking sectors of other EU countries, this proportion is permanently smaller, which indicates that domestic banks are oriented to lending to customers.

The largest non-interest income component was income from fees and charges. This is mainly connected with deposit and other banking operations with customers.

A more volatile component was income from trading, since its development is determined by market factors. These had undergone marked changes, mainly since the second half of 2007. The sector as a whole had no significant open positions for trading. Thus, losses or profits in the sector were caused mainly by banks which had open positions towards various risk factors.

**Table 3 Trading income in the banking sector**

	June 2007	June 2008	Change
Total income from trading	4,094	3,609	-12 %
Income from debt securities	-334	-243	29 %
Income from equity securities	322	-318	-199 %
Income from FX transactions	2,519	8,033	219 %
Income from derivatives	1,594	-3,863	-342 %
of which: currency derivatives	444	-3,832	-963 %
interest rate derivatives	1,135	-109	-110 %

- Source: NBS.
- The data are in millions of SKK.

A decrease mainly occurred in income from equity securities, due to negative developments in the equity markets.

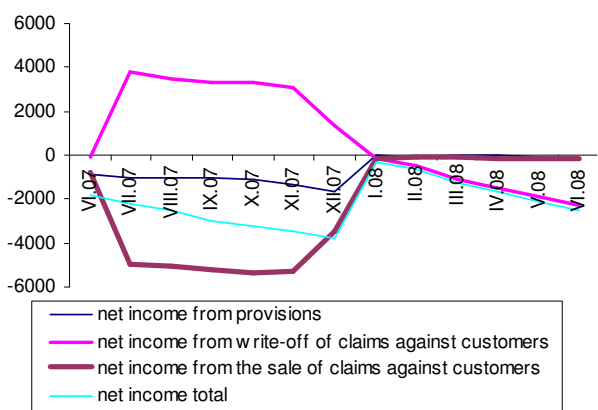
Losses from trading in securities decreased on a year-on-year basis in the banking sector. In the majority of banks, revenues from foreign exchange operations negatively correlated with revenues from currency and interest derivatives. Hence, their overall impact on the profitability of the banking sector was minimal.

### Income from provisions, write-offs, and the sale of receivables

The overall losses of banks from provisions, write-offs, and the sale of loans deepened year-on-year still further in June 2008. This was mainly due to the increased creation of provisions at banks since the beginning of 2008.

Since January 2008, banks have written off or sold receivables in minimal amounts only.

**Chart 45 Income from provisions, write-offs, and the sale of receivables**



- Source: NBS.
- The data are in millions of SKK.

The most significant increase occurred in the net amount of provisions. In June 2008, the amount of created provisions exceeded that of dissolved provisions by almost SKK 2.3 billion. The creation of provisions was concentrated in the three largest banks, where almost 80% of the net provisions were created. Despite an absolute increase in the amount of provisions, their share

in the sector's gross assets decreased on a year-on-year basis.

It is interesting to compare the amount of provisions created with that of gross income, i.e. interest and non-interest income. This indicator expresses the bank's ability to cover the costs of lower-quality assets from its current banking activity. Within the banking sector, this indicator fluctuated around 7%. An increased ratio of provisions to gross income was mainly recorded by banks with a relatively large amount of provisions (as measured by the ratio of provisions to assets).

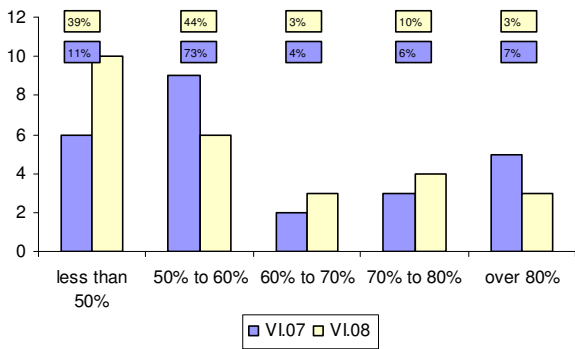
### Operating expenses

The rate of growth in operating expenses recorded a slowdown in the sector. Operating expenses grew at a slower rate mainly in large banks. The structure of expenses remained unchanged. They were mainly formed by expenses on employees and purchased outputs.

Operating efficiency, as measured by the ratio of operating costs to gross income, recorded a year-on-year increase (54% in June 2008 and 58% in June 2007). This was due to a marked increase in income from banking operations in comparison with the operating costs. This indicator was more favourable in large banks, which make use of the advantages of increased income at similar fixed costs. All large banks had a cost-to-income ratio within the range of up to 60%. On the other hand, medium- and small-sized banks belong to banks with a higher cost-to-income ratio.

Similarly, a year-on-year comparison shows that large banks had markedly reduced their operating costs and achieved a more significant increase in interest and non-interest incomes.

**Chart 46 Distribution of operating efficiency over the sector**



- Source: NBS.
- The vertical axis shows the number of banks in the given interval.

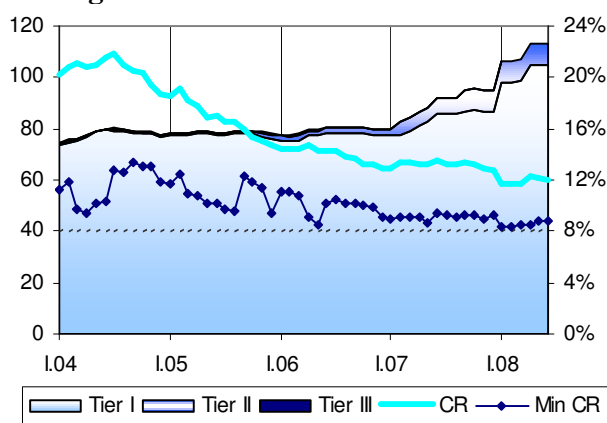
## Capital requirements

During the first half of 2008, banks continued to gradually increase their own funds, mainly from their retained profits from previous years. All banks recorded lower capital requirements in that period, compared with the actual levels of their own funds. Compared with December 2007, the capital requirements for credit, operational, and market risks remained virtually unchanged.

On the other hand, banks tend to reduce the ratio of own funds to risk-weighted assets in the long term. Regarding the actual situation in the financial markets and the results of stress testing, this may represent increased pressure on several institutions in the future, while the price of capital is on the increase and numerous parent financial groups are already exposed to such pressure.

The gradually increasing trend in the banks' own funds in the Slovak banking sector continued in the first half of 2008, the total amount of own funds in the sector increased in comparison with the end of 2007 by SKK 17.7 billion, to SKK 113.4 billion.

**Chart 47 Capital requirements in the banking sector**



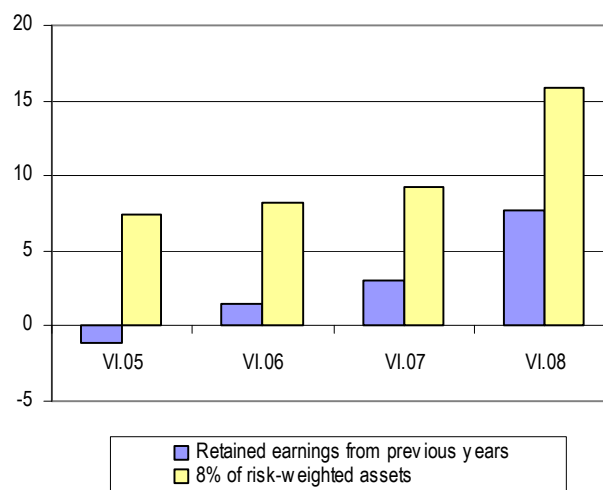
- Source: NBS.
- CR – average capital requirement (average weighted by the size of risk weighted assets).
- Min CR – minimum capital requirement.
- The left-hand vertical axis gives the amounts of Tier I, Tier II and Tier III capital in billions of SKK.
- The right-hand scale gives the average and minimum capital requirements.

The increase in own funds observed in 15 banks was mainly caused by an increase in retained profits from previous years, or in reserve funds and other funds created from profits, or a fall in accumulated losses. In these

banks, the increase took place in Tier 1 capital, the best-quality component of own funds. The growing coverage of the increased capital requirements in the banking sector from retained profits or accumulated losses is illustrated in Chart 48. The year-on-year increase in capital requirements in 2008 resulted from the adoption of the Basel II, mainly the introduction of the capital requirement for operational risks.

A fall in own funds in comparison with the end of 2007 was observed in two banks.

**Chart 48 Year-on-year changes in capital requirements and their coverage from retained earnings or accumulated losses from previous years**



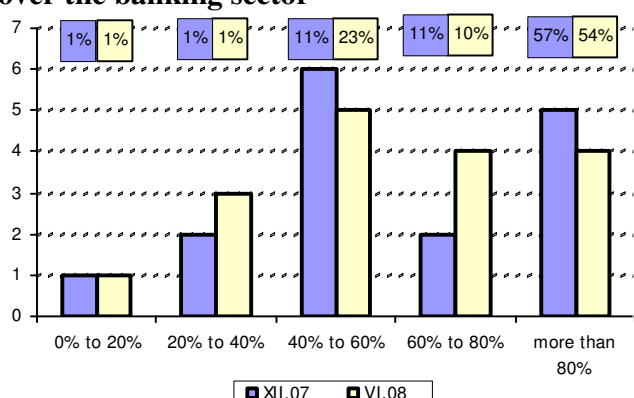
- Source: NBS.
- The capital requirement until the end of 2007 had been 8% of risk-weighted assets.

- For the sake of comparison with the previous periods, ČSOB, a.s. was not included in the data for 2008.
- The data in the chart show the year-on-year changes (in June in the given year).
- The increase in the capital requirement for 2008, compared with 2007, accounts for 37.5% of the profit recorded in the banking sector as at 31 December 2007.
- The increase in the capital requirement based on Basel II compared with Basel I as at 31 December 2007, as a percentage of the year-on-year increase in the ratio of 8% of risk-weighted assets, has reached 38.5% in 2008.
- The data are in billions of SKK.

Lower-quality capital in the form of subordinated debt as part of own funds was recorded by eight banks in June 2008, in the total amount of SKK 9.2 billion. Their share in the banking sector's own funds was 8.1%, while three banks recorded a fall in Tier 2 capital compared with the end of 2007 (a total of SKK 0.7 billion, with gradual repayment). This led to smaller growth in own funds.

In the first half of 2008, eleven banks recorded slower growth in own funds owing to an increase in the value of software; this increase, however, had an insignificant impact on the level of own funds.

**Chart 49 Distribution of capital requirements over the banking sector**



- Source: NBS.
- The vertical axis gives the number of banks.
- The percentages above the columns of this histogram express the share of bank assets in the given column to total assets in the sector.

At 30 June 2008, capital requirements<sup>10</sup> fluctuated above the level of 80% of the actual value of own funds in four banks<sup>11</sup>.

In June 2008, credit risk accounted for 86.1% of the capital requirements in the banking sector, operational and market risks for 9.7% and 2.7% respectively. Six banks recorded capital requirements for credit risk above 90% of the total capital requirement. Capital requirements for operational risks above 10% of the total capital requirement was also recorded by six banks.

**Table 4 Ratios of individual risks to the capital requirements**

	As at 30.6.2008**	As at 30.6.2008	Change
Credit risk *	86.4 %	86.1 %	- 0.3 p. b.
Operational risk	10.5 %	9.7 %	- 0.8 p. b.
Market risk	1.9 %	2.7 %	+ 0.8 p. b.

- Source: NBS.
- \* Credit risk also includes the risk of impairment in receivables (the risks associated with settlement, the counterparty, and asset exposure in the trading book are not included in the credit risk in the table, nor in the evaluation – hence the sum in the table is not equal to 100%).
- \*\* The figure for 31 December 2007 does not include ČSOB, a.s., which was, at that time, a branch of a foreign bank.

<sup>10</sup> Pursuant to Article 30 paragraph (5) of Act No. 483/2001 Z.z. on Banks as amended, banks are required to maintain own funds in an amount corresponding to at least the sum of capital requirements for the coverage of credit risk and dilution risk arising from the bank's activities recorded in the banking book, risks stemming from positions recorded in the trading book, the exchange rate risk and commodity risks resulting from the bank's activities recorded in the banking book and the trading book, and the operational risk stemming from the bank's trading activities.

<sup>11</sup> As at 30 June 2008, none of the banks in the Slovak banking sector had an approved internal model for capital requirement calculation in respect of credit risk; hence all banks calculated this requirement on the basis of a standardised approach. The operational risk is calculated in the same way as at the end of 2007, when 10 banks calculated the requirement in respect of this risk on the basis of a standardised approach and 7 banks on the basis of the basic indicator.



In the above table, we can see a relative decrease in capital requirements for credit and operational risks and an increase in the requirement for market risks as a percentage of the total capital requirement in June 2008. The decrease in the capital requirement for operational risks as a share of the total capital requirement was due to its recording on an annual basis, while, except for minor adjustments in individual banks, the requirement was not changed during the first half of 2008. The increased share of the capital requirement for market risks in the banking sector was mainly caused by an increase in capital requirements for interest rate and exchange rate risk (in terms of volume).

The capital requirement for credit risk in June 2008 was influenced mostly by exposures to the corporate (SKK 38.4 billion, an increase of 21% compared with December 2007) and retail sectors (SKK 10.6 billion, an increase of 17%), exposures secured by real estate property

(SKK 6.2 billion, an increase of 7%), and short-term exposures to institutions and corporates (SKK 3.4 billion, a decrease of 12%).

**Table 5 Ratios of major credit risk exposures to the capital requirement for credit risk**

	December 2007	June 2008	Change
Long-term exposures to institutions	4.0 %	4.1 %	+0.1 p. p.
Long-term exposures to corporates	55.8 %	58.8 %	+3.0 p. p.
Exposures to the retail sector	16.0 %	16.2 %	+0.2 p. p.
Exposures secured by real estate properties	10.2 %	9.4 %	-0.8 p. p.
Short-term exposures to institutions and corporates	6.7 %	5.1 %	-1.6 p. p.
Other items	3.8 %	3.5 %	-0.3 p.p.

- Source: NBS.

## 2. The insurance sector

*In the first half of 2008, the financial crisis was reflected in the rate of return on assets achieved by insurance companies, including assets covering Unit-linked products. The profitability of insurance companies, mainly the large ones, dropped in comparison with the first half of 2007 by 27%, mainly as a result of lower profits from financial operations. Technical premium written continued to grow at approximately the same rate as in the first half of 2007. Technical premium written in life insurance were, in line with expectations, higher than technical premium written in non-life insurance, due to their persistently stronger year-on-year growth compared with the growth of premiums in non-life insurance. Looking at the individual insurance sectors, the market concentration, and the loss ratios in non-life insurance, no significant changes occurred in comparison with the previous period. The only significant change was a slowdown in the sales of Unit-linked products. In the investment of technical provisions, the share of government bonds continued to decrease in favour of bank bonds, mainly mortgage bonds (in the previous period) and other banks bonds (in the first half of 2008). According to the reports submitted, all insurance companies met the solvency and minimum guarantee fund requirements (as at 30.6.2008).*

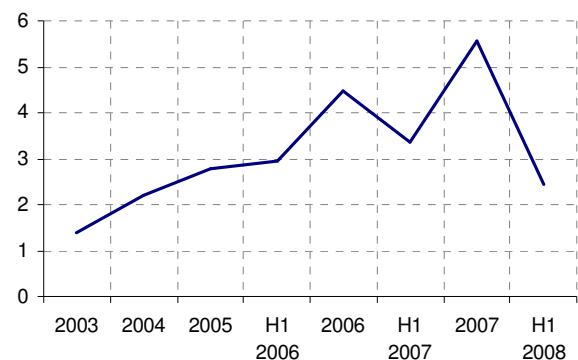
### Financial position of the sector

The improving trend in the financial position of insurance companies came to a halt in the first half of 2008. During that period, insurance companies achieved a total profit of SKK 2.4 billion, representing a decline of 27.1% compared with the same period a year earlier. The profit ratios also fell: ROE dropped from 11.23% in June 2007 to 7.72% in June 2008 and ROA from 2.14% to 1.46%.

Premium written increased in most insurance companies, but the total increase was somewhat smaller than in the first half of 2007. The fall in total profit was mainly the result of a sharp decline in profits from financial operations in comparison with the first half of 2007 (by more than SKK 2 billion). On the other hand, profits on the technical account increased by 48.9%, to SKK 1.7 billion.

Half of the insurance companies recorded poorer financial results than in the first half of 2007, the other half achieved better results. Deterioration was reported by large insurance companies (holding roughly 80% of the total assets and premium written), while small companies experienced an improvement. The number of loss-making insurance companies increased from four to seven.

**Chart 50 Total profit in the insurance sector**

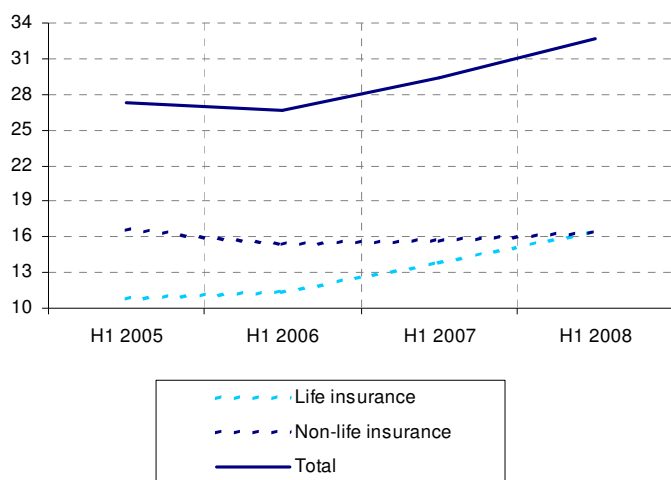


- Source: NBS.
- Net profit for the calendar year.
- The data are in billions of SKK.

### Premium written and technical premium written

Premium written in the first half of 2008 totalled SKK 30.6 billion, which was 4.1% more than in the same period a year earlier. Premium written in life insurance accounted for SKK 14.2 billion and those in non-life insurance for SKK 16.3 billion.

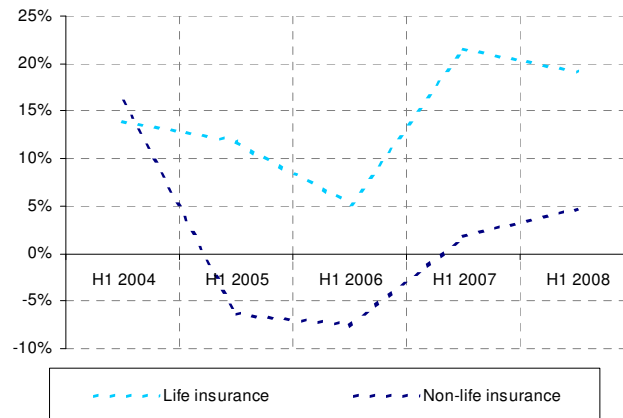
**Chart 51 Technical premium written**



- Source: NBS.
- The data are in billions of SKK.

Since part of the insurance contract portfolio is not in line with the definition of an insurance contract according to the international accounting standards (IAS/IFRS), premium written from such contracts are not included in the 'premium written' item. For that reason, the NBS has introduced the term 'technical premium written', which can be defined as the price agreed in an insurance contract irrespective of the method of its recording from the financial point of view. The difference between premium written and technical premium is covered by investment contracts.

**Chart 52 Growth dynamics of technical premium written in life and non-life insurance**



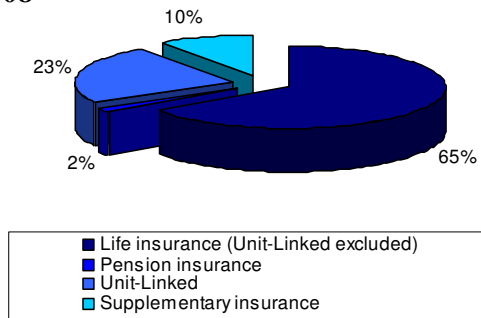
- Source: NBS.

In the first half of 2008, technical premium written reached SKK 32.7 billion; SKK 16.4 billion in life insurance and SKK 16.3 in non-life insurance. In line with expectations, technical premium written in life-insurance reached a higher level than in non-life insurance, for the first time.

Technical premium written in life insurance followed the rapidly growing trend from the previous period. They increased year-on-year by 19.1%, representing a certain slowdown in the rate of growth compared with the first half of 2007 (by 2.5 percentage points). On the other hand, the rate of growth in technical premium written in non-life insurance accelerated, from 1.8% to 4.7%. In total, technical premium written increased by 11.5%.

## Insurance groups

**Chart 53 Breakdown of life insurance by the amount of technical premiums as at 30 June 2008**



- Source: NBS.

Compared with the first half of 2007, there were no significant changes in the life insurance market, in terms of the structure of life insurance by the amount of technical premium written.

Traditionally, most technical premium written are collected in life insurance excluding Unit-linked products (i.e. life insurance related to investment funds), which includes assurance on death, assurance

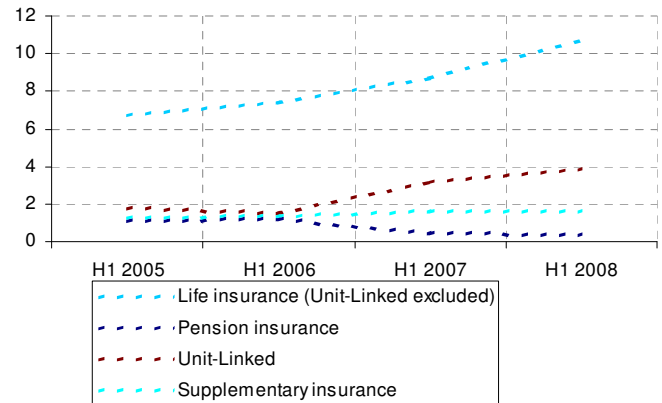
on survival to a stipulated age, combinations of assurance on death and assurance on survival to a stipulated age, and various endowment policies., etc. Technical premium written in this segment reached SKK 10.7 billion (30 June 2008), representing an increase of 23.2% (the largest among the life insurance segments). As a result of this growth, the share of the given segment in the amount of technical premium written in life insurance increased in comparison with the previous period, from 63% to 65%.

The share of the second largest segment, i.e. Unit-linked insurance, reached 23%, the same figure as in the first half of 2007. However, the rate of growth in technical premium written slowed in this segment, from 110% on 30 June 2007 to 20% on 30 June 2008.

The smallest amount of technical premium written was recorded in pension insurance. Pension insurance was the only segment to

record a fall in technical premium written (by 23%), to 2% of the total amount of technical premium written in life insurance.

**Chart 54 Technical premium written in life insurance**

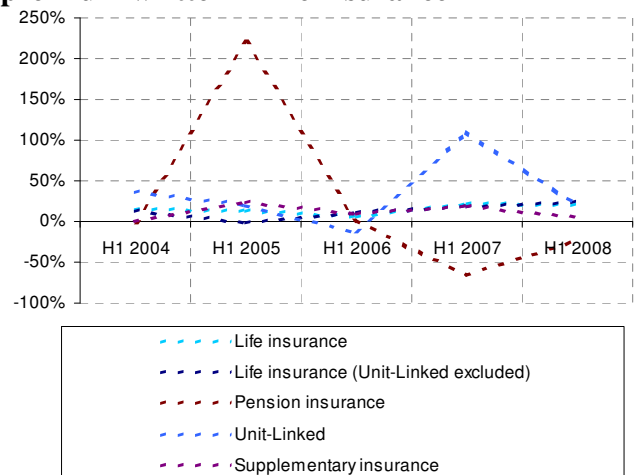


- Source: NBS.

- The data are in billions of SKK.

Compared with the first half of 2007, technical premium written in non-life insurance increased by SKK 738 million, to SKK 16.3 billion. All the significant non-life insurance segments recorded an increase in technical premium written compared with the previous period.

**Chart 55 Growth dynamics of technical premium written in life insurance**

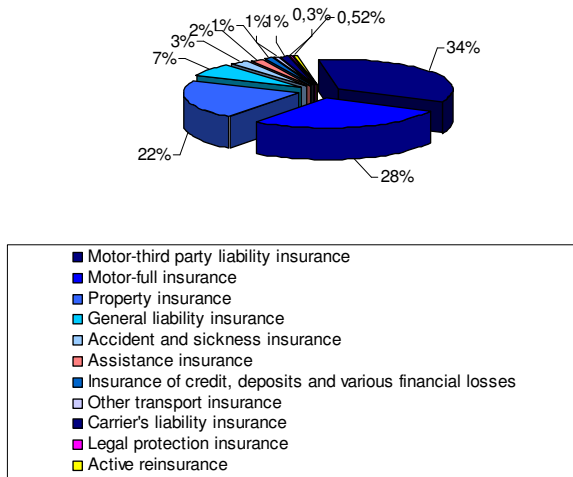


- Source: NBS.

Technical premium written in compulsory third party liability insurance increased, for the first time since 2005. This segment recorded an increase of 1.6%, and reached SKK 5.6 billion. Despite this, the share of this segment in the amount of technical premium written in non-life insurance decreased somewhat (to 35%, from 36% in June 2007), because the other segments grew more rapidly. Accident insurance expanded by 4.3%, but its share in technical premiums decreased slightly, from 29% to 28%. Motor insurance, along with compulsory third party liability insurance, still has a dominant share in the amount of technical premium written collected in non-life insurance (63%).

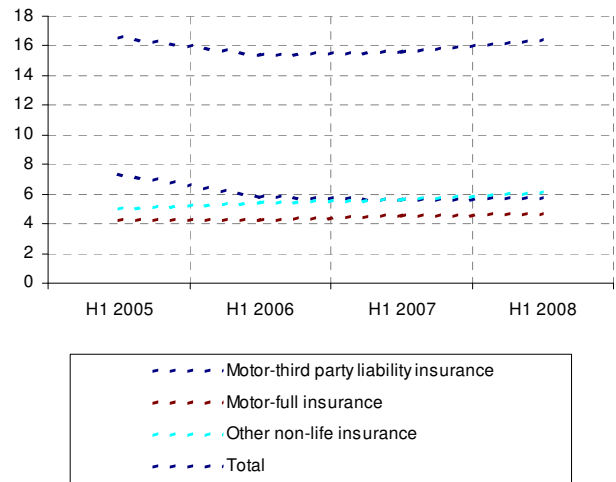
In segments other than motor insurance, technical premium written increased by 8.2%.

**Chart 56 Breakdown of non-life insurance by the amount of technical premium written as at 30 June 2008**



- Source: NBS.

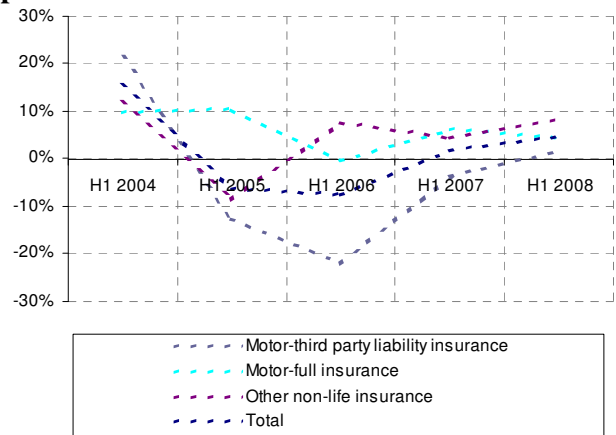
**Chart 57 Technical premium written in non-life insurance**



- Source: NBS.

- The data are in billions of SKK.

**Chart 58 Growth dynamics of technical premium written in non-life insurance**



- Source: NBS.

## Reinsurance

During the first half of 2008, technical premium written were ceded to reinsurance companies in the amount of SKK 4.2 billion, which was 13.4% less than in the same period in 2007. Thus, premium written ceded to reinsurers as a percentage of the total amount of technical premiums decreased to 13% (from 16.7% in the first half of 2007).

In non-life insurance, 24% of the technical premium written were ceded, compared with 1.9% in life insurance (SKK 317 million). Non-

life insurance accounted for 92.5% of the total amount of ceded premium written.

**Table 6 Technical premium written ceded to reinsurers**

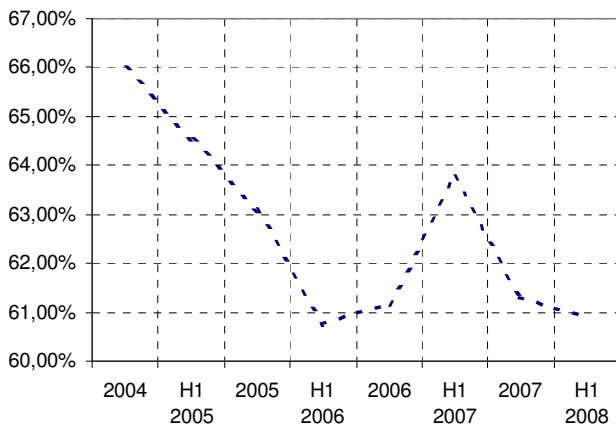
	H1 2008	H1 2007	Change	Share of technical premium written
Total	4.2	4.9	-13.4 %	13.0 %
Life insurance	0.3	0.6	-47.1 %	1.9 %
Non-life insurance	3.9	4.3	-8.7 %	24.0 %

- Source: NBS.
- The data are in billions of SKK.

### Market concentration

After an increase in market concentration in the first half of 2007, the share of the three largest insurance companies in the total amount of technical premium written decreased from 64% to 61%, and approached the figure for the first half of 2006.

**Chart 59 Market share of the three leading insurance companies**



- Source: NBS.

The year-on-year decline in market concentration is mainly due to a fall in market concentration in life insurance. The share of the three largest life insurers companies decreased by 4 percentage points. In non-life insurance, where there is a greater market concentration traditionally, the share of the three largest

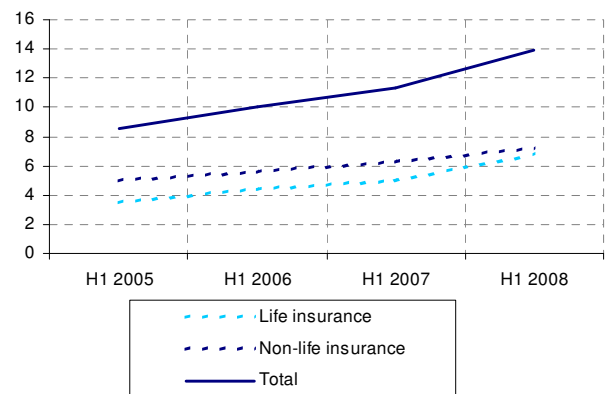
insurance companies in the amount of technical premium written decreased by only 1.3 percentage points.

### Claims incurred

Claims incurred during the first half of 2008 reached SKK 14 billion. Of this amount, life insurance claims accounted for SKK 6.8 billion and non-life insurance claims for SKK 7.2 billion.

Like in the case of technical premium written, the NBS introduced the term 'technical claims incurred' for the needs of this report (hereinafter the term „claims incurred“ shall imply „technical claims incurred“). In the first half of 2008, claims incurred increased in comparison with the same period a year earlier, in both life and non-life insurance. In life insurance, claims incurred grew more rapidly (by 35.4%) than in non-life insurance (by 14.3 %), which was in line with the trend observed since 1999. The rate of growth in claims incurred accelerated in comparison with the first quarter of 2007 by 11.8 percentage points, to 23.6%.

**Chart 60 Claims incurred**

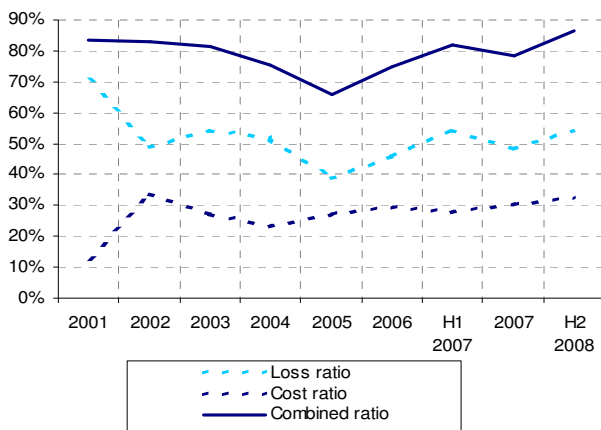


- Source: NBS.
- The data are in billions of SKK.

In analysing claims incurred in non-life insurance, it is also necessary to take into account the amount of earned premiums, i.e. technical premium written adjusted for changes

in reserves for deferred premiums and net claims technical provisions, which is enabled by the loss ratio calculated as a percentage of the sum of claims incurred not reduced by the share of the reinsurer and changes in net claims technical provision in the amount of earned premiums.

**Chart 61 Loss ratio, cost ratio, combined ratio**



- Source: NBS.

**Table 7 Loss ratio, cost ratio, and combined ratio in non-life insurance in June 2008**

	Loss ratio	Cost ratio	Combined ratio
Life insurance – supplementary insurance	23.92 %	27.22 %	51.14 %
Accident and sickness insurance	14.20 %	42.85 %	57.05 %
Motor third party liability insurance	48.66 %	30.25 %	78.91 %
Motor insurance	68.82 %	30.50 %	99.32 %
Other motor insurance	19.23 %	28.08 %	47.31 %
Transport liability insurance	38.81 %	30.39 %	69.20 %
Property insurance	60.68 %	32.33 %	93.01 %
General liability insurance	23.43 %	34.51 %	57.93 %
Insurance for credits, deposits, and various financial losses	71.69 %	40.82 %	112.51 %
Legal protection insurance	20.56 %	62.65 %	83.21 %
Assistance insurance	26.03 %	57.70 %	83.74 %
Active reinsurance	95.19 %	21.52 %	116.72 %
Total	54.36 %	32.17 %	86.53 %

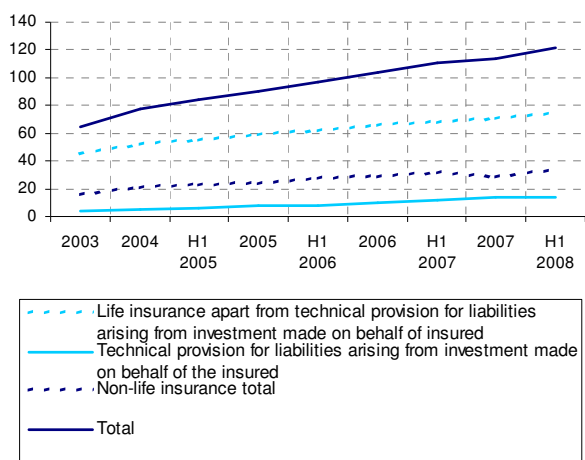
- Source: NBS.

The overall loss ratio in non-life insurance reached 54.4% in the first half of 2008 (a fall of 0.2 of a percentage point compared with the previous period). Marked changes in the loss ratios were not recorded, even in the largest non-life insurance segments. The lower claims incurred, coupled with increased or only slightly decreased premium earned, represented a fall in the loss ratio in compulsory third party liability and property insurance, by 2.3 and 2.2 percentage points respectively. Due to growth in claims incurred accompanied by a modest fall in earned premium, the loss ratio in motor insurance rose by 2.7 percentage points. The combined ratio approached the 100% level, which indicates that there is strong competition in this insurance segment.

### Technical provisions and their investment

Gross technical provisions (excluding the reinsurer's share in technical provisions) reached SKK 121.5 billion on 30 June 2008, representing a year-on-year increase of 10.1%. In life insurance, gross provisions increased by 10.9%, to SKK 87.9 billion. Gross provisions in non-life insurance recorded an 8% increase, which means that technical provisions in life insurance as a percentage to total provisions increased slightly in comparison with June 2007, to 72.4%.

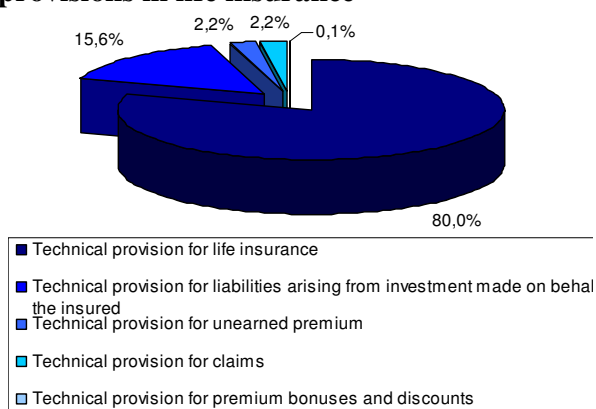
**Chart 62 Gross technical provisions**



- Source: NBS.
- The data are in billions of SKK.

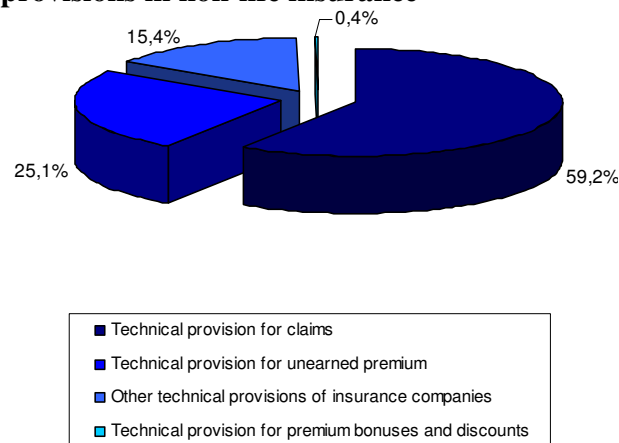
In life insurance, marked increases were recorded in technical provision for claims (21.6%) and technical provision for the coverage of liabilities arising from investments made on behalf of the insured (19.9%). The level of provisions for such investment liabilities mirrors the developments in technical premium written in Unit-linked products. Technical provision for life insurance stood at SKK 70.4 billion (an increase of 9.3%), which represents a 80% share of the total technical provisions in life insurance (compared with 81.2% at 30 June 2007).

**Chart 63 Structure of gross technical provisions in life insurance**



- Source: NBS.

**Chart 64 Structure of gross technical provisions in non-life insurance**



- Source: NBS.

Technical provisions in non-life insurance increased in comparison with the first half of 2007 by SKK 2.5 billion. The largest increase (SKK 1.8 billion) took place in other technical provisions. This increase, together with the increase in unearned premium (SKK 0.8 billion), contributed significantly to the total increase in provisions in non-life insurance.

Gross technical provisions, reduced by provisions for the coverage of liabilities arising from investments made on behalf of the insured<sup>12</sup>, totalled SKK 107.8 billion at 31 December 2007. Their coverage by assets had increased since the end of 2007 to 109.3%. The decreasing trend in the share of investments in government bonds<sup>13</sup> from last year continued in the period under review. After purchasing mostly mortgage bonds from domestic banks in 2007, insurance companies tended to invest in other bank bonds in the first half of 2008. Thus,

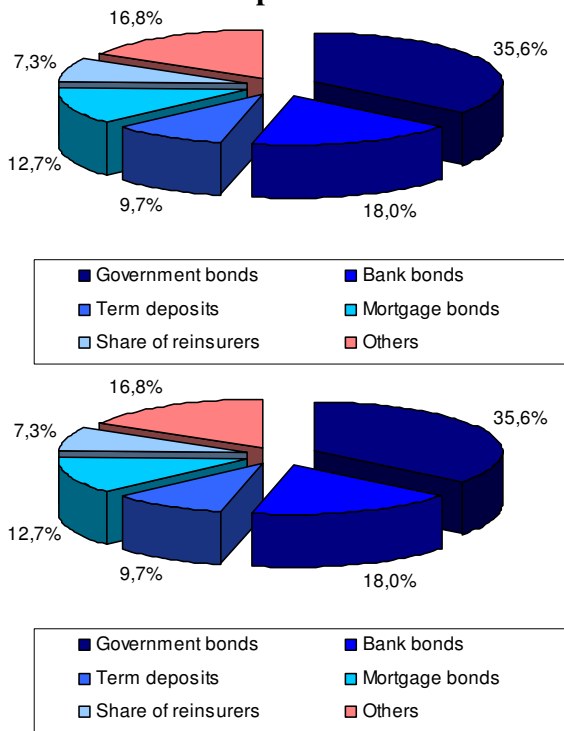
<sup>12</sup> The economic risk involved in investment in Unit-Linked insurance is borne by the insured; the investment of technical provisions is therefore monitored with the Unit-Linked provisions excluded.

<sup>13</sup> The term 'government bonds' covers bonds issued by the SR and other EU member states, NBS and other central banks, guaranteed by the SR, EIB bonds, EBOR and MBOR.



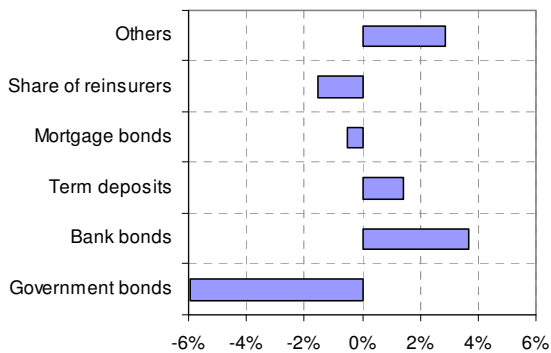
their exposures to foreign financial sectors increased. In contrast with the previous period, the proportion of funds invested in fixed-term deposits increased.

**Chart 65 Technical provisions investment**



- Source: NBS.
- The term 'government bonds' covers bonds issued by the SR and other EU member states, NBS and other central banks, bonds guaranteed by the SR, EIB, EBOR and MBOR bonds.

**Chart 66 Changes in technical provisions investment between 31/12/2006 and 31/12/2007**



- Source: NBS.

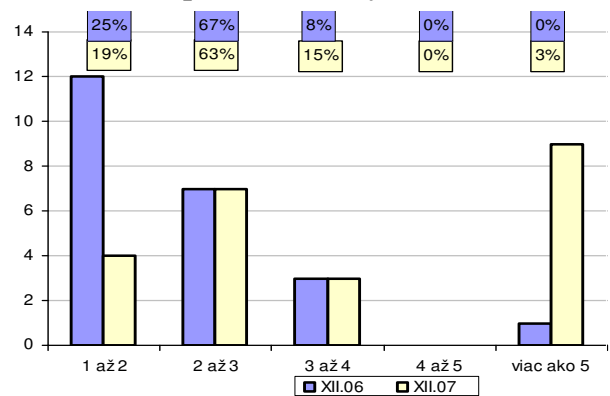
## Solvency of insurance companies

Insurance companies are obliged to report their solvency ratios to the National Bank of Slovakia once a year, at the end of December. Hence, solvency was assessed on the basis of data audited for the year ending 31 December 2007. Insurance companies are required to maintain a solvency ratio no lower than the required ratio of solvency and a guarantee fund no smaller than the required minimum guarantee fund.

In their reports for 2007, all insurance companies claimed to have satisfied both conditions. The guarantee funds of most insurance companies were at the level of the required minimum guarantee fund; four insurance companies reported guarantee funds above the required level. This condition was met in both life and non-life insurance.

The proportion between the actual and required solvency ratios was 2.7 in the insurance sector as a whole (2.8 in non-life insurance and 2.6 in life insurance). Compared with 2006, this proportion increased by 0.2, as a result of an increase in own funds from profits achieved in 2006.

**Chart 67 Distribution of the ratio between actual and required solvency**



- Source: NBS.
- The percentages above the columns of this histogram express the premium written by insurance companies in the given column as a percentage of the total premium written in the insurance sector.

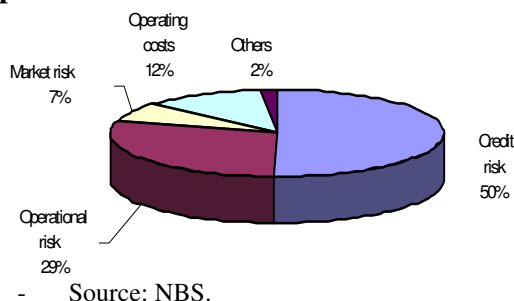
### 3. Securities dealers

The volume of trading in securities on behalf of customers, via securities dealers, increased significantly over the first half of 2008. This volume was 8.5 times greater than the figure for the first half of 2007, and reached SKK 7,618 billion. The most significant increases occurred in deals in derivatives and money market instruments. The volume of assets managed for customers by companies licensed as securities dealers increased year-on-year by 39%, to SKK 57 billion. These companies had met the prescribed capital requirements with a sufficient margin.

#### Capital requirements

During the first half of 2008, the own funds of non-bank securities dealers and asset management companies licensed as securities dealers fluctuated well above the level required by law. On average, the amount of own funds was 4.3 times greater; the highest capital requirements were imposed on credit and operational risk coverage.

**Chart 68 Structure of average capital requirements for securities dealers by the type of risk**



#### Investment services and asset management

During the first half of 2008, trading in securities increased to a significant extent. The total volume of customer transactions within the scope of investment services (IS-1 to IS-3<sup>14</sup>)

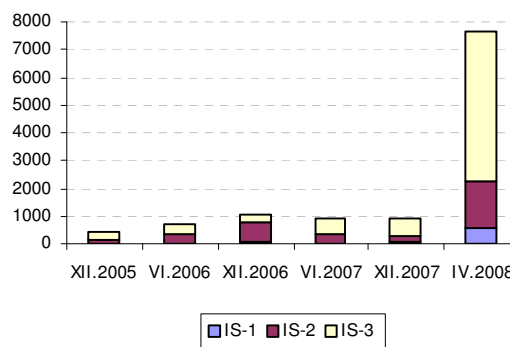
<sup>14</sup> IS-1= investment service pursuant to Article 6 paragraph 2(a) of the Securities Act, i.e. the acceptance of an instruction from a customer to acquire, sell, or otherwise handle investment instruments, and the subsequent transfer of this instruction for execution.

IS-2 = investment service pursuant to Article 6 paragraph 2(b) of the Securities Act, i.e. the acceptance

was 8.5 times greater in that period than the volume traded over the first half of 2007, and reached SKK 7,618 billion. These transactions took place almost exclusively through four companies.

Although the share of transactions concluded for the investment service provider's account (within IS-3) increased year-on-year from 58% (H1, 2007) to 71% (H1, 2008), the share of transactions for the customer's account (within IS-2) decreased from 40% to 22%.

**Chart 69 Volume and structure of customer transactions by the type of investment service**



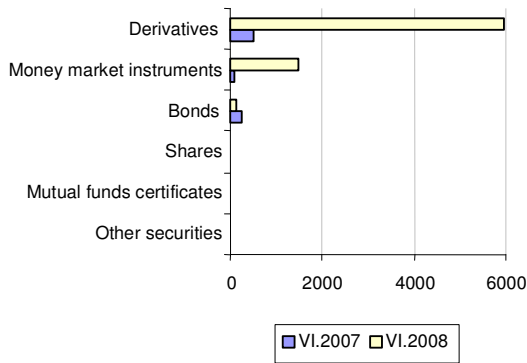
Source: NBS.  
Data on the vertical axis are in billions of SKK.

of an instruction from a customer to acquire or sell an investment instrument and its execution for an account other than that of the service-provider.

IS-3 = investment service pursuant to Article 6 paragraph 2(b) of the Securities Act, i.e. the acceptance of an instruction from a customer to acquire or sell an investment instrument and its execution for own account.

The sharp increase in trading took place almost exclusively in derivatives and money market instruments, due probably to the forthcoming entry of Slovakia into the euro area.

**Chart 70 Structure of transactions by the type of investment instrument**



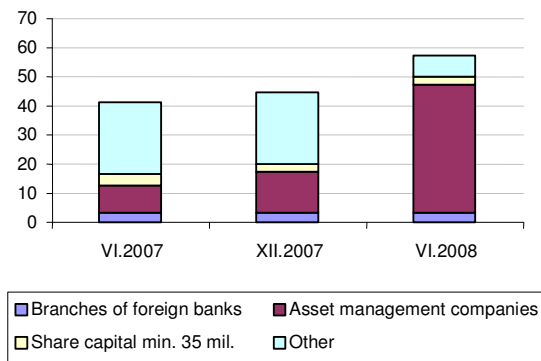
- Source: NBS.
- Data on the horizontal axis are in SKK billions.

In the first half of 2007, the volume in transactions in financial derivatives and money market instruments reached SKK 619 billion (69% of all transactions); their volume increased to SKK 7,466 billion in the same period in 2008 (98% of all transactions). During that period, the volume of deals in other

instruments (bonds, shares, participation certificates) fell by almost 50%, from SKK 280 billion to SKK 154 billion.

The volume of assets managed for customers by securities dealers (including banks and asset management companies licensed to deal in securities) increased year-on-year by 39% (from SKK 41 billion to SKK 57 billion).

**Chart 71 Structure of assets managed by securities dealers for customers**



- Source: NBS.
- Data on the vertical axis are in billions of SKK.

## 4. Collective investment

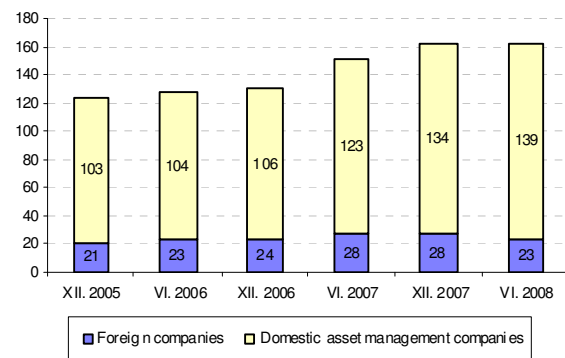
The volume of assets managed in the collective investment sector in Slovakia was stagnant over the first half of 2008, when an inflow of new investments into domestic funds was offset by an outflow of assets from the funds of foreign asset management companies. Domestic money market funds profited from the atmosphere of uncertainty dominating the financial markets and recorded a marked increase in assets. Except for money market mutual funds, all types of funds suffered a sharp decline in returns. On a year-on-year basis, investments depreciated most significantly in equity funds and the funds of funds.

### Assets in open-end mutual funds

The total net asset value held in domestic mutual funds increased over the first half of 2008 by SKK 4.9 billion, to SKK 138.7 billion. On the other hand, the value of assets managed by foreign collective investment companies for sale in Slovakia fell over the same period by SKK 5.2 billion, to SKK 23 billion. Thus, the size of the Slovak collective investment sector expressed in terms of the net asset value diminished, but to a minimum extent only. The proportion of domestic investments in foreign mutual funds to total net assets in collective investment reached 14% at the end of June 2008, which was 3 percentage points less than at the end of the previous year.

At the end of June 2008, ten domestic asset management companies offered investment in 79 open-end, 5 special, and 41 closed-end mutual funds. In the long run, investment in closed-end funds is offered by one company only. In terms of the amount of assets under management, the degree of concentration in the domestic collective investment sector is high. The three biggest companies belonging to large banks control 88% of the market. One of them alone has a share of 44%. Despite this, the degree of concentration (measured by the share of the three biggest asset management companies or by the Herfindahl index) increased still further during the first half of 2008.

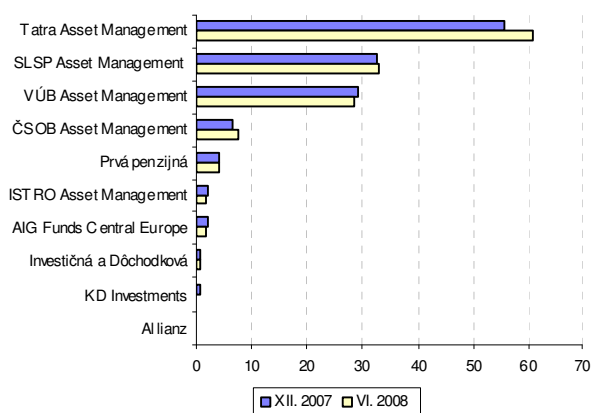
**Chart 72 Amounts invested in mutual funds sold in Slovakia**



- Source: NBS.
- Data on the vertical axis are in billions of SKK.
- As of 2006, both closed-end and special funds are included in these figures.

In the first half of 2008, money market mutual funds strengthened their position by 6 percentage points, with their market share reaching 48% at the end of the period. Bond funds, equity funds, mixed funds, the funds of funds, and other funds (mostly hedge funds) accounted for 8% to 12%. Except in equity and other funds, foreign collective investment companies had a minority share in the assets under management.

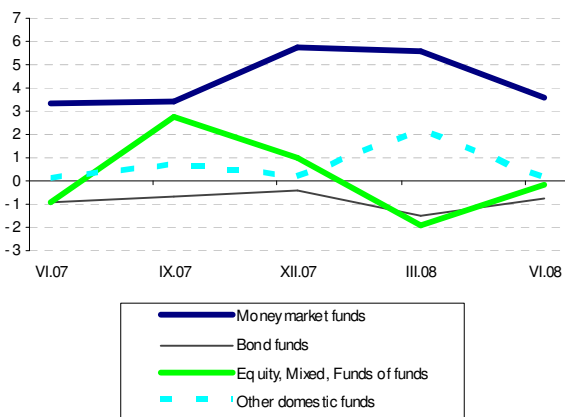
**Chart 73 The asset value in the individual types of funds (June 2008)**



- Source: NBS.
- Data on the horizontal axis are in billions of SKK.

The dominant owners of stakes in domestic collective investment funds are resident households. Despite a certain decrease in the first half of 2008, they still have a share of 85%. The share of non-residents increased from 1.3% to 2.0%.

**Chart 74 Monthly net sales of open-end mutual funds in Slovakia**

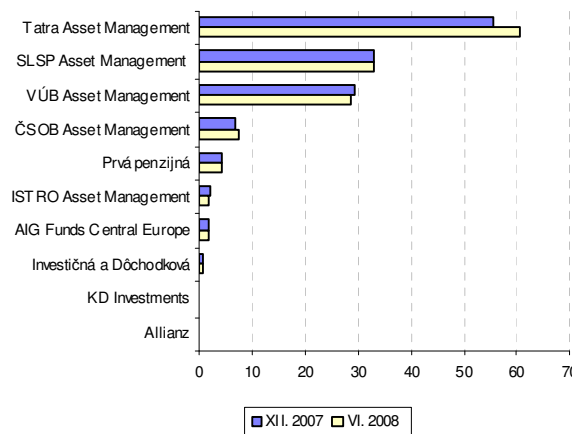


- Source: NBS.
- Data on the vertical axis are in billions of SKK.

In the first half of 2008, the inflow of new investments into mutual funds continued, but at a slower pace than in 2007. Investors purchased mostly stakes in domestic funds, the net sales of which reached SKK 8.1 billion. The net sales of

foreign mutual funds were negative (SKK-0.9 billion). The increase in newly issued shares/units took place predominantly in money market mutual funds, which profited from their conservative and secure character during the turmoil in the financial markets. For similar reasons, investors placed SKK 2.2 billion in secured mutual funds. Most redemptions took place in bond funds and the funds of funds, in the amount of SKK 2.2 billion in both types of funds.

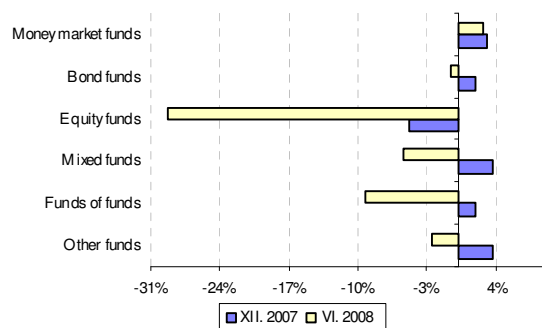
**Chart 75 Net asset value of mutual funds managed by domestic asset management companies**



- Source: NBS.
- Data on the horizontal axis are in billions of SKK.

### Performance of domestic open-end mutual funds

**Chart 76 Average annual returns of open-end mutual funds broken down by category**



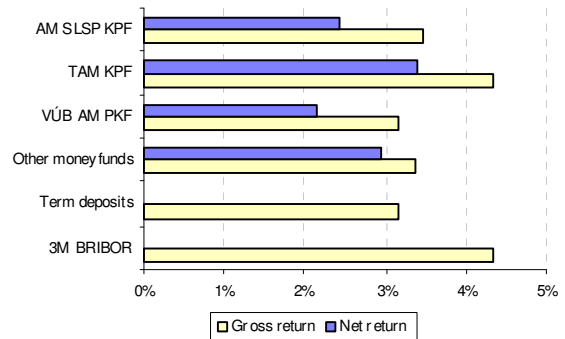
- Source: NBS.
- Data on the horizontal axis are in % per annum.
- The funds are weighted by net asset value.

The unfavourable situation in financial markets, which is closely linked to the mortgage crisis in the United States, was also reflected in the performance of collective investment companies. As at 30 June 2008, the average year-on-year return was lower than at the end of 2007 in all categories of funds. Most affected were equity funds, the portfolio of which depreciated by almost one-third. Relatively significant negative returns were recorded by the funds of funds (-9.2%) and mixed funds (-5.5%), which also include an equity component. Funds specialising in investment in bonds also produced a negative return (-0.6%), which is mainly the result of a rise in interest rates reducing the value of bonds in the portfolio. The best performers were money market mutual funds, which managed to appreciate their assets by 2.8%.

In money market mutual funds belonging to domestic asset management companies, gross return, including charges for management, fluctuated between the average interest rate on term deposits and the three-month BRIBOR rate.

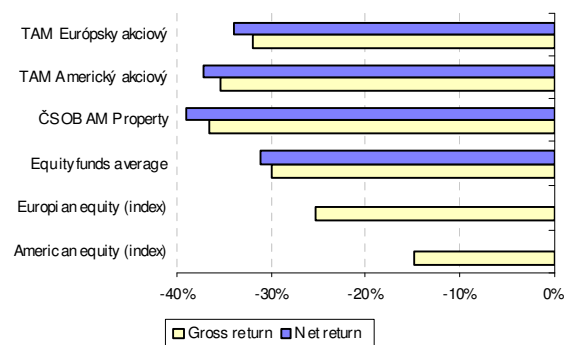
In the second half of 2007, but mainly in the first half of 2008, the returns of equity funds were significantly reduced by the global decline in share prices. While European and American shares, as measured by changes in the values of the EuroStoxx 50 and S&P 500 indices, recorded a year-on-year loss of -15% and 25% respectively (as at 30 June 2008), the shareholders of equity funds in the collective investment sector of Slovakia were confronted with an even sharper depreciation in their investments, close to -30%. The negative difference against the benchmark can be attributed to the year-on-year appreciation of the Slovak koruna against the euro and the dollar (by 10% and 23% respectively), which intensified the loss in a significant part of the portfolio, which is denominated in one of these currencies.

**Chart 77 Annual returns of the three biggest money market funds in SKK compared with the interbank and term deposit rates**



- Source: NBS, SASS.
- Data on the horizontal axis are in % per annum.
- The rate for term deposits is the average rate for the last 12 months, calculated from new deposits.
- Other funds are weighted by the net asset value.

**Chart 78 Annual returns of the three largest equity funds compared with the market indices**



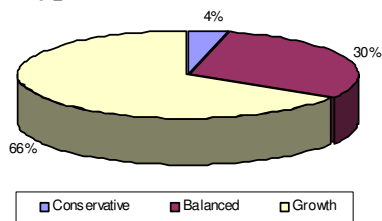
- Source: NBS, SASS.
- Data on the horizontal axis are in % per annum.
- Returns on European shares are determined on the basis of the DJ Euro Stoxx 50 TR index, returns on American shares on the basis of the S&P 500 TR index.
- The funds are weighted by the volume of NAV.

## 5. Pension saving

In the area of pension saving, developments during the first half of 2008 were influenced by the opening of the second pillar of the pension system, which allows new savers to enter and those involved to leave. During the period under review, the volume of assets managed in the sector continued to grow, by more than SKK 23.5 billion on a year-on-year basis. The volume of assets under management totalled SKK 85 billion as at 30 June 2008. In the case of the second pillar, the structure of funds by type was still dominated by growth funds, and in the case of the third pillar, by contributory pension funds. The composition of investments in pension funds was mainly influenced by the continuing mortgage crisis in the United States, which had spread to other segments of the financial market as well, causing a fall in volume of the equity sub-portfolio and a structural change in the bond sub-portfolio through increased investment in government bonds. Towards the end of the period under review, the performance of pension funds and supplementary pension funds was influenced by the global financial crisis. As a result, the average year-on-year returns of growth funds and balanced funds under the second pillar, and contributory funds under the third pillar, were in the red as at 30 June 2008.

### The second pillar

**Chart 79 Pension fund assets by share of each fund type**



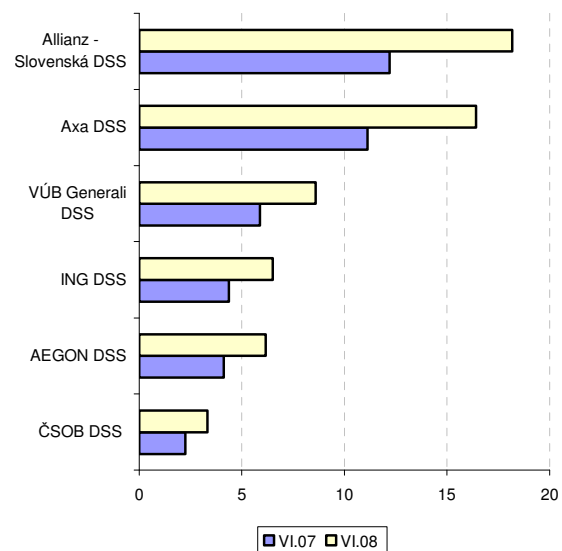
- Source: NBS.

One and a half years after the second pillar of the pension system was closed for voluntary savers, the Law on Retirement Pension Saving was amended as proposed by the Ministry of Labour, Social Affairs and Family. The amendment has re-opened the second pillar for voluntary savers and enabled savers who regarded participation in the second pillar as unfavourable to leave. Both possibilities were opened for the first half of 2008. The opportunity to leave was used by approximately 104.5 thousand savers.<sup>15</sup> Since the number of new participants in the pension system reached 21 thousand in the period under review, the

<sup>15</sup> The data come from the Social Insurance Agency.

number of savers participating in the system decreased to 1,504,645 (30 June 2008).

**Chart 80 Net asset value of pension funds for individual pension fund management companies**



- Source: NBS.

- The data on the horizontal axis are in billions of SKK.

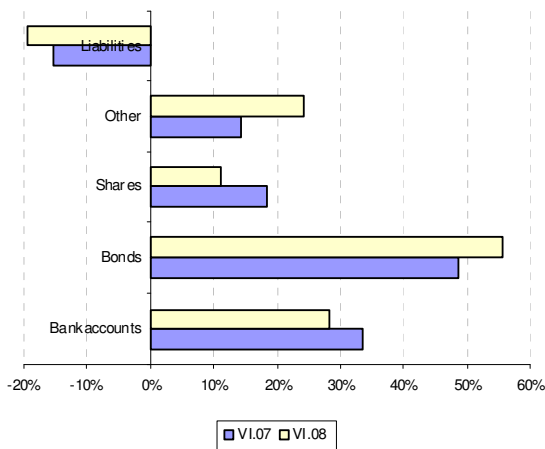
The total net asset value managed by funds within the second pillar of the pension system stood at SKK 59 billion as at 30 June 2008. On

a year-on-year basis, this represents an increase in assets of almost SKK 20 billion compared with the first half of 2007. Of this increase, almost SKK 8 billion took place in the second half of 2008, when part of the savers left the second pillar of the pension system and the savings from their personal pension accounts were transferred to the Social Insurance Agency.

The market shares of individual pension management companies (expressed in terms of the net asset value under management) remained unchanged during the first half of 2008, which can be described as a long-term trend.

The structure of savers also remained virtually unchanged in terms of their distribution among the funds, in accordance with the law. Almost two-thirds of the assets managed within the system were in growth funds (as at 30 June 2008). The share of funds in growth funds had increased since the end of 2007 by roughly 1 percentage point. Balance funds had deteriorated by the same amount, and ended the first half of 2008 at a level just below 30%. Conservative funds stagnated at the level of 4% in the long term.

**Chart 81 Share of individual types of investments in total volume of assets under management**



- Source: NBS.

The American mortgage crisis, which started in August 2007 and subsequently spread to other segments of the financial market throughout the world, also affected the composition of assets in pension funds. The year-on-year change in the composition of assets in funds reflected the whole range of structural changes that occurred from the period preceding the crisis to the end of June 2008. The most significant change was a decrease in the equity component of the portfolio by more than one-third, to 11.2% of the total NAV<sup>16</sup> of all funds. The volume of shares in the portfolio also decreased, from SKK 7.3 billion to SKK 6.6 billion. During the period under review, new contributions to funds were mostly invested in less risky assets, mainly in bonds. Thus, the dominant position of bonds strengthened still further: their share in total assets in all funds reached 56% as at 30 June 2008. An increase in volume, accompanied by a decrease in proportion, was recorded in that period in funds held on bank accounts, both current and term deposit accounts. This development was part of a long-term trend. The last significant group of investments was formed by forward currency transactions, which served as a hedge against the exchange rate risk. The structure of investments in growth and balanced funds did not differ significantly from the structure described above. In line with their risk profile, growth funds had more shares and less bonds in their portfolios (by several percentage points), while in the case of balance funds, it was the other way around. However, there were relatively small differences between growth and balance funds in the individual pension management companies. This also applied to the percentages of specific securities in the total volumes of bond and share portfolios. In conservative funds, the share of bonds was 65%, the remainder was formed almost exclusively by bank deposits. The investment strategy of these funds had changed

<sup>16</sup> NAV – net asset value.

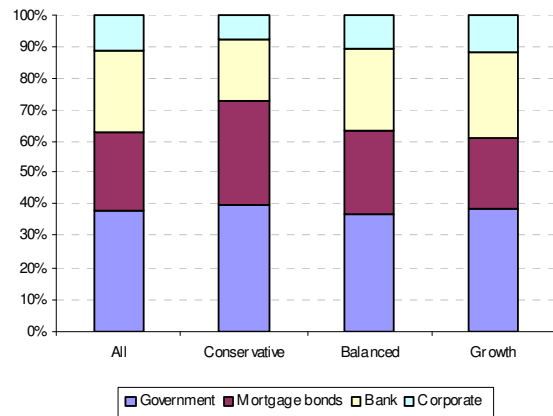


since the end of 2007, when the ratio between these components was roughly one to one.

After increasing to more than one-tenth in the second half of 2007, the share of funds held on bank accounts in foreign currency decreased to 7% in the first half of 2008. On the other hand, the share of bonds denominated in foreign currency continued to grow (to 15 % as at 30 June 2008).

The structure of the bond portfolio also changed during the period under review. From 31 December 2007 to 30 June 2008, the share of government bonds in the total volume of bond investments increased by 11 percentage points, to 38%, to the detriment of the other categories. Both bank bonds and mortgage bonds accounted for roughly one-quarter of the bond portfolio (at the end of 2007, the share of bank bonds was more than 30%). The smallest component was formed by corporate bonds, which accounted for 11% of the portfolio. The proportions of government bonds in the individual types of funds were basically equal to the total proportion in all three cases. The most significant differences in the relative proportions of mortgage bonds and bank bonds were observed in the case of conservative and growth funds (mortgage bonds: 33% in conservative funds and 22% in growth funds; bank bonds: 19% and 27% respectively). In the case of balanced funds, the proportions of these types of bonds were between the above figures.

**Chart 82 Structure of bond portfolio in the individual types of funds**



- Source: NBS.

An important characteristic of the bond portfolio with regard to the credit risk involved is the structure of coupon fixation. Roughly 56% of the debt securities purchased by pension management funds had a floating coupon, representing a low risk from the viewpoint of interest rate fluctuation. Fixed-coupon bonds accounted for 29% of the total volume. The remainder was in zero coupon bonds. A similar structure can be seen in the case of the individual funds.

For the purposes of this report, the performance of pension funds within the second pillar was monitored in two ways. One of them is a method taken over from the Act on Retirement Pension Savings, which defines the average yield of a pension fund (or the average yield of a market rivals) as an arithmetic average of the year-on-year percentage changes in the pension units during the past 24 months preceding the day for which the yield is calculated.<sup>17</sup> With regard to the annual horizon

<sup>17</sup> Act No. 43/2004 Coll.. on the Retirement Pension Saving and on amendment to certain laws as amended by subsequent regulations, in paragraph 91, defines the following:

1. The average yield of a pension management company's fund is a moving average of the year-on-year changes (percentages) in the daily values of pension units calculated for the last 24

of this report, the performance of a fund is also analysed on the basis of its year-on-year performance, expressing the fund's yield achieved during the 12 months preceding the day for which the yield is calculated, using the year-on-year percentage change in the value of the pension unit.<sup>18</sup>

The average yield of a market rivals (first method) provides a longer-term view on performance. On the last day of June 2008, the yield calculated in this way reached 3.7% in conservative funds, 3.6% in balanced funds, and 3.5% in growth funds.

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months with rounding to two decimal places (upwards).

2. The average yield of a market rivals is an arithmetic average of the moving averages of year-on-year changes (percentages) in the daily values of the competitor's pension units calculated for the last 24 months with rounding to two decimal places (upwards).

<sup>18</sup> The average annual yield for pension funds of the given type was calculated as a weighted average of the year-on-year changes (percentages) in the daily values of the pension units of the relevant pension funds. As at 30 June 2008 (PMZDHDJ<sub>30.6.2008</sub>), the year-on-year changes (percentages) in the daily values of pension units were calculated as follows:

$$PMZDHDJ_{30.6.2008} = \left( \frac{DJ_{30.6.2008}}{DJ_{29.6.2007}} - 1 \right) * 100\%$$

where: DJ is the value of the pension unit on the given day.

The weight was the ratio of net asset value (NAV) in the given fund to the sum of NAVs in funds of the same type.

The yield is given in nominal terms, which means that inflation is not deducted. In determining the yield earned from investment in different forms, the yield is usually given in nominal terms, and the standard statutory methodology is used for its calculation.

This yield is, however, not identical with the saver's yield on his personal pension account, which is calculated on an individual basis.

The input data were the values of pension units of individual pension funds, reported by pension management companies to the National Bank of Slovakia as at 29 June 2007 (the last working day in June) and 30 June 2008, which are available on the web page of the National Bank of Slovakia.

Almost exactly one year after the annual performance of balanced and growth funds (measured by the second method) reached its maximum at around 7% and 8% respectively (June 2007), the yields of these funds fell to a historical low. As at 30 June 2008, the average yield achieved by balanced funds stood at -1.1%, the depreciation of investments in growth funds at -2.5%. This was mainly the consequence of the American mortgage crisis, which, among other things, led to a fall in the share indices on all major stock markets. The depreciated share issues in the portfolios of these funds had a negative impact on the values of pension units, as well as on their performance. Owing to the current composition of the portfolio, in which the limits laid down in law are not utilised in full (the proportion of shares is less than 20%, while the statutory limit is 50% for balanced funds and 80% for growth funds), the fall in the values of portfolios was only a fraction of the fall in the values of share indices. The yields of conservative funds remained virtually unaffected by the crisis. They averaged 3.8% at end-June 2008, at a level 0.4 of a percentage point lower than a year earlier. If the year-on-year HICP inflation rate is taken into account (4.3%), the appreciation of savings in real terms shows a negative figure.

**Table 8 Annual yields of pension funds as at 30 June 2008**

Type of funds	Weighted average
Conservative funds	3.82 %
Balanced funds	-1.07%
Growth funds	-2.48%

- Source: NBS.
- The data are in percentages.
- The methodology used in the table is described in detail in footnote 18.

Starting from 21 March 2008, when exactly three years had passed since the establishment of funds under the second pillar, pension management companies are required to calculate the average yields achieved by their

funds, as well as the yields of market rivals, for benchmarking purposes. The yield of a fund may not fall below the level derived from the average yield of market rivals for the given type of funds, otherwise the pension management company would have to replenish the fund's assets from its own resources. In the period from the launch of benchmarking to 30 June 2008, the prescribed limits were met by all banks.

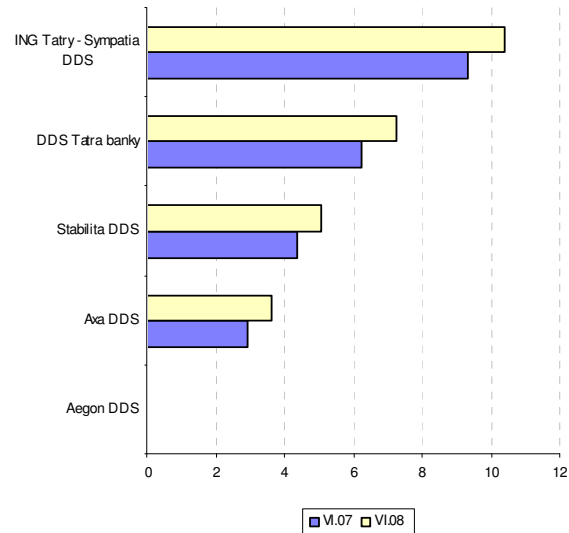
Since the yields and expenses of pension management companies come mostly from charges for management and operating expenses (independently of the results of pension funds), their financial performance was not affected negatively by the ongoing global financial crisis. On the contrary, the overall financial result of the pension management sector was positive in the first half of 2008, for the first time since the adoption of the system.

### The third pillar

The first half of 2008 saw the continuation of the rising trend in net asset value (NAV) in funds run by supplementary pension management companies. At end-June 2008, NAV for all supplementary pension management companies reached SKK 26.4 billion, representing a year-on-year increase of 15.5% and a 4.1% increase in comparison with December 2007. Most assets (97.1%) are held in contributory funds within the voluntary third pillar of the pension system, but the value of assets in the payment funds of supplementary pension management companies is steadily increasing.

In the supplementary pension savings market, a dominant position over the first half of 2008 was still maintained by ING Tatry – Sympatia supplementary pension management fund, but its market share is on the decrease as a result of faster growth in NAV in the funds of other supplementary pension management companies.

**Chart 83 Net asset value of pension funds for individual supplementary pension fund management companies**



- Source: NBS.
- Data on the horizontal axis in billions of SKK.

Through five supplementary pension management companies, more than 855,000 citizens joined the third pillar of the pension system, 96.7% of them as savers and 3.3% as beneficiaries (as at 30 June 2008). Compared with December 2007, the number of savers and beneficiaries increased by 8%<sup>19</sup>.

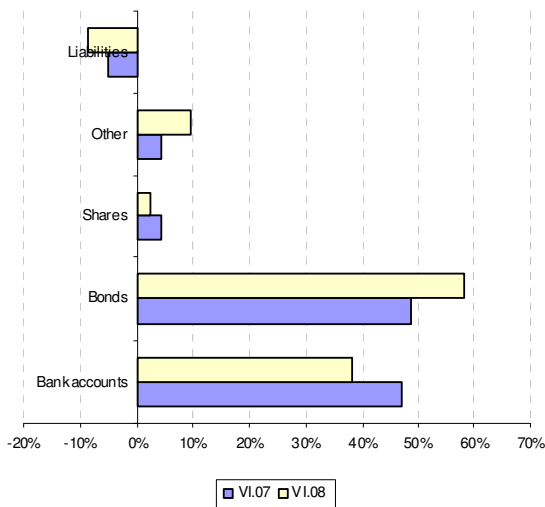
In June 2008, profits were recorded by four out of five supplementary pension management companies. At the end of the period under review, supplementary pension management companies reported a total profit of SKK 75.6 million.

At end-June 2008, the assets of supplementary pension management funds were held mostly in bonds (SKK 15.4 billion), namely in government bonds (SKK 9.6 billion) and bank bonds (SKK 3.2 billion); the remainder was kept on bank accounts (SKK 10.1 billion). Compared with the same period in 2007, the volume of bond investments increased over the first half of 2008 by SKK 4.2

<sup>19</sup> Data on the number of participants and beneficiaries as at 30 June 2007 are not available.

billion (38.2 %), while the volume of assets held on bank accounts fell by 5.9% and investments in shares by SKK 400 million (38.3%), in connection with the global financial crisis. As at 30 June 2008, investments in shares amounted to SKK 640 million.

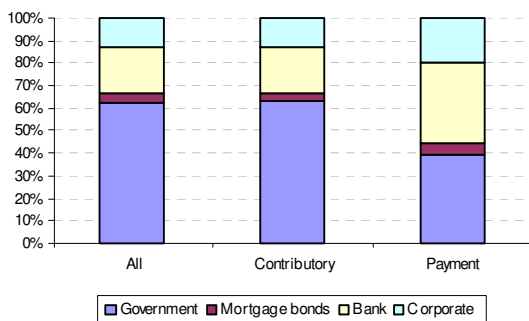
**Chart 84 Share of individual types of investments in total volume of assets under management**



- Source: NBS.

The volume of shares in the portfolios of supplementary pension management funds fell on a year-on-year basis, mainly due to the sale of shares in four contributory funds.

**Chart 85 Structure of bond portfolio in supplementary pension funds (June 2008)**



- Source: NBS.

At 30 June 2008, the year-on-year yields of funds within the voluntary third pillar of the pension system ranged from -9.1% to 4.3%<sup>20</sup>. The average year-on-year yield weighted by the NAV of payments funds within the voluntary third pillar of the pension system stood at 0.04%, in contributory funds at -0.86%. Since these figures express yield in nominal terms, they must be reduced by the year-on-year HICP inflation rate as at 30 June 2008 (4.3%) if the yield is to be expressed in real terms. The lower yields of supplementary pension funds can be ascribed to uncertainty in the financial markets, rising inflation, and the charges of supplementary pension management companies<sup>21</sup>. As at 30 June 2008, the sum of payments represented 1.6% of the total NAV in all funds within the scope of the supplementary pension system.

<sup>20</sup> The data supplied by supplementary pension management companies, as well as the methods used for their calculation, differed.

<sup>21</sup> Apart from payments for the management of supplementary pension funds (SPF), the transfer of participants to another SPF and the compensation paid are borne by the savers participating in the voluntary third pillar, as well as expenses and charges related to taxes payable on assets held in SPFs, payments for depository services, charges for the settlement of transactions in securities, and charges payable to banks, securities dealers, and members of the central depository, and other expenses and charges.

## **6. Risks in the financial sector**

*The level of risks faced by the financial sector in the first half of 2008 was higher than in the previous periods. This was closely connected with the global financial crisis. The negative effects of the crisis can be observed mostly in the financial markets; the global economy has not yet been affected to a significant extent. In the domestic financial sector, the crisis is reflected to a similar extent. Affected in the first half of the year were mainly sectors where funds received from customers are invested in the financial markets. Negative developments in the financial markets were recorded in investments in selected mutual funds and pension saving funds. The value of these investments fell mainly as a result of a decline in shares, accompanied by increases in credit spreads and interest rates. Numerous funds reacted to the negative developments by modifying the structure of their portfolios and by making more conservative investments. Thus, the equity risk diminished in mutual funds, balanced funds, and growth funds under the second pillar of the pension system. The equity component also decreased under the third pillar of the pension system.*

*Despite a fall, the equity risk was still a dominant risk in the selected mutual funds, contributory funds within the third pillar, and in balanced and growth funds within the second pillar of the pension system. Credit risk occurred in all funds within the second pillar of the pension system, but was relatively moderate. In the first half of 2008, however, the degree of credit risk increased somewhat as a result of a rise in the volatility of domestic interest rates and an increase in the share of bonds. Exposed to the risk of exchange rate changes were only contributory funds under the third pillar of the pension system and selected mutual funds.*

*The impact of the financial crisis was not yet reflected in the banking sector in full. This can be explained by the orientation of banks to the domestic economy, which still followed a positive trend during the first half of the year. This, however, does not mean the banking sector was not affected by the crisis. The sector as a whole recorded a rise in the prices of funds on the interbank market, which was later also reflected in prices for primary resources from customers and in the level of yields required from securities. In the selected banks, the impact of the crisis was mirrored in the values of their financial assets.*

*Despite the moderate impact of the financial crisis on the banking sector, the degree of the risk faced by banks increased in the first half of 2008. This was mainly the result of increased credit risk in the household and corporate sectors.*

*The increase in credit risk related to households is mainly associated with the rapid growth in bank lending to households. In June 2008, the quality of loan portfolios was relatively satisfactory in numerous domestic banks. Housing loans were of relatively good quality in most banks. On the other hand, the volume of defaulted consumer loans increased; they accounted for almost 40% of the total volume of defaulted household loans.*

*Deteriorations were recorded in several credit risk indicators in the portfolios of household loans. The average amount of loans provided increased in connection with the high real estate prices, as a result of which the monthly loan instalments also increased. This increase exceeded the growth in the disposable income of households. Thus, the ratio of loan instalments to household incomes increased. In other words, loan instalments absorbed a larger part of the incomes and thus exposed households to increased risk in the case of a negative trend on the income side.*

*Exposed to risks are the lower income groups of households in particular, whose incomes are most burdened by loan instalments. However, the share of these groups in the total volume of loans provided is negligible.*

*The risk faced by banks in relation to households increased, mainly as a result of growth in the volume of new loans. In 2007 and in the first half of 2008, the volume of new loans reached historical highs. For banks, new loans are more risky than loans provided earlier. The loan repayment burden in relation to income is higher than in the case loans provided earlier. Differences can mainly be observed in the case of loans provided in 2007 and 2008, when real estate prices increased to new highs and loan instalments reached maximum amounts. For banks, new loans are also more risky with regard to the value of collateral. The high real estate prices and the effort to maintain the achieved market share forced banks to reduce their requirements concerning the value of collateral in relation to the amount of credit provided.*

*Credit risk related to corporate entities is assessed on the basis of data on selected groups of bank customers. Almost one-third of the exposures to corporate entities is formed by loans and debt securities from bank groups. A substantial part of the exposures is formed by receivables from own bank groups. Exposures to banks are, in general, classified as less risky exposures. This is also confirmed by the very low proportion of defaulted receivables from bank groups. However, the credit risk inherent in these receivables increased, mainly in connection with the ongoing global financial crisis. Ratings were reduced for some of the bank groups, to which domestic banks have exposures. The credit risk outlook for bank groups in the EU and USA is rather negative for the coming period.*

*A significant part of the corporate loan portfolio is formed by loans to key customers. These are loans to large supranational corporations, domestic state-owned enterprises and local governments, domestic private companies, and domestic financial institutions. The degree of risk in individual banks is mainly given by the share of these groups in the total portfolio. The loan portfolios of large banks were dominated by loans to big supranational groups and domestic state-owned companies. Medium-sized banks focussed more on domestic enterprises. The selected banks showed clear orientation towards domestic financial groups focussing on the real estate sector and on private equity projects.*

*The exposures of banks are dominated by exposures to small customers. These exposures represent the largest component in defaulted loans.*

*The credit risk faced by banks was tested using selected stress tests, designed to assess the sensitivity of banks to specific negative situations. The test results indicate that the banking sector is relatively resistant to the current unfavourable trends. The individual banks produced markedly different results. In comparison with 2007, the sensitivity of banks to stress remained virtually unchanged. Banks responded most sensitively to the scenario consisting in an increase in defaulted loans, combined with a credit crunch.*

*Market risks in the banking sector remained insignificant, despite the ongoing crisis. This was due to the conservative approach of banks: most banks closed their open market positions.*

*The exchange rate risk remained insignificant for the banking sector in the first half of 2008. Most banks closed their open balance-sheet positions through off-balance-sheet operations. In numerous banks, the VaR (Value-at-Risk) for exchange rate risk never exceeded 2% of the own funds during the first six months of 2008.*

*Nor did the interest rate risk represent a serious risk for the banking sector. A hedge against the risk of interest rate fluctuation was the conduct of off-balance-sheet operations. There were, however, differences in the size of this risk within the banking sector.*

*The stress tests also confirmed that the functioning of the sector as a whole was not threatened by changes in the market factors.*

*As far as liquidity risk is concerned, the banking sector recorded no significant changes in the short term. The sector as a whole showed acceptable values in all the indicators under monitoring. In some of the banks, however, the liquidity situation deteriorated in the short term. To maintain an adequate level of liquidity, it is vital for banks to have a stable portfolio of core deposits. Some of the banks showed increased sensitivity to stress scenarios simulating the withdrawal of deposits by customers and non-resident banks. Regarding liquidity from a longer-term perspective, an important aspect is that lending activity at most banks is financed from stable customer deposits or from issues of long-term securities. However, these indicators deteriorated in the banking sector during the first six months.*

*The main risk to which insurance companies were exposed was the insurance risk. In addition, insurance companies were exposed to market risks, which may cause an unexpected fall in the value of assets covering their technical reserves. Within the scope of market risks, the only important risk is the interest rate risk, since a large part of assets is formed by debt securities. A possible change in interest rates would, however, cause a fall in interest income only, since most securities are not revalued to fair value.*

#### **Box 4 Developments in the euro-area banking sector with regard to the ongoing financial crisis**

Recent developments in the banking sectors of euro-area countries are substantially influenced by the ongoing crisis in global financial markets. The turning point in this crisis was the year 2007. In the first half of 2007, banks enjoyed the positive trends from previous years: they reached record profit ratios, recorded increased capital formation, which made them resistant to possible negative shocks. The financial positions of large euro-area banks started to weaken in the second half of 2007; the negative trends continued in the first quarter of 2008. The individual banks were affected by the crisis in different measure, but the banking sector as a whole recorded numerous negative trends.

Numerous banks attempted to restructure their asset portfolios. Their losses resulted mostly from structured securities linked to the US sub-prime loan market. Although assets depreciated in large part, the financial markets are still dominated by increased uncertainty. The risks are mainly associated with developments in residential property prices in the United States. Residential properties represent a significant market for assets, to which the financial assets of banks are linked. The continuing fall in real estate prices may negatively influence the quality of prime loans, in which banks have much larger exposures than in sub-prime loans.

While the risk associated with the US residential property market is still active, new risks have also emerged. These are connected with the slowdown in economic activity in the euro area. The rise in energy prices, food prices, and the tightening of credit standards at banks are associated with the risk of downturn in the business cycle. Negative trends were also recorded in the household sector. At the end of 2007, the real disposable income of households recorded the slowest growth rate since 2003. The financial assets of households fell in value, owing to the negative developments in financial markets. Demand for loans declined in several euro-area countries in connection with the fall in real estate prices. In the corporate sector, negative trends occurred in segments where the rate of indebtedness is high (private equity, commercial real estate, etc.).

The uncertainty in the financial markets led to an increase in the costs of financing. The high spreads in money markets increasingly mirror the credit risks of counterparties, rather than the liquidity risk. There is still low activity in the market for securitised securities, which greatly complicates the valuation of these assets. Revival was observed only in selected segments of base assets (European

residential properties, etc.) with simplified structures. Share issues continued to decline in the first half of 2008.

The ongoing financial crisis is mainly reflected in the profit ratios of euro-area banks. Although the median value of return on assets (ROA) for 2007 was higher than in the previous years, numerous banks recorded substantially lower profits in the second half of the year. The crisis was mostly reflected in valuation losses (market-to-market) and losses resulting from the depreciation of receivables. Interest income also decreased, despite the persistently large volume of loans provided. Thus, the primary source of income was non-interest income, mainly income from bank charges. Income from trading at aggregate level had grown somewhat by the end of 2007, though numerous banks recorded significant losses.

The capital positions of banks deteriorated slightly. However, numerous banks managed to maintain their capital positions at a satisfactory level. The capital requirement of banks fell, mainly as a result of an increase in risk-weighted assets, resulting from an increase in loans, the shift of receivables from the off-balance sheet to the balance sheet and, in several cases, from bank acquisitions. With the limited possibilities for profit generation in the coming period, the capacity of banks to replenish their capital from retained profits will diminish still further and banks will be dependent on external sources.

The further trend in the financial positions of euro-area banks in the next few years will largely depend on developments in the financial markets and the impact of the crisis on the real economy. There are various scenarios, ranging from relatively fast stabilisation to a persistent and deep crisis hitting not only the financial markets, but the real economy as well.

In 2008, however, we can expect continued pressures on the profits of banks through several channels. Owing to uncertainty about the quality of assets of certain types and problems with the valuation of certain financial instruments, we can expect further valuation losses. Banks will certainly be affected by the high price of funds, which will exert pressure on the interest margins. According to the latest ECB survey of credit standards, numerous banks expect a fall in demand for new loans in the household and corporate sectors, which is likely to be accompanied by a fall in interest income. In connection with the expected downturn in activity in financial services, such as securitisation, income from bank charges is also likely to fall.

For the further development of the banking sector, a substantial factor will be the situation in the household and corporate sectors. In the euro area, banks had adopted a more reserved approach to lending to these sectors as early as end-2007. As far as households are concerned, there are concerns about the further trend in the residential property market, the growing indebtedness of households, and the future course of economic development. Households show relatively high sensitivity to loan repayment in the case of interest rate changes.

For lending to enterprises, the credit standards were also tightened in connection with the possible change in the business cycle. The financial positions of enterprises may also be threatened by the high oil prices and the strong EUR exchange rate. Banks have already restricted their exposures to the most risky sectors (commercial real estate, private equity, etc.).



## Banks

### Household credit risk

#### Household indebtedness

The indebtedness of households by loans continued to grow rapidly over the first half of 2008. In absolute terms, the volume of loans provided by banks recorded the largest increase, compared with the previous periods. In relation to GDP, however, bank lending increased only slightly, due to strong growth in the domestic economy (the ratio of loans to GDP stood at 16.3% in June 2008). Compared with the average figure for EU countries (60.1% at the end of 2007), the ratio of loans to GDP was still relatively small in Slovakia.

The willingness of households to incur debt is connected in large measure with their financial standing. The standing of households improved steadily throughout 2007 and the first half of 2008. Their growing incomes covered the rising inflation during 2007 and the first quarter of 2008 (real income grew in 2007 by 4.3%, in the first quarter of 2008 by 6.2%), thus they showed increased propensity to consume and invest. Unemployment also showed a positive tendency in the period under review. Household loans were significantly influenced by the real estate market. The steep rise in residential property prices during 2007 and the first quarter of 2008 'motivated' numerous households to buy a real estate property as soon as possible, at a relatively low price. The increase in real estate prices also gave rise to speculative purchases, which also contributed to the growing demand for loans.

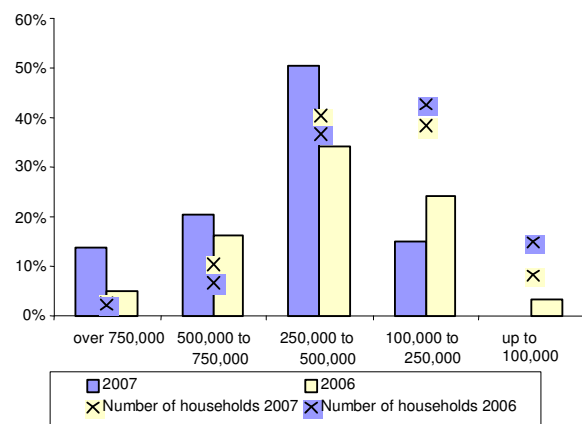
Looking at specific loans, we can see that the average volume of loans provided also increased. After fluctuating at the level of SKK 1.2 billion in the second half of 2007, the average volume of new housing loans increased by approximately SKK 100,000 in the first half of 2008.

In terms of number, most loans were provided in consumer loans. In 2007, consumer

loans were granted to almost 43% of the households. The share of consumer loans in the total volume of indebtedness was much smaller than that of housing loans. On the other hand, housing loans were provided to a little more than 4% of the households only. They accounted for almost 70%<sup>22</sup> of the total volume of loans provided in the first half of 2008.

The structure of housing loans by the level of income indicates that such loans were mainly provided to households on a higher income. In 2007, 84% of the total volume of housing loans was provided to households with an annual income of over SKK 250,000. In comparison with 2006, the volume of loans provided to high-income groups increased. In 2007, the number of households in low-income groups decreased (up to SKK 250,000) and that of households on a higher income increased (over SKK 250,000).

**Chart 86 Loans for real estate property purchases by income group**



- Source: Statistical Office of the SR, EU SILC 2006, EU SILC 2007 UDB, NBS calculations.
- The chart shows the outstanding amounts of loans broken down by income group.
- The number of households expresses the distribution of the total number of households by income group.

In income groups with an annual income of over SKK 250,000, approximately 6% of the

<sup>22</sup> Source: Statistical Office of the SR, EU SILC 2007 UDB.

households received a bank loan in 2007. In lower income groups, less than 1% of the households received a loan.

Differences were recorded in the amounts of the loans provided; the average amount of a loan in the high-income group was greater.

**Credit risk**

Strong growth in bank lending is often accompanied by certain imbalances, which, coupled with other factors, mainly external ones, may cause serious problems to banks, mainly through growth in the number of defaulted loans. There are several examples from various countries, where a massive increase in loans led to a banking crisis.

Last year, the volume of defaulted loans increased mainly in the ‘consumer loans’ category. Consumer loans also had a dominant share in defaulted loans in the household sector (in June 2008).

In the first half of 2008, the share of defaulted loans in the total volume of household loans was relatively small. However, some of the banks reported a relatively large share of defaulted loans, with an increasing tendency.

The share of defaulted loans in mortgage loans was minimal. Numerous banks reported a year-on-year fall in the volume of defaulted loans.

**Table 9 Proportions of defaulted loans in the individual categories of household loans**

	June 2008	June 2007
Loans to households	3.8 %	3.5 %
Mortgage loans	1.3 %	1.7 %
Other house purchase loans	2.6 %	2.6 %
Building loans	1.6 %	1.7 %
Intermediate loans	4.3 %	4.1 %
Consumer loans	8.8 %	7.4 %
Current account overdrafts	2.2 %	2.0 %
Credit cards	7.8 %	2.9 %

- Source: NBS.

Other loans provided for real estate property purchases (which are similar to mortgage loans) were of poorer quality. In the area of home savings and loans, the quality of intermediate loans deteriorated.

The volume of defaulted loans, as well as their percentage, increased in the case of consumer loans. In June 2008, the share of defaulted consumer loans in the total volume of consumer loans reached almost 9% within the sector.

The share of defaulted loans is an indicator of the actual quality of a bank’s loan portfolio. The indicator provides information on how households repay their loans. However, the actual risk is how the current loans will be repaid in the future. Hence, it is important to monitor the individual risk factors that are inherent in a loan portfolio.

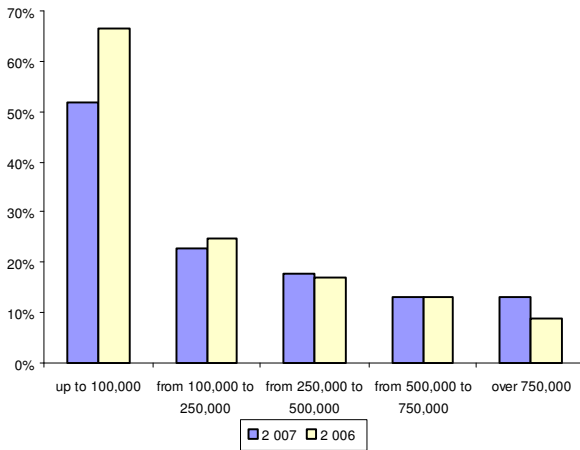
The ability and willingness of households to repay their liabilities to banks are mainly connected with their financial standing. From the viewpoint of credit risk, the important periods are those of stresses and strains, i.e. loss of employment, loss of income, rise in interest rates, etc. Hence, in lending to households, it is important to monitor the ratio of loan instalments to the total disposable income. The higher income a household has for loan repayment, the larger safety ‘cushion’ is available for the case of a financial crisis.

The aforementioned increase in the amounts of loans provided led to an increase in amounts of loan instalments. The amounts of monthly loan instalments increased year-on-year by almost 12%. Despite this, disposable incomes grew significantly on a year-on-year basis; the ratio of loan instalments to disposable incomes increased to 33% in 2007, from 30% in 2006.

This ratio is closely connected with the incomes of households. The higher income a household has at disposal, the lower its loan instalment burden is. The level of this burden fell on a year-on-year basis in the case of low-

income groups, while rising somewhat in the case of households on a very high income.

**Chart 87 Breakdown of loan instalments as a percentage of disposable household income by income group**



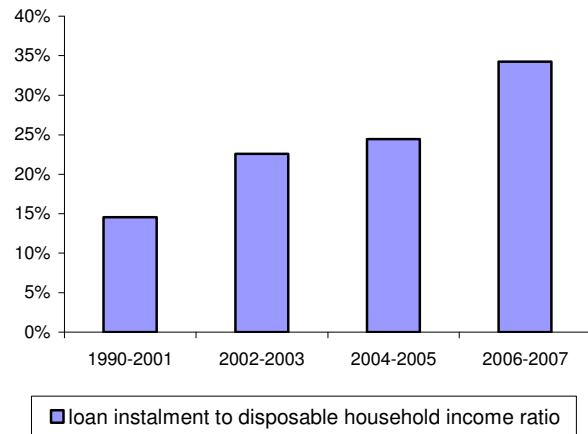
- Source: Statistical Office of the SR, EU SILC 2006, EU SILC 2007, NBS calculations.

More risky for banks are the low-income groups of households, whose incomes are most burdened with loan instalments. In the volume of loans provided, the low-income groups of households had a (relatively) negligible share. This also applies to the number of loans. A comparison of developments in 2007 and 2006 shows an even larger increase in the share of high-income households in the total volume of housing loans.

Differences in the ratios of loan instalments to incomes can also be observed according to the year in which the loans was provided. The earlier a loan was provided, the lower the instalment burden in relation to the current income is. This ratio is positively influenced by the growing incomes, which tend to reduce the value of this indicator. The following chart shows that the highest burden is recorded in the case of loans provided in the recent period. The ratio would probably be even higher if the chart contained data for the second half of 2007 (real estate prices rose most steeply in that period).

With regard to credit risk, it is important enough to mention that the portfolios of banks contain mostly new loans. The volume of loans provided started to grow significantly in 2004, the largest amounts were lent at the end of 2007 and in the first half of 2008.

**Chart 88 Breakdown of loans instalments as a percentage of disposable household income by the year of lending**

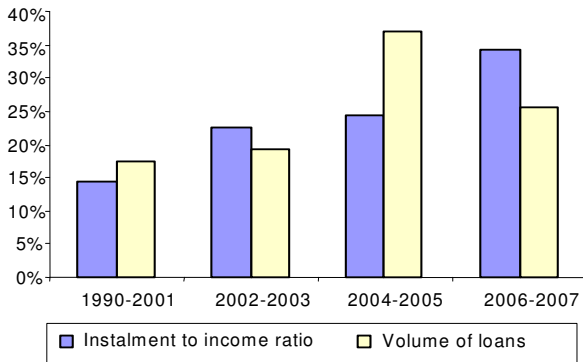


- Source: Statistical Office of the SR, EU SILC 2006, EU SILC 2007, NBS calculations.  
 - The chart only includes housing loans, except building and intermediate loans.  
 - Data from 2007 are available only for the first half of the year.

New loans are also more risky for banks because of the value of collateral. The ratio of the loan provided to the value of collateral (LTV, i.e. Loan-to-Value) is substantially higher in the case of new loans. The rapid increase in real estate prices lowers the LTV ratio in the case of older loans (the amount of loan instalments decreases, the value of the real estate pledged as collateral increases), but significantly raises the LTV ratio in the case of new loans (banks loosen their credit standards and finance a larger part of the purchased real estate property). This strategy carries the risk that, in the case of a fall in real estate prices, the outstanding amount of the loan will be higher than the price of the real estate, which may be a

problem in the case of default in loan repayment.

**Chart 89 Breakdown of loan instalment burdens and the outstanding amounts of loans by the year of lending**



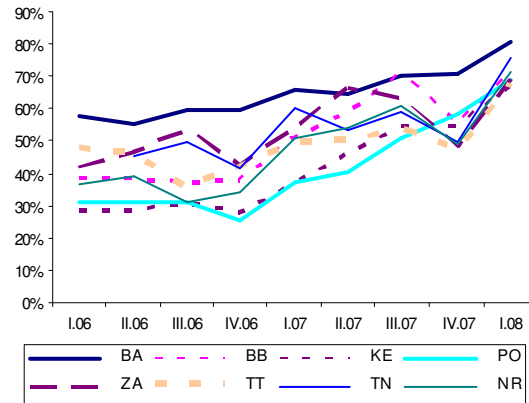
- Source: Statistical Office of the SR, EU SILC 2006, EU SILC 2007, NBS calculations.
- The vertical axis gives the ratio of loan instalments to disposable income by the year of lending and the percentage of house purchase loans provided in the given years.

The growing loan instalment burden of households can be attributed in large part to the rising real estate prices. Assumptions of a continuing price increase stimulated increased demand for loans, the volume of loans provided also increased (higher real estate prices) and banks loosened their collateral requirements (a larger part of the real estate property was financed from loans). As a result, the amounts of loan instalments considerably increased in the case of new loans. They increased more rapidly than household incomes, hence the loan instalment burdens also increased.

This trend can be seen in the example of three-room flat purchases in the individual regional cities. The following chart shows a comparison of three-room flat purchases from bank loans by quarter. Expenses on loan instalments are compared with household incomes in the given regional city. In all these cities, house purchase loans instalments grew at a much faster rate than household incomes. In other words, the high real estate prices absorbed

a larger part of the household income in the case of a house/flat purchase.

**Chart 90 Household incomes burdened with loan instalments for a 3-room flat**



- Source: Real Estate Price Map, Statistical Office of the SR, NBS calculations.
- The burden is calculated for the purchase of an average 3-room flat financed from a bank loan granted for 20 years with a 80% LTV ratio at an average interest rate.
- The values used in the chart are only for illustrative purposes, i.e. to illustrate the trend of development in time.

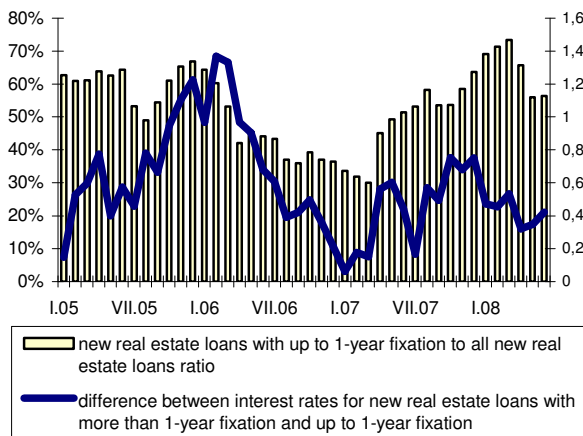
This trend indicates that the ability of households to repay loans provided for the purchase of a house or flat will be a significant limiting factor in the further rise in real estate prices. This was already seen in the second quarter of 2008, when prices for flats began to fall or rise slightly in comparison with the first quarter of 2008, in almost all the regional cities.

Another source of risk in relation to households is the interest rate risk. The significance of this risk depends on the share of loans with short-term interest rate fixation. Such loans are more exposed to changes in interest rates, and consequently in the amounts of instalments. By selecting the period of fixation, households may choose between a conservative loan with stable instalments (though initially higher than in the case of short-term fixation) and a more risky loan,

which may seem more advantageous, but is much more expensive in the long term.

Households tend to choose the second option, because they usually take out house purchase loans with a fixation period of up to one year. The selection of the fixation period largely depends on the rate of interest offered.

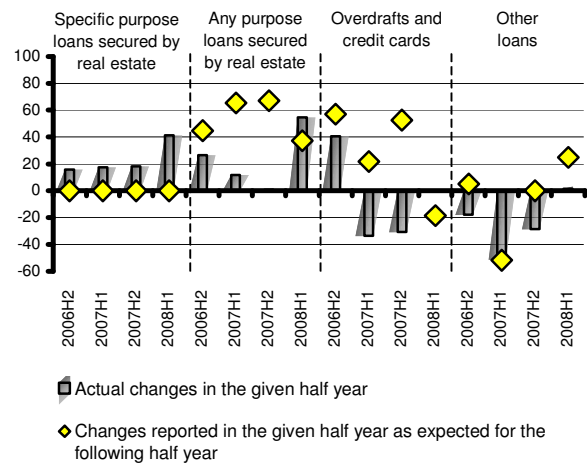
**Chart 91 New loans provided to households by the period of interest rate fixation**



- Source: NBS.
- The left-hand vertical axis gives the proportion of new loans for house purchases with a fixation of up to 1 year.
- The right-hand vertical axis gives the difference between interest rates on new house purchase loans with fixation periods of over 1 year and up to 1 year.

The degree of risk taken by banks when lending to households largely depends on the approach of banks to customers. The result of a more liberal approach to customers (e.g. more moderate income and collateral requirements, etc.) is that households may have difficulties in meeting their liabilities under financial stress. Experience from other countries indicate that banks tend to loosen their lending conditions excessively in periods of economic revival and boom in the lending market. The main reasons behind this are excessive optimism about the future, pressure for further growth in profits, and competition on the part of other banks.

**Chart 92 Credit standards for loans to households**



- Source: NBS, Bank lending survey.
- The data are given in net terms as percentages, a positive figure means a loosening of the standards.
- Changes in the standards express the subjective views of banks.

Credit standards have also been loosened by Slovak banks in recent years. The standards have mainly been loosened for loans secured by real estate property. In the first half of 2008, the loosening of standards was motivated by the growing competition and changes in credit risk management. Banks reduced their charges and moderated their requirements for the value of the real estate property pledged as collateral, which was connected with the rise in real estate prices.

The evaluation of the changes in standards and their impact on the degree of credit risk is rather demanding, for the changes are to be evaluated, not the settings of these standards. The loosening of credit standards – unless they are based on the improved financial standing of households, the better macroeconomic situation, or changes in risk management in the bank concerned (but are due to competition or an attempt to acquire a larger market share) – may lead to an increase in the degree of credit risk.

The loosening of standards in the area of requirements concerning the value of collateral

led to an increase in the ratio of the loan provided to the value of the real estate property pledged as collateral (*LTV, i.e. loan-to-value ratio*). The volume of new loans with an LTV ratio of over 100% increased in numerous banks. The most significant increase took place in the second half of 2007, in connection with the sharp rise in real estate prices. Thus, banks reduced the relative value of collateral which is at their disposal in case of default in loan repayment.

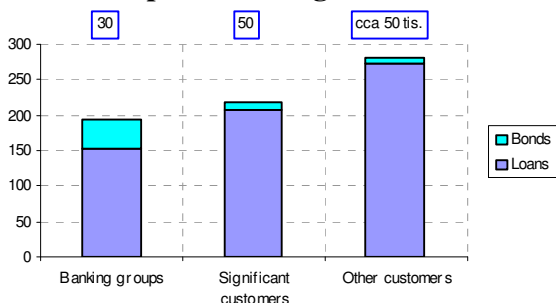
### Corporate credit risk

The credit risk associated with entities other than households is assessed in three basic categories.

The first category comprises banks and entities belonging to bank groups (mainly leasing companies). The second is formed by significant customers, defined as economically connected persons, whose liabilities to the banking sector exceed SKK 1 billion. The third category covers less significant customers (whose liabilities are below SKK 1 billion), including numerous large companies, as well as small enterprises, most self-governments, small businesses, and non-residents, which do not meet the criteria for a key customer.

Exposures to the 50 most significant customers (except for bank groups) account for 43% of the total exposure to non-bank corporate entities (Chart 93).

**Chart 93 Exposures to legal entities**

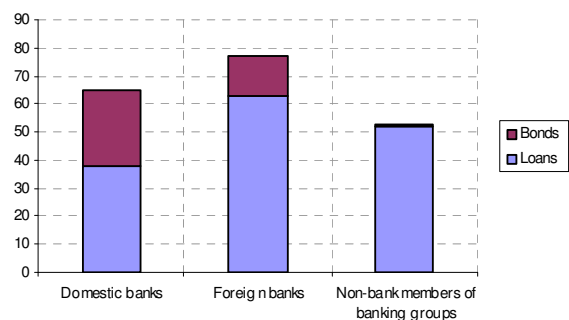


- Source: NBS, RBUZ.
- Data on the vertical axis are in billions of SKK.
- The numbers above the columns refer to the number of customers.

### Exposures to bank groups

Receivables from bank groups belong, in general, to low-risk exposures. This is indicated by the creation of provisions, which was at zero level as at 30 June 2008, except in five banks, which created provisions in the total amount of SKK 73 million, which is, however, a negligible item in comparison with the amounts of exposures (Chart 94).

**Chart 94 Structure of exposures to bank groups**



- Source: NBS, STATUS, RBUZ.
- The data are in billions of SKK.

The risk associated with bank groups is currently higher in the case of bonds issued by large foreign banks. During the first half of 2008, however, the ratings of these securities, with minor exceptions, remained virtually unchanged, at the level of the rating of Slovak government bonds.

An important part of assets is formed by receivables from own financial groups, which comprise receivables from parent banks and affiliated banks, and receivables from subsidiaries, mostly leasing companies. Exposures to own groups exceeds 20% of the own funds in numerous banks, which increases the dependence of banks on their own groups (mainly in the case of receivables from the parent bank).

Apart from being dependent on the group's liquidity, a bank with a larger exposure to its own group takes over the group's credit

characteristics in large measure. The parent banks of most Slovak banks, however, managed to maintain their ratings throughout the first half of 2008.

The exposures of domestic banks to bank groups (parent or other groups) can be characterised by the fact that none of the relevant banks groups has been given a higher rating in the recent period, on the contrary, bank ratings have been reduced in three cases.

### Credit risk related to key customers

The group of key customers includes mainly large foreign investors, whose liabilities account for 57% of the portfolio of key customers. The second largest category (21% of the portfolio) is formed by state-owned companies and self-governments. The next category covers large Slovak companies, forming 10% of the portfolio. Financial groups accounting for 12% of the portfolio represent a separate category.

The positive thing in the Slovak banking sector is that none of the loans provided to key customers has been depreciated. Despite this positive fact, it is obvious that the individual categories represent different risks. For banks, another important indicator is the weight of exposures to key customers.

A credit risk analysis of key customers in a specific bank means the combination of their significance for the bank and the dominant category. The five largest banks' clientele can be characterised by a dominance of foreign investors, followed by state-owned companies. This can be classified as a less risky portfolio compared with the portfolios of medium-sized banks, which are dominated by domestic companies.

This means that a large part of the exposures to companies (ca. SKK 215 billion) is concentrated in large loans provided to a relatively small number of large customers. In many cases, the credit characteristics of these

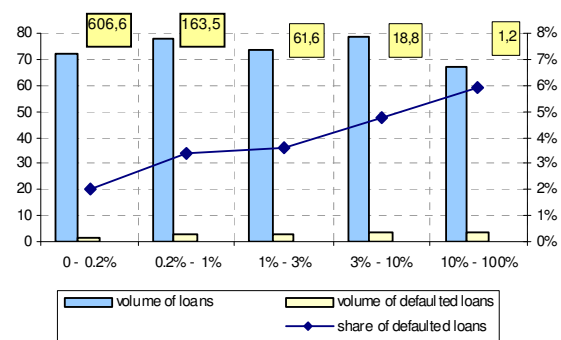
customers are not necessarily linked to the domestic business cycle, because of their state or foreign ownership.

### Credit risk related to less significant customers

The portfolios of loans to less significant customers can be characterised by increased heterogeneity and relatively big differences between the individual banks. This category still contains a large number of key customers (e.g. project financing, power engineering, transport, electronics, municipalities, etc.). Depending on the specific bank, the portfolio of loans to less significant clients differs significantly in its risk profile, as well as in quality.

This indicates that increased orientation towards key customers (without depreciation to date) does not necessarily mean a higher-quality portfolio.

**Chart 95 Defaulted loans in the portfolio of less significant customers**



- Source: NBS.
- The categories are defined as percentages of the number of loans arranged by size.
- Amounts are in billions of SKK – bar chart (left-hand axis).
- Proportions are in percentages – graph (right-hand axis).
- The numbers above the columns express the average amounts of loans in the given categories in millions of SKK.

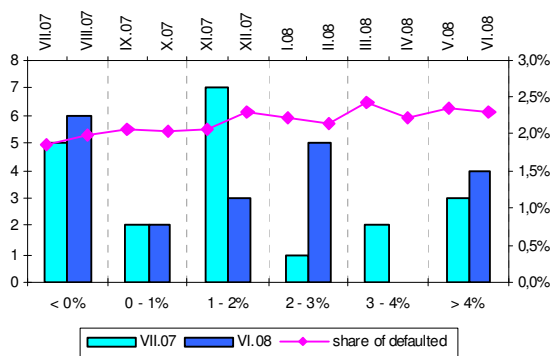
The heterogeneity of the portfolio is confirmed by the fact that the first 0.2% of the

number of loans arranged by size accounts for 20% of the total volume of loans and only 10% of the volume of defaulted loans. In general, the share of defaulted loans increases as the average amount of a loan decreases – more than a quarter of the total volume of defaulted loans is in the ‘small loans’ category (with an average amount of SKK 1.2 million), which, however, accounted for 90% of the total number.

There are different correlation coefficients between the amount and quality of loans in the individual banks.

Since the portfolio of loans to less significant customers includes almost all the defaulted loans from exposures to non-bank corporate entities, the growth in the amount and share of defaulted loans in this category over the past twelve months took place in this particular portfolio. The share of defaulted loans increased in most banks, including the five largest banks (Chart 96).

**Chart 96 Defaulted loans as a percentage of total loans by category**



- Source: NBS.
- The charts illustrates two developments:
  - o The number of banks is on the left-hand axis, the categories on the lower horizontal axis.
  - o The share of defaulted loans in total loans is on the right-hand axis, time on the upper horizontal axis.

## Credit risk sensitivity analysis in the portfolio of loans to customers

Credit risk stress testing was conducted on the basis of five scenarios:

1. Suspension of lending activity (credit crunch);
2. Provision of loans with a higher default rate;
3. Fall in the price of real estate property pledged as collateral;
4. Increase in unemployment;
5. Increase in unemployment combined with a fall in real estate prices.

Moreover, Scenario 1 and Scenario 2 were implemented in two variants<sup>23</sup>.

The Slovak economy has undergone a period of dynamic growth in recent years, when its performance was close to its full potential, and is currently entering a period during which its growth dynamics will probably weaken somewhat, though we can hardly predict the rate of this slowdown at the present time. The strong economic growth in recent years was accompanied by an expansion in bank lending, but there is a risk that, owing to the economic boom, some of these loans were provided under less prudent conditions. Along with the turning business cycle, which may negatively influence the incomes of households and the profits of companies, there is a risk of widespread default in credit repayment. A possible fall in real estate prices and the values of loan collaterals, which cannot be excluded at this moment, would increase the losses resulting from such development still further. Another negative external factor is the global financial crisis, which may cause a downturn in economic activity in euro-area countries, which will also be mirrored in the Slovak economy. These factors, coupled with the global rise in commodity prices, could exert upward pressure on inflation. A possible increase in the key

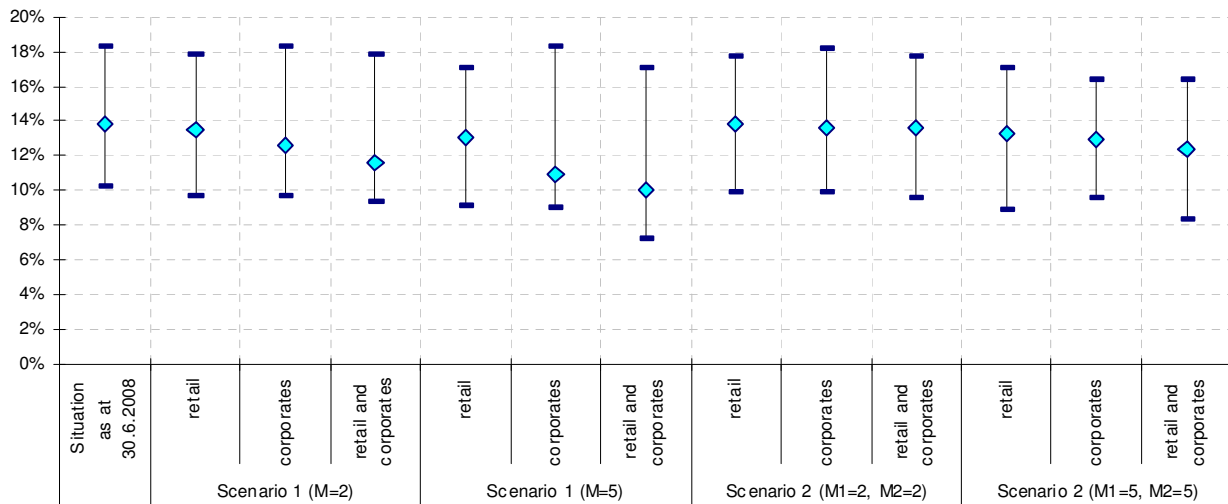
<sup>23</sup> A more detailed description of the scenarios applied is available in the Annex to the Analysis of the Slovak Financial Sector, in Part 1.



ECB interest rates would also be reflected in the level of lending rates for households, which would, under Slovak conditions (large proportion of loans with short fixation periods), mean an increase in the credit burden of households. Although the above statements are purely hypothetical, with a certain degree of probability, they signal a potential increase in the level of credit risk in the future. The

question of banking sector stability in connection with the credit quality of assets is now even more topical than in previous years. A significant instrument enabling us to predict the impact of the credit crisis to some extent is stress testing.

**Chart 97 Comparison of the effects of Scenarios 1 and 2 (Variant 1) on the distribution of capital requirements over the banking sector**



- Source: NBS, NBS calculations.
- The chart illustrates the lower quartile, median, and upper quartile of the distribution of estimated capital requirements over the sector after the application of the first variants of Scenarios 1 and 2.

The results of credit risk stress testing for the end of the first half of 2008 indicate that the sector is relatively resistant to stress. Even under really extreme conditions, the own funds of the banking sector would suffice to cover the losses from defaulted loans according to the tests. Naturally, for some of the banks, certain scenarios represented a serious interference in their solvency. A positive sign is that none of the banks proved too vulnerable to stress under all scenarios under review. Compared with the situation at the end of 2007, the sensitivity of banks to stressful situations remained virtually unchanged. The somewhat higher degree of risk

is connected with the fact that most banks reduced their ratios of own funds to risk-weighted assets over the first half of 2008, which means that they now have smaller safety cushions against possible losses.

The first scenario simulates an increase in defaulted old loans, combined with a credit crunch. The deterioration in loan portfolio quality is derived either from the historically largest increase in defaulted loans in the given bank (Variant 1) or from the existing default rates obtained from the Register of Bank Loans and Guarantees<sup>24</sup> (Variant 2), while the relevant

<sup>24</sup> Register of bank loans and guarantees.

values are further stressed by the M factor. The significance of this multiplier is different in the individual variants. While M in Variant 1 gives the number of months in which the largest increase may occur again, in Variant 2 it is interpreted as a factor of increase in the loan default rate. The impacts of versions 1 and 2 of Scenario 1 are evaluated on the basis of the results obtained for the multiplier values M=2 and M=5 respectively. While the smaller value of the parameter represents a slight but quite probable deterioration in loan portfolio quality, the second value means a situation in the event of extremely unfavourable developments in the bank.

The results of credit risk stress tests show that the most profound impact is made by Scenario 1, which is the only scenario which would significantly affect the functioning of banks or the sector as a whole. This conclusion applies to both variants of this scenario. Particularly the second variant deserves special attention; this variant is based on the annual default rates of loans in the individual banks. In terms of this indicator, no major changes occurred in the sector during the first half of 2008. Certain changes (upward or downward) were recorded in specific banks. The second variant of Scenario 1 appears to be by far the most risky. Under the more moderate version (M=2), the median value of capital requirement fell by only 3 percentage points, but seven banks recorded a fall below the level of 8%, five of them only a slight fall, but two reported a relatively sharp deterioration. Under the more extreme but rather unlikely variant (M=5), two more banks would have a capital requirement ratio below 8%. The first quartile of the distribution would thus decrease to half of its original value (10.2%). An even larger decrease (by 7 percentage points, to 6.3) would occur in the median value of this indicator. The average weighted amount of own funds would be 0.7 of a percentage point smaller than the median, which indicates that large banks would belong to the 'more affected banks' category. In three banks, the loss from defaulted loans would

exceed the value of own funds, and thus the banks' capital requirement would reach a negative figure. If we compare the actual results with an identical simulation based on data from the end of 2007, we can see the same sensitivity on average, but with a smaller spread. Despite this, the distribution of capital requirement moved to the left under the scenario applied, because the initial level of capital requirement fell in the dominant part of the sector in the first half of 2007. In addition, it is important to mention that the second variant of Scenario 1 relates to corporate loans only, so if a stressful situation occurs in relation to retail loans at the same time, this would mean a relatively serious interference in the solvency of the entire banking sector. On the other hand, the simulated situation corresponding to a fivefold increase in the default rate can be regarded as extremely unlikely. The results of the first variant appear to be more optimistic. In a situation combined with an M=2 stress factor, the fall in capital requirement would range from 1 to 2 percentage points in all banks. Under such conditions, the capital requirement of two banks would fall by approximately 6 percentage points. Using an M=5 multiplier, the median would fall by less than 4 percentage points, to 10% (still satisfactory). Two banks would be hit very seriously, for they would have to depreciate loans in an amount roughly corresponding to the volume of their own funds. In addition, the ratio of own funds to risk-weighted assets would fall below the 8% level in three more banks.

Scenario 2 represents a situation in which banks provide a large number of new loans in order to acquire a larger market share, even to less solvent customers, which results in excessive defaults in loan repayment. This scenario also had two variants and used two multipliers ( $M_1$  and  $M_2$ ). They are important for both variants.  $M_1$  expresses the relationship between the maximum share of defaulted loans in total loans in 2007 and the share of defaulted loans in new loans provided in the future.  $M_2$

serves for simulating an increase in the bank's lending activity with regard to the average values of month-on-month relative changes in the volume of loans provided during the past year. Another interpretation is the prolongation of the period during which the stress scenario will be valid. The analysis of Scenario 2, like that of Scenario 1, is based on two simulations modelling a moderate ( $M_1=2$ ,  $M_2=2$ ) and a rather unfavourable ( $M_1=5$ ,  $M_2=5$ ) trends in the credit risk indicators.

In the case of Scenario 2, only the first variant deserves full attention, because the other one had only minimal effects. Compared with Scenario 1, however, Scenario 2 also had limited effects in the first variant. Although extreme changes were simulated ( $M_1=M_2=5$ ), the new distribution shifted downwards by less than 2 percentage points in all three quartiles. Capital requirement would not fall below 7% in any of the banks, it would be below 8% in three banks only, but mainly as a result of the fact that the current value of this ratio is rather low in these banks. The sharpest fall in own funds in relation to risk-weighted assets (approximately 4.5 percentage points) would be recorded in two banks. In both cases, the main reason would be the provision of new loans in large amounts and the related increase in the capital requirement ratio's denominator.

The next stress test was designed to assess the impact of changes in real estate prices. In this case, the tests were based on detailed microeconomic data. The object was the potential impact of a fall in price of the real estate property used as collateral for the creation of additional provisions and the subsequent impact on capital requirement. The scenario was based on the assumption that unsecured loans in the individual credit categories (loans without depreciation, non-defaulted loans with depreciation, and defaulted loans) are gradually covered by provisions up to 0, 10, and 100 percent. The fall in real estate prices was set at 30% or 50%.

The test results indicate that the banking sector would be affected by this scenario to a

limited extent only, even under the more extreme version, i.e. a 50% fall in real estate prices. Capital requirement would fall by only 0.8 of a percentage point (median value). The maximum fall in the value of this ratio would not exceed 3 percentage points in the individual banks. More than one-third of the banks would be affected only marginally. The key factor behind this moderate impact is probably the low ratio of the outstanding loan to the value of collateral, mainly in the case of older loans, which means that the yield from such collateral (even after a marked depreciation) would suffice to cover a potential loss sustained in the case of default in loan repayment.

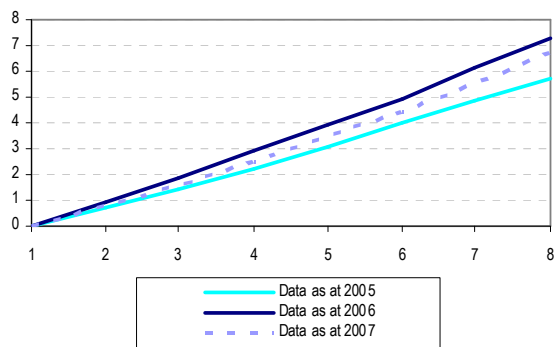
In the case of Scenario 4, the object of the test was the impact of increased unemployment on the ability of household to meet their credit liabilities. In this case, we simulated that persons who loose their jobs will receive social benefits (SKK 5,000) instead of their regular monthly incomes. These persons were randomly selected from the specimen applied, while the simulation was repeated a thousand times. The output indicator was an increase in the share of defaulted loans in the total volume of loans. The increase in unemployment was simulated only for the sector as a whole, with regard to the data available<sup>25</sup>. For that reason, the sensitivity of individual banks to the scenario cannot be assessed.

In the tested spectrum of unemployment, its marginal increase by one percentage point would, according to the simulation, cause an increase of ca. 0.5 of a percentage point in the share of defaulted loans. Compared with the scenario tested for the first half of 2007, the current curve illustrating the relation between an increase in unemployment and a change in the share of defaulted loans has a less steep slope, which means that the quality of the retail loan portfolio is less sensitive to a potential increase in unemployment.

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<sup>25</sup> The data used are from the Survey of Household Incomes and Living Conditions (EU SILC 2007), carried out by the Statistical Office.

**Chart 98 Estimated impact of increased unemployment**



- Source: Statistical Office SR, EU SILC 2005, EU SILC 2006, EU SILC 2007, NBS calculations.
- Only housing loans were included in the simulation, except building and intermediate loans.
- The horizontal axis gives the increase in the rate of unemployment in percentage points.
- The vertical axis gives the increase in the share of 'households at risk' (in percentage points), representing the number of households in which loan instalments exceed the level of disposable incomes adjusted for current expenses, in the total number of households to which loans have been provided.

The last scenario includes a combination of two macroeconomic shocks. It simulates an increase in unemployment and a fall in real estate prices in the economy. The stress scenario expects a 10 percentage point rise in the rate of unemployment, which would cause a fall in the disposable incomes of certain households, followed by an increase in the share of defaulted loans (by 4.5 percentage points). This value is from the results of simulation under the previous scenario. Further two assumptions in this scenario are a 50% fall in real estate prices and the creation of provisions for defaulted loans for the total unsecured amount (i.e. 100%).

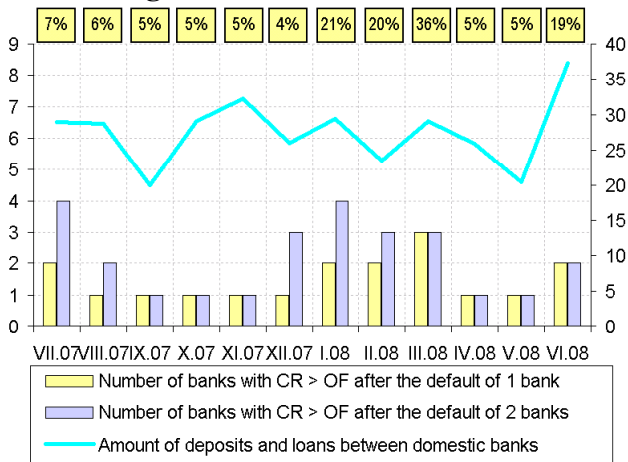
In the long term, the most sensitive reaction to this scenario is shown by the three building societies; their capital requirement is predicted to fall by 4.5 – 8 percentage points

under these conditions. With regard to the high capital requirements, such developments would not represent a serious risk for these banks. In the rest of the sector, the fall in capital requirement would not exceed 2 percentage points. The results of the scenario indicate that banks have adequate resistance to such economic developments. In their evaluation, however, it is necessary to take into account the numerous deficiencies and simplifications of the simulation compared with the real situation, since this scenario is more complex than the previous ones.

### **Credit risk sensitivity analysis in the portfolio of interbank receivables**

The sensitivity analysis of credit risk-bearing interbank deposits and loans is basically an analysis of the domestic interbank market's contagion risk. In this respect, contagion risk means the risk that a domestic bank's default may give rise to a deterioration in the situation of other banks or to their default through links existing between banks in the form of interbank deposit and credit transactions. Chart 99 illustrates the number of banks in which the capital requirement may exceed the level of own funds in the event of default in one or two banks. According to end-of-month data, the number of such banks would range from 1 to 3 in the event of default in one bank in the first half of 2008.

**Chart 99 Contagion risk and its impact on the banking sector**



- Source: NBS, NBS calculations.
- Left-hand scale: number of banks in which the capital requirement (CR) would exceed the level of own funds (OF) in the event of default in one or two banks.
- Right-hand scale: volume of deposits and loans in domestic banks in billions of SKK (end-of-month figures).
- Above the chart is the share of assets in banks in which the capital requirement would exceed the level of own funds in the event of a bank default, in the banking sector's total assets.

## Exchange rate risk

During the first half of 2008, the banking sector as a whole maintained a closed foreign exchange position. Hence, the majority of banks were not exposed to the exchange rate risk to a significant extent. This was due to the fact that banks closed their open foreign exchange positions in the balance sheet (which were mostly short positions) with currency derivatives in the off-balance sheet.

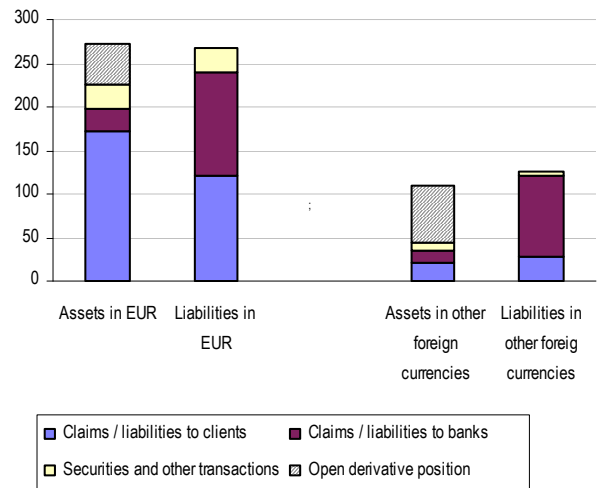
As at 30 June 2008, short open foreign exchange positions in the balance sheet accounted for 7% of the total assets. This was mainly caused by the large volume of foreign-currency deposits of foreign banks, a large part of which was invested in domestic currency in reversed repo transactions with the NBS or in bills of NBS. The volumes of foreign-currency

loans and deposits remained virtually unchanged during the first half of 2008.

Chart 100 illustrates that a large part of foreign-currency assets and liabilities (mainly in transactions with customers and in securities) is formed by euro-denominated assets and liabilities. In other foreign currencies, the open position in the balance sheet is formed by deposits in foreign banks, which are dominated by deposits in US dollars. As from 1 January 2009, the open position in the balance sheet is expected to decrease to a significant extent.

Banks closed their open foreign-exchange positions in the balance sheet by derivative transactions. Thus, the foreign-exchange position of the sector was practically closed. This applies not only to the aggregate value of the banking sector's foreign-exchange position, but also to the open positions of most banks, which were below 3% of the total assets throughout the first half of 2008.

**Chart 100 Structure of foreign-currency assets and liabilities as at 30 June 2008**

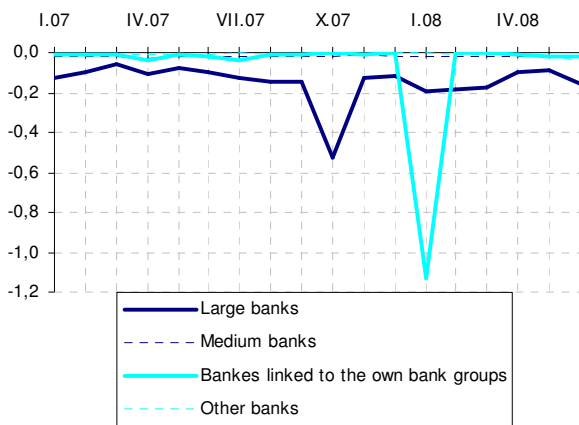


- Source: NBS.
- The data are in billions of SKK.
- FC – foreign currency.

The low sensitivity of banks to the exchange rate risk is also confirmed by the

values of VaR<sup>26</sup>, which are illustrated in Chart 101. In most banks, the end-of-month VaR ratio did not exceed 2% of the own funds in the first half of 2008.

**Chart 101 Developments in 10-day VaR (99 %) in individual bank groups**



- Source: NBS, NBS calculations.
- The data are in billions of SKK.
- The values of VaR for branches of foreign banks are not shown in the chart.
- Other banks also include building societies.
- Since January 2008, the group of banks linked to own bank groups also include ČSOB.

## Interest rate risk

The interest rate risk analysis was based on the results of tests on sensitivity to a 2 percentage point increase in the key ECB rates. We compared the impacts of the basic and stress scenarios, the presented values represent the differences between the outputs from these two scenarios. The basic scenario was based on the development of ECB interest rates as expected by the market. The stress scenario simulated a 2 percentage point increase in the ECB rates in June 2008. The methodology

<sup>26</sup> VaR (*value-at-risk*) expresses the loss which should not be exceeded with a probability of 99%. The underlying assumption is that the distribution of future changes in the market factors (exchange rates in this case) can be simulated by distributing the changes over the past year (250 working days) and that the portfolio remains unchanged for 10 days. During the calculation of VaR, only one-day losses were simulated and the figure obtained was subsequently multiplied  $\sqrt{10}$ .

applied for modelling the pass-through of ECB interest rates to euro and koruna interest rates, as well as the individual scenarios, are described in more detail in Box 5.

The impacts of individual scenarios were calculated for the interest-sensitive portfolios of banks, i.e. the portfolios of deposits and loans, securities, and interest rate derivatives. Interest income or loss from the deposit and loan portfolio is reflected in net interest income. The securities portfolio is composed of the Fair Value (FV), Hold for Trading (HFT), Available for Sale (AFS), and Held to Maturity (HTM) portfolios. The FV and HFT portfolios are revalued against profit and loss, the AFS portfolio is revalued against own funds, while the HTM portfolio is not revalued at all. Based on the statements available, the portfolio of interest rate derivatives can be divided into the trading book and the banking book. This division does not correspond to the division of the securities portfolio, hence we used the assumption that interest rate derivatives are not used for the coverage of securities that are not recorded at fair value.

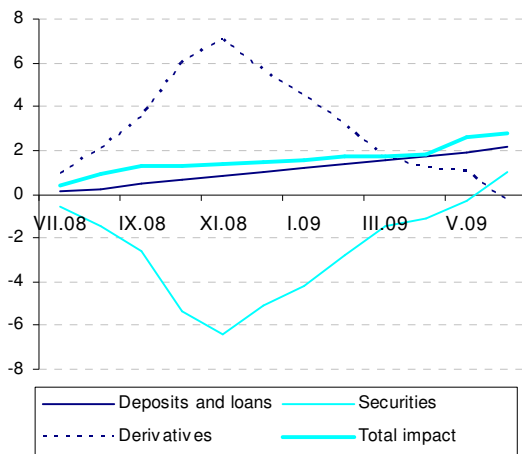
On the basis of this fact, two approaches were applied. Using the first approach, we calculated the profit or loss from the portfolio of deposits and loans, the revaluation of securities held in the FV, HFT, and AFS portfolios, profit from interest income, and a profit or loss from the revaluation of interest rate derivatives in the trading book and in the banking book in the case of a 2 percentage point increase in the key ECB interest rate, compared with the basic scenario.

The loss in the case of securities would accumulate during the first half of the period under review, after that period the impact of the shock would moderate and value of the portfolio would increase. This increase can be explained partly by the fact that interest income would exceed the revaluation loss, and partly by the moderated impact of the shock on bond rates.

The portfolio of interest rate derivatives would react to the shock differently (but

symmetrically), which indicates that these instruments serve to hedge the securities portfolio against interest rate fluctuations. After rising during the first five months, their value would fall and would become negative at the end of the period. The overall impact of an interest rate shock on the portfolio of securities and derivatives would be virtually zero for the banking sector as a whole.

**Chart 102 Impact of a key ECB interest rate increase on the banking sector (first approach)**



- Source: NBS, NBS calculations.
- The data are in billions of SKK.

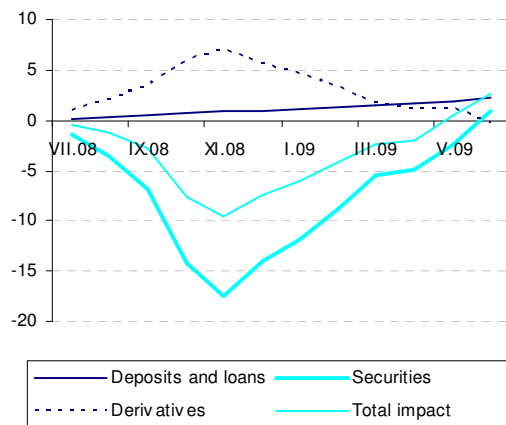
Net interest income from the portfolio of deposit and loans would increase in the sector, since lending rates would rise more rapidly than deposit rates. However, it is important to mention that, since no significant relationship was identified between changes in volumes and changes in the ECB interest rates, developments in deposits and loans during the period under review do not reflect that, in the case of an interest rate increase, the growth in lending will stop or moderate.

The second approach is based on the assumption that, in case of need, banks may sell assets from the portfolio of securities held to maturity. Hence, the revaluation of securities held in the HTM portfolio was taken into account in this case.

Owing to the large volume of securities held in the HTM portfolio, the loss from the revaluation of securities incurred during the period under review would exceed the profits from interest rate derivatives, deposits and loans, so the banking sector as a whole would record a loss. At the end of period under review, a profit would also be recorded from the securities portfolio (due to the above facts), the banking sector would therefore record a modest profit in this case.

Although from the viewpoint of the banking sector as a whole, securities are hedged against losses from revaluation and a fall in interest income, this does not apply to the individual banks without conditions.

**Chart 103 Impact of a key ECB interest rate increase on the banking sector (second approach)**



- Source: NBS, NBS calculations.
- The data are in billions of SKK.

While some of the banks had no derivatives to secure their securities portfolios, other banks recorded losses or profits from derivatives in excess of the profits or losses from securities.

Although most banks would record a profit at the end of the period under review, they would suffer a loss at the end of the first half of the year.

### Box 5 Modelling the pass-through of changes in key ECB interest rates to other interest rates in SKK and EUR

In modelling interest rate developments, we used two scenarios based on the assumption that the key NBS interest rates will copy the ECB rates and Slovak interbank rates will follow the course of the EURIBOR rates, while the levels of BRIBOR and EURIBOR rates will converge and, after 1 January 2009, their fluctuations and reactions to changes in the market conditions will be identical.

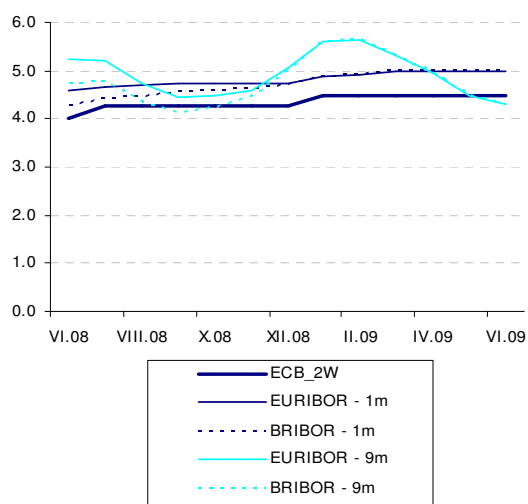
The basic scenario expected an increase in the ECB interest rates to 4.5% p.a. (by 0.25 of a percentage point) as at 1 January 2009. This scenario was based on the previous course of this rate and the shape of the EURIBOR interest rate curves in the middle of the year. Under the stress scenario, the key ECB rates were expected to be raised by 2 percentage points, compared with the basic scenario.

In the basic scenario, short-term rates changed only slightly, while the interest rate differential between the interbank rates and the ECB rates remained unchanged. Long-term rates rose after the change in the ECB rates, then modified their excessive reaction.

During the simulated period, bond rates fluctuated at roughly the same levels; after the change in the key rates, a certain correction took place in their levels, because these rates had already risen before the increase in the key ECB rates, for the change had been expected by the market.

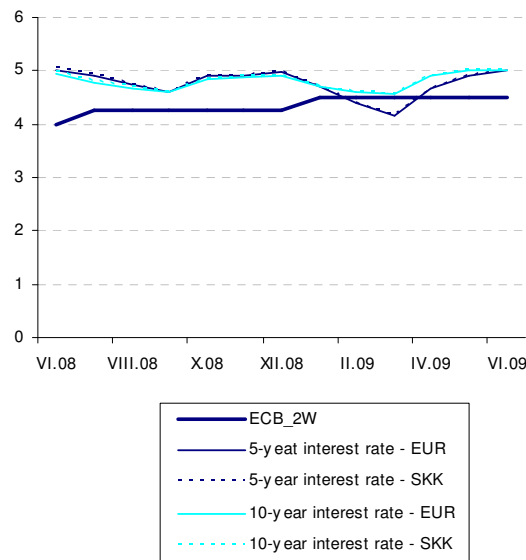
Under the stress scenario, the rates reacted to the changes in the ECB rates in a similar way as under the basic scenario. Short-term rates increased, while the interest rate differential remained virtually unchanged over the period under review. Long-term rates reacted to the increase in larger measure, but they subsequently changed slightly. At the end of the period under review, the rates showed a slightly falling tendency, hence a further upward correction can be expected if the stress period is prolonged.

**Chart 104 Interbank market rates – basic scenario**



- Source: NBS, NBS calculations.
- The data on changes in the legend represent a simulated change.

**Chart 105 Bond rates – basic scenario**

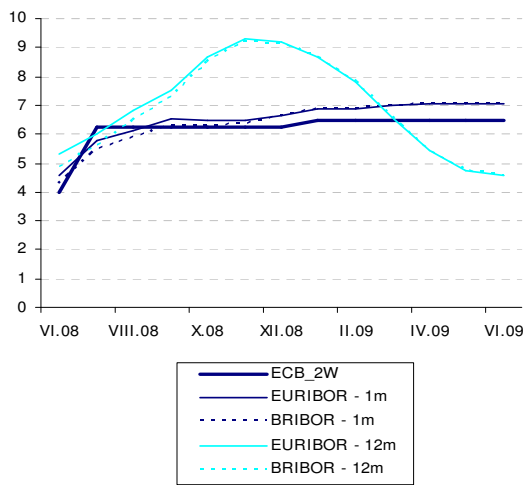


- Source: NBS, NBS calculations.
- The data on changes in the legend represent a simulated change.



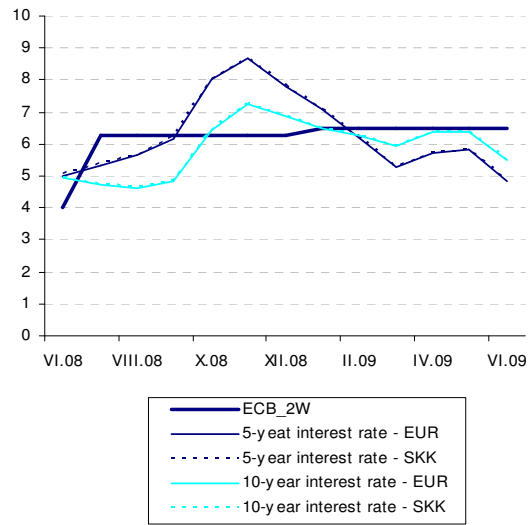
In the basic scenario, customer interest rates rose only slightly, which was the result of an incomplete pass-through of changes in the key ECB and NBS rates to these rates. Under the stress scenario, the rates increased relatively smoothly and, after slightly excessive reactions, they modified their course to some extent. Interest levels stabilised at the end of period under review, corporate deposit rates reflected the changes in the key rates in larger measure than household deposit rates. Interest rates on household loans showed no significant relationship with the NBS rates, nor with the interbank rates; they steadily increased over the period under review.

**Chart 106 Interbank market rates – stress scenario**



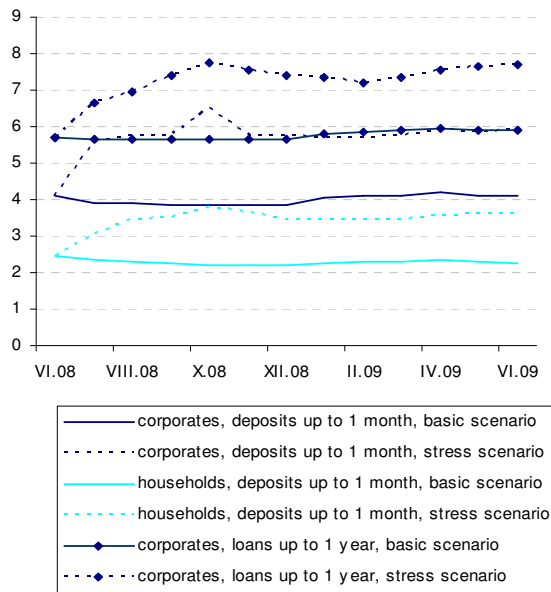
- Source: NBS, NBS calculations.
- The data on changes in the legend represent a simulated change.

**Chart 107 Bond rates – stress scenario**



- Source: NBS, NBS calculations.
- The data on changes in the legend represent a simulated change.

**Chart 108 Estimated developments in lending and deposit rates**



- Source: NBS, NBS calculations.
- The data on changes in the legend represent a simulated change.

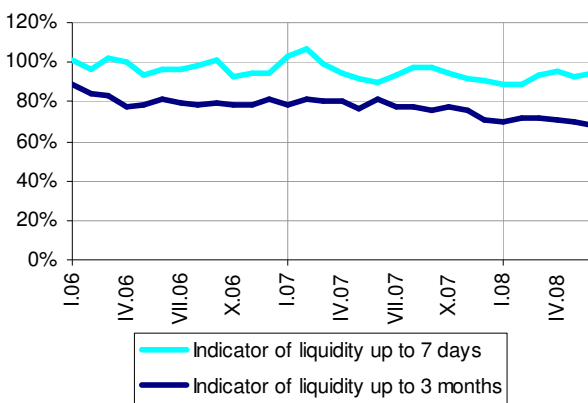
## Liquidity risk

### Liquidity risk from a short term perspective

The goal of a liquidity analysis from the short-term perspective is to assess whether banks have sufficient liquid assets (mainly assets in reversed repo transactions with the NBS, government bonds, Treasury bills, and assets with short residual maturities) in comparison to the volume of liabilities (mainly deposits from banks and customers) with short residual maturities. To this end, we monitored the ratio of liquid assets with a residual maturity of up to 7 days (up to 3 months) to liabilities with a residual maturity of up to 7 days (up to 3 months). During the first half of 2008, the median of the first indicator fluctuated at a satisfactory level (89% to 95%), the median of the second indicator was somewhat lower. To maintain a good liquidity position, it is vital for banks to have a stable deposit portfolio.

In the banking sector as a whole, the short-term liquidity situation did not deteriorate over the first half of 2008.

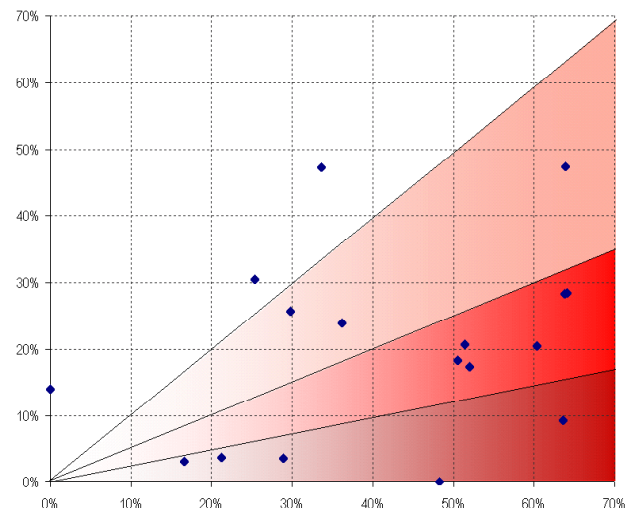
**Chart 109 Liquidity ratios (median values)**



- Source: NBS.
- The chart does not include branches of foreign banks with a market share of less than 2% of the sector's total assets.

To maintain a good liquidity position over a time horizon of up to 3 months, it is necessary for banks to keep part of the deposits at the bank for a period longer than their actual maturity. However, a comparison of the liquid cushion<sup>27</sup> and the open position for up to 3 months<sup>28</sup> in relation to total assets (Chart 110) indicates that the significance of this condition differs in the individual banks.

**Chart 110 Comparison of the liquid cushion and the open position from transactions with customers (up to 3 months)**



- Source: NBS.
- The chart does not cover branches of foreign banks with a market share of less than 1% of the sector's total assets.

<sup>27</sup> Liquidity cushion is defined as the sum of cash at hand, government bonds, SR Treasury bills, NBS bills, deposits at the NBS and on current accounts at other banks, excluding the liabilities of banks to foreign banks (except for long-term liabilities) and ARDAL, and assets provided as advances.

<sup>28</sup> Open position up to 3 months is the difference between the sum of liabilities to customers and issued securities with a residual maturity of up to 3 months and the sum of receivables from customers and debt securities issued by banks and enterprises with a residual maturity of up to 3 months.

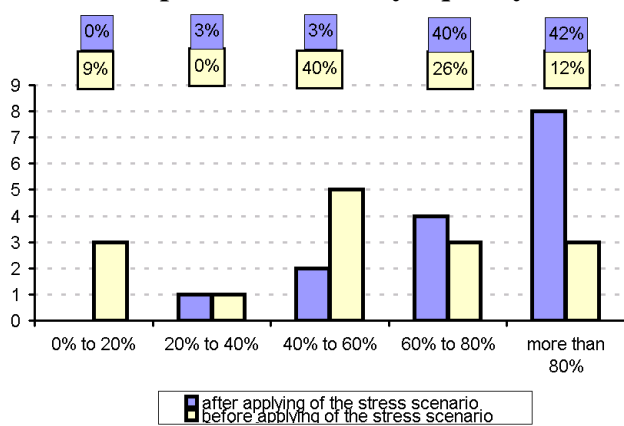
- The horizontal axis gives the share of open position from transactions with clients (up to 3 months) in total assets.
- The vertical axis shows the share of liquid assets in total assets.

For the analysis of sensitivity to liquidity risk in the individual banks, two basic scenarios were selected:

- a 20% decline in the volume of deposits from customer;
- a 90% decline in the volume deposits from foreign banks.

If 20% of the customer deposits were withdrawn, the median value of the 7-day liquidity ratio would fall from 95% to 71% and the median value of the 3-month liquidity ratio from 68% to 61%. All banks would have sufficient liquid assets to cover the outflow in deposits.

**Chart 111 Impact of a 20% decline in customer deposits on the 7-day liquidity ratio**

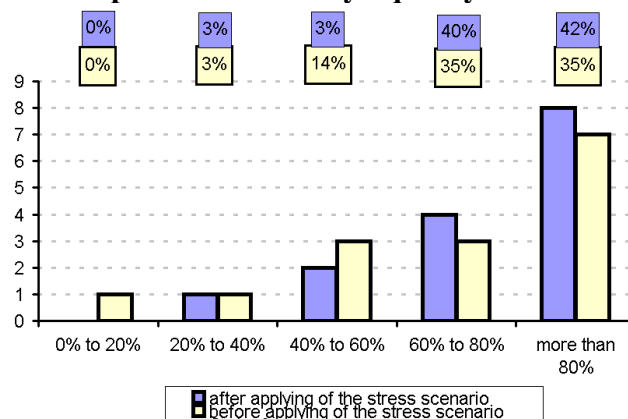


- Source: NBS, NBS calculations.
- Branches of foreign banks and SZRB are not included in the chart.

The withdrawal of 90% of the non-resident bank deposits would seriously affect the smaller branches of foreign banks. Other banks would be affected to a lesser extent compared with the previous scenario, the lowest liquidity ratios would be recorded by banks that are dependent on the interbank market. The median value of the

7-day liquidity ratio would fall to 67% and that of the 3-month liquidity ratio to 60%.

**Chart 112 Impact of a 90% decline in foreign bank deposits on the 7-day liquidity ratio**

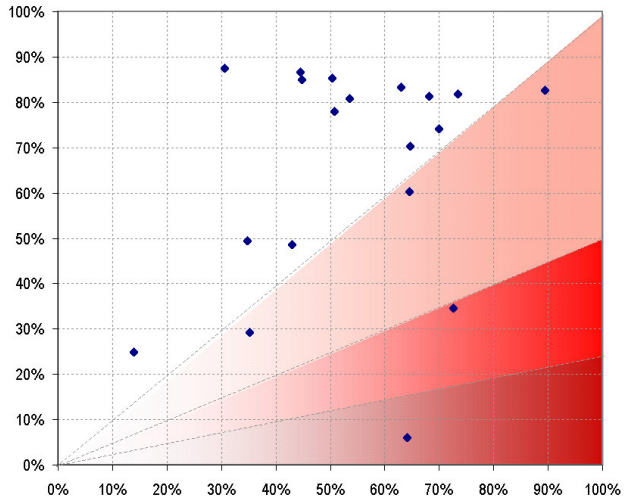


- Source: NBS, NBS calculations.
- Branches of foreign banks and SZRB are not included in the chart.

### Liquidity risk from a long-term perspective

From a long-term perspective, an important fact in connection with the sustainability of bank lending is that most banks finance this activity from customer deposits or issues of long-term securities, rather than from short-term interbank market instruments. In numerous banks, however, the ratio of loans to deposits and issued securities show an increasing tendency. Within the banking sector as a whole, this ratio increased over the first half of 2008, from 69% to 74%.

**Chart 113 Comparison of the ratio of loans to total assets with the ratio of deposits and issued securities to total assets**



- Source: NBS.
- The chart does not include branches of foreign banks with a market share of less than 1% of the sector's total assets.
- The horizontal axis gives loans to customers as a percentage of total assets.
- The vertical axis gives deposits received from customers and issued securities as a percentage of total assets.

## Insurance companies

The most serious risk to which insurance companies are exposed is the insurance risk. In addition, insurance companies are exposed to market risks, which may cause an unexpected fall in the value of assets used as coverage for technical provisions. Since we did not have enough data for a detailed analysis of the exposures of insurance companies to insurance risks, we focused on the effects of market risks in this analysis.

During the analysis, we took into account all assets that are exposed to a risk for insurance companies, including assets that are not used as coverage for technical provisions, nor for the guarantee fund. The analysis does not deal with the risk, to which assets invested on behalf of the insured or technical reserves passed to reinsurers are exposed, since the insurance company takes no risk from these assets.

In most insurance companies, the market risk that may have a direct impact on the financial results, is virtually negligible. This is due to the fact that most insurance companies have closed foreign exchange positions, investments in shares and mutual fund certificates revalued to fair value against profit and loss account for only 0.8% of the assets (not more than 6% of the assets in any insurance company) and investments in debt securities revalued to fair value against profit and loss for only 2.7% of the assets. The losses resulting from market risks would not exceed 0.3% of the assets for ten days (with a probability of 99%) in most insurance companies.

It is, however, important enough to mention that the values of assets in numerous insurance companies are exposed to interest rate changes, because a large part of these assets is formed by debt securities, with a relatively long duration (in some of the insurance companies). These securities are not revalued to fair value against profit and loss. A possible change in interest

rates would cause only a gradual decrease in interest income. Some of the insurance companies hold shares and participation certificates in the portfolio of financial instruments for sale, which are revalued to fair value against own funds. The ratio of these securities to assets is below 5% in most insurance companies.

**Table 10 Exposure of insurance companies' assets to market risks**

	Minimum	Median	Maximum
1 Equity risk	0.0 %	0.0 %	0.3 %
2 Exchange rate risk	0.0 %	0.0 %	1.4 %
3 Interest rate risk	0.0 %	0.0 %	3.4 %
4 <b>Total risk</b>	0.0 %	0.1 %	3.4 %
5 Equity risk to the portfolio of shares	0.0 %	2.8 %	11.1 %
6 Interest rate risk to the portfolio of debt securities	0.7 %	2.0 %	3.1 %

- Source: NBS, REUTERS, BLOOMBERG.
- The values in the table give VaR (with a probability of 99%, on the assumption that the portfolio will remain unchanged for 10 days) in relation to the value of assets (lines 1 to 4), or the portfolio of shares (line 5) or debt securities (line 6).
- Assets invested on behalf of the insured were not taken into account in the calculations, nor assets corresponding to share of reinsurers in technical provisions, since the risks involved in these assets are not borne by the insurance company.
- For the interest rate risk, taken into account were only financial instruments the revaluation of which would have a direct impact on the financial results.

## The funds of pension management companies

Conservative funds have neither shares nor mutual fund certificates in their portfolios, nor open positions in foreign currency. Hence, they are only exposed to the interest rate risk, the risk of change in bond yields owing to a deterioration in the debtor's credit quality or losses resulting from credit risks. Interest rate risk is relatively low, since the assets in these funds are formed in large part by bonds denominated in domestic currency with a short duration or accounts with a fixation period of up to 2 weeks. During ten working days<sup>29</sup>, the actual value of a pension unit should not fall as a result of the interest rate risk by more than 0.5%, with a probability of 99%. The share of bonds in the portfolios of individual conservative funds is 50% to 80%. In terms of credit risk, the pension funds are exposed to credit quality deterioration and/or bank defaults, mostly among European and, to some extent, American financial institutions. A real threat would be the default of numerous foreign financial institutions as a result of a significant increase in the degree of contagion risk in the global financial markets.

Compared with the end of 2007, the level of risk faced by conservative funds rose somewhat. This can be ascribed to an increase in the volatility of domestic interest rates over the first half of 2008 and an increase in the share of bonds to the total net value of assets in the individual conservative funds.

The risks faced by balanced and growth funds fell considerably over the first half of 2008. This was caused by a fall in the level of equity risk, which is the most significant risk for balanced and growth funds, owing to a

decrease in the portfolio of shares in percentage terms. At the same time, the risk involved in share portfolios also dropped.

The ratio of VaR for interest rate risk to NAV in the majority of pension management companies is comparable with the same ratio in conservative funds. This means that interest rate risk is at a relatively low level. Balanced and growth funds would not be affected significantly, even by a change in exchange rates. Their foreign exchange positions resulting mainly from investment in foreign shares and mutual fund certificates are closed in large part. It is, however, important to take into account that the open positions are in large part euro positions, where it is possible to assume that the actual risk is currently lower than the risk estimated on the basis of data from the past year.

Like conservative funds, balanced and growth funds are exposed to credit risk, mainly through the major European and American financial institutions.

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<sup>29</sup> Ten working days is the standard time horizon used in VaR calculation, so that the individual types of institutions can be compared. It is, however, necessary to take into account that investments in pension funds are long-term investments. This is also taken into account during stress testing, where a time horizon of 1 year is used.

**Table 11 Exposure of pension funds to risks**

	Conservative funds			Balanced funds			Growth funds		
	Minimum	Median	Maximum	Minimum	Median	Maximum	Minimum	Median	Maximum
1 Equity risk	0.0 %	0.0 %	0.0 %	0.4 %	0.5 %	0.8 %	0.6 %	0.6 %	0.9 %
2 Interest rate risk	0.1 %	0.3 %	0.4 %	0.2 %	0.3 %	0.5 %	0.2 %	0.3 %	0.4 %
3 Exchange rate risk	0.0 %	0.0 %	0.0 %	0.0 %	0.1 %	0.6 %	0.0 %	0.1 %	0.6 %
<b>4 Total risk</b>	<b>0.1 %</b>	<b>0.3 %</b>	<b>0.4 %</b>	<b>0.4 %</b>	<b>0.5 %</b>	<b>1.0 %</b>	<b>0.6 %</b>	<b>0.6 %</b>	<b>1.1 %</b>
5 Equity risk to the portfolio of shares				2.0 %	3.9 %	4.6 %	1.9 %	3.9 %	4.2 %
6 Interest rate risk to the portfolio of debt securities	0.3 %	0.4 %	0.8 %	0.4 %	0.5 %	0.9 %	0.5 %	0.5 %	0.9 %

- Source: NBS, REUTERS, BLOOMBERG, NBS calculations.
- The values in the table give VaR (with a probability of 99%, on the assumption that the portfolio will remain unchanged for 10 days) in relation to NAV (lines 1 to 4), or the portfolio of shares (line 5) or debt securities (line 6).
- For the interest rate risk, the risk resulting from the fixation of term deposits was not taken into account.

## The funds of supplementary pension management companies

Like the funds of pension management companies, the funds of supplementary pension management companies are exposed mostly to market risks. During the first half of 2008, the risk exposure of the funds with the largest market share remained virtually unchanged. This was mainly the result of a decrease in the share of investments exposed to interest rate and equity risks.

In the largest contributory funds, the level of risk was relatively low. Performance is not likely to fall in the course of ten days by more than 1 percentage point, with a probability of 99%.

Payment funds hold their resources almost exclusively on current or fixed-term accounts.

Overall, among the funds of supplementary pension management companies, contributory funds investing in large measure in shares and participation certificates appear to be the most risky. Their market share is, however, relatively small. These funds are also exposed to a high degree of exchange rate risk.

**Table 12 Exposure of contributory pension funds to risks**

	Lower quartile	Median	Upper quartile
Equity risk	0.0	0.1	0.2
Interest rate risk	0.0	0.4	0.6
Exchange rate risk	0.1	0.2	0.5
<b>Total risk</b>	0.3	0.6	0.9
Equity risk to the portfolio of shares	2.5	3.6	4.6
Interest rate risk to the portfolio of securities	0.6	0.7	1.1

- Source: NBS, REUTERS, BLOOMBERG, NBS calculations.
- The values in the table give VaR (with a probability of 99%, on the assumption that the portfolio will remain unchanged for 10 days) in relation to NAV (lines 1 to 4), or the portfolio of shares (line 5) or debt securities (line 6).

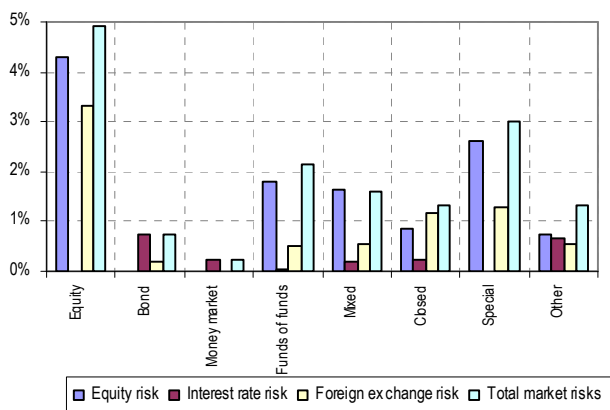


## Collective investment

Mutual funds are exposed first and foremost to exchange rate and equity risks. Exchange rate risk arises from the fact that mutual funds usually have unsecured foreign exchange positions in connection with investment in securities denominated in foreign currency. After the entry of Slovakia into the euro area, however, the degree of this risk is expected to decrease, because more than half of the open foreign exchange positions of mutual funds are denominated in euro. After the euro changeover, mutual funds will be exposed to the risk of exchange rate changes against the US dollar, the Czech koruna, the Polish zloty, and the Hungarian forint.

The degree of exposure to equity risk is relatively high, though it decreased somewhat over the first half of the year. In the case of equity funds, the loss incurred in the course of ten days may exceed 4% of NAV, with a probability of 1%.

**Chart 114 Distribution of the ratio of VaR to NAV**



- Source: NBS, REUTERS, BLOOMBERG, NBS calculations.

Exposure to interest rates risk is relatively low, even in funds with a larger proportion of

bonds in portfolio. The VaR for interest rate risk does not exceed 1% of NAV in any of the mutual funds. There are only three exemptions. In most funds, the fair value of securities would not be affected significantly in the event of an unexpected change in interest rates.

The analysis indicates that most assets held in mutual funds (69%) have a VaR at the level of 1% of NAV, which means that mutual funds invest mostly in low-risk assets, mainly in short-term bank deposits and bonds with a short duration. This is due to the fact that half of the assets are concentrated in money market funds and further 13% in bond funds, in which VaR usually fluctuates below 1% of NAV. Compared with the end of 2007, the share of assets invested in low-risk funds (with a VaR not exceeding 1% of the net asset value) increased.

The highest risk is faced by equity and special funds, whose share in total NAV is 5%.

**Table 13 Exposure of mutual funds to risks**

	VaR 0% -1% NAV	VaR 1% -3% NAV	VaR 3%-6% NAV	VaR 6% -8% NAV	VaR 8%- 15% NAV	Share in total assets
Equity	2 %	1 %	90 %	0 %	7 %	4 %
Bond	81 %	17 %	2 %	1 %	0 %	13 %
Money market	100 %	0 %	0 %	0 %	0 %	50 %
Funds of funds	3 %	95 %	2 %	0 %	0 %	14 %
Mixed	33 %	49 %	18 %	0 %	0 %	4 %
Closed	6 %	94 %	0 %	0 %	0 %	1 %
Special	0 %	0 %	100 %	0 %	0 %	1 %
Other	4 %	96 %	0 %	0 %	0 %	10 %
Total June 2008	<b>69 %</b>	<b>25 %</b>	<b>6 %</b>	<b>0 %</b>	<b>0 %</b>	
Total Dec. 2007	64 %	21 %	10 %	1 %	4 %	

- Source: NBS, REUTERS, BLOOMBERG, NBS calculations.

- The NAV of mutual funds with a corresponding VaR value in relation to total NAV in the given group of funds.

## 7. Macro stress testing

*The capacity of the Slovak financial sector to absorb shocks was tested under two macroeconomic scenarios simulating mainly external shocks. The simulation included a slowdown in economic activity in Slovakia and abroad, accompanied by an increase in the number of defaulted loans, the level of inflation and interest rates, coupled with a marked fall in share and real estate prices. For banks, this scenario would mean losses, mainly as a result of deterioration in the quality of corporate loans. Credit risk related to households and market risks would have serious consequences in a few banks only. Pension funds and mutual funds would be mostly affected by a decline in equity markets; mutual funds investing in American shares are also likely to be exposed to the exchange rate risk. Owing to the expected restrictive anti-inflationary monetary policy of the ECB, however, interest income would increase from bank deposits and securities, which would partly offset the fall in asset prices. The share of markedly depreciated assets would not be significant, because approximately three-quarters of the investments in mutual funds are invested in a relatively conservative manner in money market funds and/or in bond funds. Conservative pension funds and insurance companies would suffer virtually no losses on account of market risks.*

### **Description of the stress scenarios applied**

Stress testing is designed to assess the financial sector's capacity to overcome various shocks, which occur in the course of business activity with various degrees of probability. The sector's reactions to stressful situations can be assessed on the basis of sensitivity tests, i.e. tests of reactions to a deterioration in a specific risk factor (e.g. the impact of an interest rate increase on a bank's capital), or on the basis of complex stress scenarios, where several risk factors are expected to change at the same time (e.g. the scenario of an economic decline, coupled with a rise in interest levels, unemployment, and an increase in the volume of defaulted loans). In this part of the analysis, we try to evaluate the impacts of the individual scenarios, while the results of tests on the sensitivity of banks to changes in individual risk factors are used mainly to identify the causes behind these impacts. The main advantage of the stress scenarios over the simple sensitivity tests is their comprehensiveness. Changes in the economy or the financial sector never take place separately, but always in combination. Similarly, stressful situations are simulated in the form of stress scenarios. With regard to the current situation

in the financial sector and in the real economy, we expect various changes in the risk factors. From the viewpoint of banks, the changes in risk factors usually have a negative tendency, since we are interested in the sensitivity of banks to negative situations.

An important feature of such stress scenarios is the maintenance of a certain degree of probability. Although probability is impossible to quantify exactly, the given figures are intended to express the probability of future changes in the risk factors.

The settings of the scenarios applied in the analysis for the first half of 2008 were in large part influenced by the ongoing financial crisis, which is differently reflected in the individual economies. Although in several parts of the analysis we do state that the crisis has not yet affected the Slovak financial sector to a significant extent, its impact will be felt in the financial sector sooner or later, in some measure.

It is very difficult to define a scenario for further developments in the financial markets and the economy as a whole. Relations within the financial markets have become much more complicated in recent years (mainly due to the use of various derivatives), and there is increased interdependence at national and

supranational levels. This greatly complicates the design of an appropriate scenario.

Hence, the stress scenarios applied express two possible courses of future development. These scenarios differ in the degree of seriousness for the banking sector. There are certainly much more possible scenarios, but we used only two versions for the purposes of this analysis. The first scenario expects that the crisis will have a moderate impact, followed by relatively rapid recovery, while the second version predicts a relatively extreme and long-term impact on the domestic economy.

**Table 14 Stress scenarios**

	Moderate version	Extreme version
GDP growth	3.2%	-0.6%
Inflation	10.9%	18.1%
ECB interest rate	6.5%	6.5%
Decline in equity markets	20%	40%
Appreciation of EUR/USD rate	10%	15%
Defaulted loans - households	6.8%	10.1%
Defaulted loans - enterprises	9.5%	17.1%

- Source: NBS, NBS calculations.
- The values of indicators express a situation simulated for June 2009.
- The scenarios expect a gradual deterioration in the values of indicators during the year.

### Scenario 1

This scenario assumes that the domestic economy will be affected by the current crisis only moderately. The current GDP decline recorded in numerous EU countries will come to a halt. GDP is expected to grow again from the second quarter of 2009. The Slovak economy will also record a slowdown, the year-on-year rate of GDP growth is assumed to fall to 3%. Overall, economic sentiment will decline, as well as investment and the willingness of households to incur debt.

The scenario also expects a rise in inflation to 11% (inflation fuelled by energy prices, food prices, and demand factors) and a 2 percentage point increase in the key ECB interest rates. As a result of a rise in euro interest rates, the euro is expected to strengthen, as well as the Slovak

koruna, against the US dollar and the Japanese yen (by 10% and 4% respectively).<sup>30</sup>

The prices of assets will continue falling, while share issues are expected to fall by 20%. There will be certain changes in the commercial real estate market. Commercial real estate prices are expected to fall and the volume of defaulted loans provided for commercial real estate purchases to grow (the ratio of defaulted loans to total loans for commercial real estate purchases will reach 25%). The ratio of defaulted loans to the total volume of loans will also increase in the case of loans to domestic enterprises (15%) and selected foreign companies, mainly in the construction sector (5% to 10%). Such increases in defaulted loans were simulated only for the key customers of banks<sup>31</sup>. In the case of loans to less significant customers, we expected a twofold increase in defaulted loans or, if the volume of defaulted loans was zero, an increase corresponding to the average figure for defaulted loans in the group of key customers. Overall, the ratio of defaulted loans to total loans in the corporate sector is expected to increase to almost 8%. Households are also expected to have problems with loan repayment<sup>32</sup>. Defaulted loans in this

<sup>30</sup> The exchange rates of the euro against other currencies were also incorporated in the stress scenario, though the simulated exchange rate changes were relatively small. These changes were based on the estimated correlations and variations in the individual exchange rates in periods of increased volatility.

<sup>31</sup> The data on legal entities are from the database of the Register of Bank Loans and Guarantees. The stress test was carried out on a specimen of selected legal entities. The specimen contained loans to legal entities, except for domestic bank groups. Then loans to the most significant clients were identified (e.g. Slovenské elektrárne, Kia, J&T, etc.) and loans of over SKK 1 billion, according to the outstanding amounts. This group is called 'loans to key customers'. The remaining loans were 'loans to less significant customers'.

<sup>32</sup> Credit risk to households was estimated on the basis of historical data on the volume of total loans and defaulted loans in the household sector. To quantify the impact of macroeconomic shocks, we used a VaR model with sign restrictions, which contained not only these two time series, but also inflation, GDP, and unemployment

sector will grow in volume by more than 120% and their share in total credit to households will reach 6.8%.

increase by 7 percentage points), but to a lesser extent as in the case of companies.

## **Scenario 2**

Scenario 2, i.e. worst-case scenario, expects an extreme deterioration in the economic situation. This scenario is based on the assumption that the current financial crisis will have a long-term negative impact on the global economy. This will also be reflected in the domestic economy, which will fall into recession. The year-on-year rate of GDP growth will fall to  $-0.6\%$  (as at 30 June 2009). There will be a period of stagflation, i.e. decline in GDP accompanied by rising inflation (by 14 percentage points). The ECB will react by increasing its key interest rates, by 2.5 percentage points during 2009. The euro is expected to strengthen in relation to the dollar (by 15%), the yen (by 5%), and the pound sterling (by 3%).

There will be a sharp decline in equity markets (by 40% during the year) and in real estate prices.

The banking sector will be negatively affected by an increase in defaulted loans in the corporate sector. In the case of key customers, the ratio of defaulted loans provided for commercial real estate purchases to total loans will increase by 50 percentage points; in the case of domestic companies by 25 percentage points; and in the case of foreign investors, the increase in the share of defaulted loans will range from 5 to 20 percentage points depending on the sector. In the group of less significant customers, the volume of defaulted loans is expected to increase threefold or, like under the first scenario, if the volume of defaulted loans is zero, by the same amount as in the group of key customers. Thus, the share of defaulted loans in the corporate sector as a whole will reach 14.2%. Defaulted loans will also grow in volume in the household sector (their share will

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as endogenous variables and the base rate of the NBS (ECB) as an exogenous variable.

## Results of stress testing

**Table 15 Impacts of the macroeconomic scenarios applied**

	Scenario 1				Scenario 2			
	Average weighted by the amount of assets	Lower quartile	Median	Upper quartile	Average weighted by the amount of assets	Lower quartile	Median	Upper quartile
<b>Banks</b>	-2	-2	-2	-1	-4	-6	-4	-3
<b>Insurance companies</b>	0	0	0	1	0	0	0	1
<b>Pension funds</b>	-3	-2	-2	1	-7	-6	-5	1
of which: conservative funds	2	1	1	2	2	1	1	2
balanced funds	-2	-2	-2	-2	-6	-6	-5	-4
growth funds	-4	-3	-3	-2	-8	-7	-6	-5
<b>Supplementary pension funds</b>	0	-1	0	0	-1	-2	0	0
<b>Mutual funds</b>	-3	-8	-3	-1	-6	-16	-8	-4
of which: equity funds	-16	-22	-17	-7	-25	-41	-35	-15
bond funds	0	-1	0	0	-1	-1	-1	0
mixed funds	-8	-10	-5	-4	-15	-20	-10	-9
funds of funds	-14	-15	-13	-9	-29	-32	-28	-20

- Source: NBS, NBS calculations.
- The table summarises the quartiles of the ratio of profit or loss to assets as a result of the relevant scenario.
- The values are in percentages, a negative value denotes a loss.

### Banks

Under the macroeconomic scenario described above, the banking sector would suffer losses in the total amount of 2% of the assets (27% of the own funds) according to the moderate version, or 4% of the assets (58% of the own funds) according to the extreme version. This means that the banking sector would probably be unable to cover the losses from its annual profits (even under the moderate version), and its own funds would fall below the required level (capital requirement). Under the extreme version, the value of own funds would fall

below the required level in a relatively large number of banks.

The largest losses under the described macroeconomic scenarios would be suffered by banks on account of a deterioration in the corporate loan portfolio. Losses from household loans would be less significant.

The smallest losses would result from market risks. Interest rate risk stemming from an probable increase in the key ECB rates (by 2 percentage points) would cause a marked decrease in the ratio of own funds to the capital requirement only in the group of building societies. Equity risks would be faced by two banks.

**Table 16 Impacts of macroeconomic scenarios on the banking sector**

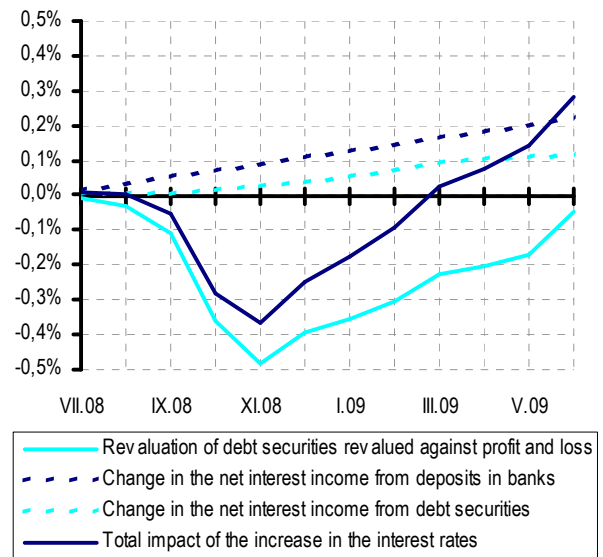
	Ratio of OF to CR as at 30 June 2008	Ratio of OF increased by profit to CR as at 30 June 2008	Scenario 1			Scenario 2				
			Ratio of OF to CR under the scenario	Change in the ratio of OF to CR due to risks			Ratio of OF to CR under the scenario	Change in the ratio of OF to CR due to risks		
				Corporate credit risk	Household credit risk	Market risks in total		Corporate credit risk	Household credit risk	Market risks in total
Lower quartile	1.3	1.4	0.9	-0.5	-0.1	0.0	0.5	-1.1	-0.1	0.0
Median	1.7	1.9	1.2	-0.4	0.0	0.0	0.7	-0.7	-0.1	0.0
Upper quartile	2.3	2.4	2.2	-0.2	0.0	0.1	1.9	-0.4	0.0	0.1

- Source: NBS, REUTERS, BLOOMBERG, NBS calculations.
- OF denotes own funds
- CR denotes capital requirements.

## Insurance companies

The impacts of the described macroeconomic scenarios on the insurance sector were evaluated only in terms of market risks; insurance risks were not taken into account due to a lack of data. The estimated impacts of these scenarios indicate that most insurance companies would achieve profits under such macroeconomic conditions. This can be explained by an increase in net interest income from debt securities and bank deposits (by 0.3% of the assets). Although insurance companies incur losses during the year in connection with the revaluation of debt securities to fair value, these losses are not too big since only a relatively small part of such securities is held in the portfolio of securities revalued to fair value against profit and loss.

**Chart 115 Impact of a 2 percentage point increase in key ECB interest rates on the insurance sector**

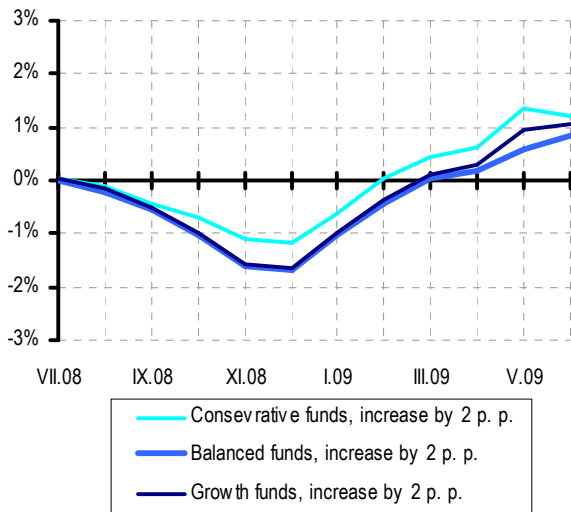


- Source: NBS, REUTERS, NBS calculations.
- The data on the vertical axis express the ratio of profit/loss to the value of assets, excluding assets invested on behalf of the insured and assets transferred to reinsurers.

Under the macroeconomic scenarios applied, losses would only be suffered by insurance companies which have invested a large amount of assets in shares or mutual fund certificates. The portfolios of insurance companies would not be sensitive to the expected weakening of the dollar against the euro.

## The funds of pension management and supplementary pension management companies

**Chart 116 Impact of a 2 percentage point increase in key ECB interest rates on the funds of pension management companies**

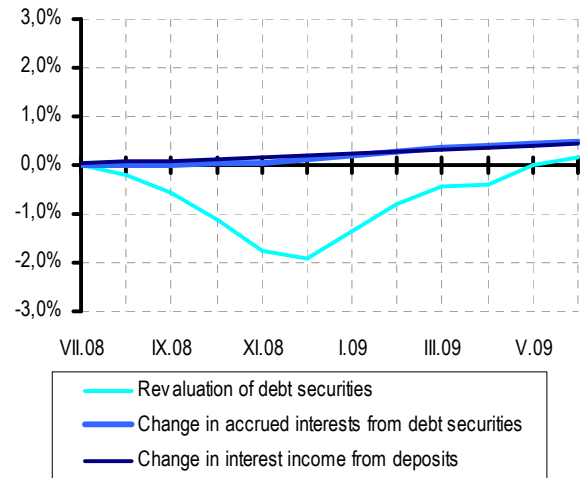


- Source: NBS, REUTERS, NBS calculations.
- The data on the vertical axis express the ratio of profit/loss to the net value of assets.
- The impact includes a change in interest income from deposits at banks.

For the funds of pension management companies, the scenarios applied would cause an increase in interest income from debt securities and bank deposits, and a fall in the prices of shares of participation certificates (in funds investing in such securities). In the case of a 2 percentage point increase in the key ECB interest rates, profits are expected to increase by 1.0% to 2.9% of NAV in conservative funds, and by 0.5% to 1.2% of NAV in the other funds. Such changes will mainly be caused by net interest income. The change in income resulting from the revaluation of debt securities will be negligible.

**Chart 117 Impact of a 2 percentage point increase in key ECB interest rates on the**

## funds of pension management companies (structure)



- Source: NBS, NBS calculations.
- The data on the vertical axis express the ratio of profit/loss to the net value of assets.

Balanced and growth funds which have invested in equity instruments would be considerably affected by the negative developments in the equity markets.

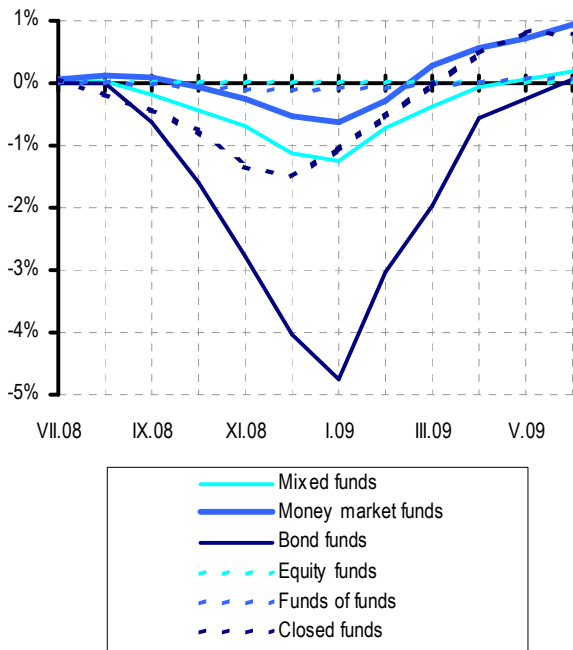
Under the moderate version of the scenario, balanced funds would record only slight losses in the amount of 1.5% to 4.1% of NAV. Under the extreme version, the losses would reach 4% to 9.5% of NAV. In growth funds, the losses would be somewhat bigger owing to the higher ratio of shares and participation certificate to the net value of assets. In balanced funds, NAV would fall by 2% to 6.6% under the moderate version of the scenario, and by 5% to 13.5% under the extreme version.

It is worth mentioning that, since most funds closed their foreign exchange positions, the simulated weakening of the dollar against the euro would have virtually no impact on the funds' NAV.

The impact of these stress scenarios on the four largest contributory funds of supplementary pension management companies would be relatively moderate under both versions; the losses would not exceed 2% of NAV.

## Mutual funds

**Chart 118 Impact of a 2 percentage point increase in key ECB interest rates on mutual funds**



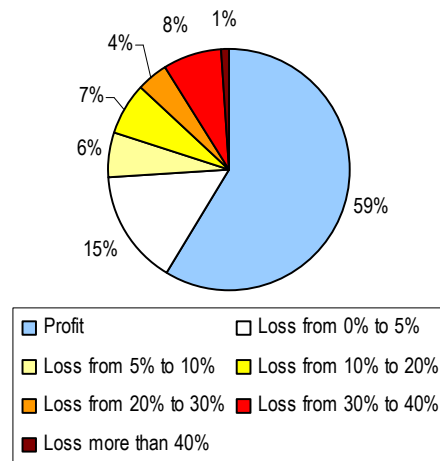
- Source: NBS, REUTERS, NBS calculations.
- The data on the vertical axis express the ratio of profit/loss to the net value of assets.
- The impact includes a change in interest income from deposits at banks.

In mutual funds, like in pension funds, interest income from debt securities and bank deposits would increase under the scenarios applied, while the value of assets in funds investing in equity securities would decrease. In some of the funds investing in securities denominated in US dollars, the scenario applied would cause losses as a result of the simulated weakening of the US dollar. The total impact of

the exchange rate risk on the collective investment sector would be relatively insignificant and would cause a loss of 0.1% of the assets.

The stress tests have confirmed that a relatively large part of the assets (74%) of mutual funds are invested in funds which would record a profit, or a loss of up to 5% of NAV, even under the extreme version of the scenario. These are mainly money market mutual funds and bond funds. Most negatively affected by the relevant scenario would be equity funds and the funds of funds, which would record a loss in excess of 30% of NAV in many cases.

**Chart 119 Impact of the worst-case scenario on the collective investment sector**



- Source: NBS, REUTERS, NBS calculations.
- The data in the chart express the share of funds of the market.
- The losses were calculated as losses which would be incurred by funds as a result of the extreme scenario applied for one year and are expressed as a share of NAV.



## 8. Selected topic – Exposure of banks to the commercial real estate market

### Commercial properties and their relation to financial stability

Owing to the financial crises in North Europe, the United States, and Asia in the past decades, which were closely linked to developments in the commercial and residential real estate markets, these markets are currently closely monitored by central banks and supervisory authorities. To assess the risks stemming from the commercial real estate market for financial stability, it is necessary to know the size and characteristics of this market, as well as the channels through which the financial sector is linked to the said market.

Commercial real estates are defined as real estates yielding a profit, such as office buildings, restaurants, hotels, etc. Residential real estates, such as apartment houses for example, are also commercial properties if they are owned by organisations active in the commercial real estate market or are used for commercial purposes.

Commercial property prices are, like the prices of other assets, determined by supply and demand factors. Supply is mainly influenced by the input costs (the price of land, building materials, and construction costs) and the expected yields, i.e. expected rents, while demand is determined by the rate of GDP growth and the discount rates, which are mostly long-term rates, increased by a risk margin. However, the commercial property market has certain features which make this market different from other asset markets. Since commercial properties are non-transferable assets, their prices may differ significantly in different localities (even if they are not far from one another), because the supply and demand sides are influenced by different factors. High construction and transaction costs may result in a relatively non-elastic supply in the short and medium term, therefore prices in this period are

determined mostly by the level of demand. Transactions are conducted bilaterally over the counter, which, together with the relatively low number of transactions, may lead to rather non-transparent prices. The expected future yields and discount rates may change suddenly under the influence of external factors, causing unexpected price changes. These, together with other features, are responsible for the fact that commercial property prices may differ from their fundamental values, which may lead to the occurrence of so-called 'price bubbles' even if there are rational players in the market.

The significance of commercial real estates as financial assets (Commercial Mortgage-Backed Securities – CMBS) has increased in recent years. This instrument enables investors whose financial flows are linked to basic real estates to reduce their commercial property exposures through issues of securities. On the other hand, investors can invest in more liquid commercial properties and can significantly diversify its investments.

A significant feature of the commercial real estate market is the interconnection between the national markets, despite the fact that real estates are basically non-transferable assets. This is due in large part to the high proportion of cross-border investments, which accounted for almost 63% of the total volume of commercial property investments in the EU in 2007. The growth in the CMBS market also created conditions for increased interconnections between the national commercial property markets.

From the viewpoint of financial stability, a substantial factor is the direct or indirect exposure of financial institutions to the commercial property market. The exposure of banks to this market may have different forms: banks may directly own commercial real estates, provide loans for the purchase of real

estates secured by the same property, provide loans to property developer and construction companies, accept real estates as collaterals for loans provided for other purposes, and provide funds to non-bank financial institutions financing the commercial sector.

These channels, through which the banking sector is linked to the commercial property market, represent certain risks for the financial sector in the case of a fall in real estate prices. A fall in the value of directly owned commercial assets may lead to a fall in the quality of assets portfolios in banks. Lower real estate prices or rents may reduce the capacity of debtors to repay loans and may cause a rise in the default rate, which means a possible deterioration in the loan portfolios of banks, a fall in interest rates, and a deterioration in the capital positions of debtors. These impacts may lead to a decrease in the risk appetite of banks and a consequent decline in bank lending, which may result in a fall in the level of activity

in the commercial market and slower growth in the real economy.

It is important enough to mention that, although most of the above-mentioned channels are also present in the residential property market, the commercial property market appears to be more risky for the banking sector. This can be explained by the fact that, at the time of strong economic growth, investment companies and property developers tend to increase their risk profiles (e.g. small share of own funds in projects, etc.), which, however, leads to increased losses after a change in the business cycle or a fall in real estate prices. On the other hand, households are more motivated to avoid problems at the time of economic decline, since residential properties are not only investments but also consumer assets, hence they include a certain added value. This reasoning is also backed by historical examples indicating that commercial real estate property prices are more volatile and they react more intensely to changes in the business cycle.

#### **Box 6 The Swedish crisis in the nineties and its relation to the commercial real estate market**

The interconnection between the commercial real estate market and financial stability can be demonstrated on several practical examples. A good example from our point of view is the Swedish banking crisis which took place in the nineties. Although the commercial property market was not the only factor behind this crisis, it played a substantial role in the process.

During the eighties, the Swedish economy recorded an impressive growth. Unemployment dropped, household consumption increased, as well as investments and asset prices. Demand for office space increased, since the economic growth took place predominantly in the services sector. This led to a rise in prices and rents for commercial real properties, and more importantly, to increased confidence in the economic boom.

The banking sector significantly contributed to this boom. The deregulation of the banking sector in the eighties found banks unprepared for increased lending activity. In an attempt to gain a larger market share, banks considerably eased their credit standards and started providing new loans in large amounts. The easy access to bank financing stimulated further growth in demand for real estates (speculative demand also increased as a result of the conviction that prices will rise still further) and a rise in their prices.

This situation changed substantially after a downturn in the business cycle. The economic decline led to increased unemployment, higher interest rates, decline in investment, and a fall in demand for commercial properties. Real estate prices and rents dropped. Numerous highly indebted commercial property developers and investment companies were unable to meet their financial obligations towards banks. The crisis negatively affected the banking sector, which played a major role in financing the commercial property 'bubble'. The loan losses of banks totalled 4.2% of GDP in 1992. In the end, the government had to intervene to handle the crisis. Total loss for taxpayers was estimated at 2% GDP.

## **The period of high yields in commercial property markets has come to an end**

The global commercial property market has been one of the most dynamically growing markets in recent years. During this period, the low interest rates and liquidity surpluses motivated investors to make more profitable investments even at the expense of increased risks. Thus, investments in commercial properties markedly increased in parallel with the global economic growth. Commercial property investments in the EU increased from EUR 63 billion in 200 to EUR 225 billion in 2007. These investments were in large part made by leveraged investors, such as private equity companies and hedge funds.

The period of high yields in the commercial property market was stopped by the mortgage crisis in the United States, which began in the middle of 2007. The risk appetite of investors changed in relation to commercial properties, which are generally regarded as rather risky and volatile investments closely related to the business cycle. In the second half of 2007, the volume of investments fell in numerous countries in different measure. In the EU, the volume of commercial property investments decreased over the second half of 2007 by approximately 30% on a year-on-year basis. The structure of investors also changed, when the activities of leveraged investors were taken over by sovereign wealth funds and pension funds. In evaluating the decline in investments, it is necessary to take into account the marked regional differences (decline was mainly reported from the UK, USA, and Spain, while several countries in continental Europe recorded increased investments).

The change in sentiment was also reflected in the market for commercial mortgage-backed securities (CMBS, according to the estimates of Morgan Stanley, the volume of such securities is expected to fall globally to USD 35 billion in 2008, from USD 322 billion in 2007). The regional differences in this decline are minimal,

since the majority of countries were hit by the negative developments.

Marked changes were recorded in the financing of commercial real estate property investments, when the terms of financing were tightened for such investments in numerous countries. As we have already mentioned, demand among investors for new CMBS issues declined.

The future trends in the global real estate market are as difficult to predict as the further course of the current financial crisis, which is closely linked to the mortgage crisis in the United States. Under a worst-case scenario, i.e. deep and long-term crisis affecting the real economy, coupled with slow recovery in the financial sector and persistent uncertainty in the financial markets, the negative trend is expected to deepen still further. This would mean problems with the acquisition of funds, low demand, and a fall in real estate prices and rents.

A more positive trend can be expected if we assume that the financial markets will consolidate in a relatively short time.

## **Current and expected trends in the Slovak market**

The trends in the Slovak commercial real estate market are, to some extent, similar to those observed in other Central European countries. These countries have not yet been hit severely by the current financial crisis and thus, thanks to their successful economic transformation and dynamic economic growth in comparison with Western European countries, they are not expected to experience a sharp decline in demand for commercial properties over the short term horizon. Owing to its strong economic growth, Slovakia has an exceptional position among these countries.

Noticeable changes were recorded in project financing. Due to a shortage of liquidity in the financial markets, less funds are available for project financing and their price has increased.

Investors have become more sensitive to the risks involved in such projects; hence they require greater capital participation from property developers. The conditions have also been tightened in terms of other criteria (e.g. pre-lease ratio), or in other areas.

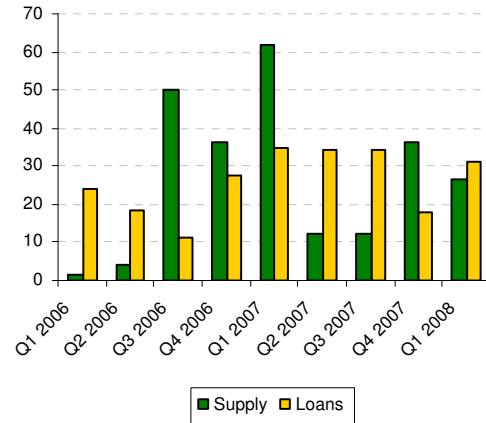
In the short term, demand for commercial properties is expected to remain strong enough to cover the growing supply. The further trend in demand over the medium- and long-term horizon is, however, questionable. If the current financial crisis deepens and continues in the real economy, demand for new real estates may fall to a significant extent. The excess of supply over demand may exert pressure for a fall in rents, which may reduce the capacity of property developers to meet their financial liabilities.

For a detailed analysis of the commercial real estate market, it is necessary to examine its individual segments separately, mainly the markets for office buildings, retail premises, and industrial facilities. Developments in these segments are largely dependent on the basic indicators, such as economic growth, but are also connected with the specific features of the individual segments, mainly the current ratio of supply to demand in the given segment.

In the coming years, supply is expected to grow significantly in all segments in Slovakia, which can be explained by the positive economic trends and the large number of projects under construction.

The market for office buildings has greatly expanded in recent years. In the first quarter of 2008, the total office space available in the Slovak market reached approximately 758,000 m<sup>2</sup>. A large part of this supply was covered by demand, while the vacancy rate fluctuated around 5.19% at the of the first quarter of 2008.

**Chart 120 Supply of and demand for office space**

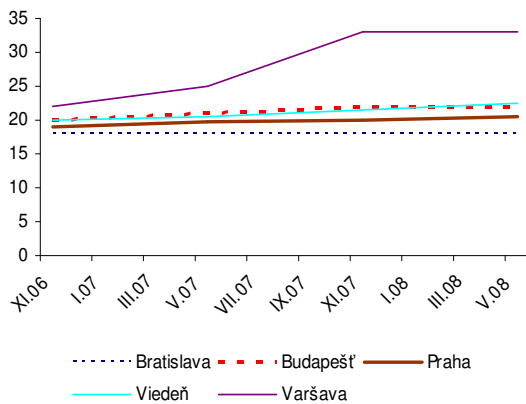


- Source: CB Richard Ellis.
- The data are in thousands of m<sup>2</sup>.

In the coming years, the offer of new office buildings (mainly of higher categories) is expected to increase significantly, to almost 360,000 m<sup>2</sup> at the end of 2009. Hence, there will be probably higher vacancy rates in office buildings, exerting downward pressure on rents. In Bratislava, office rents are already lower than in the neighbouring capital cities.

Supply is also expected to grow in the area of industrial buildings. In Bratislava and the surrounding area, supply fluctuated at the level of 623,681 m<sup>2</sup> at the end of the first half of 2008. In the next few years, the offer of new buildings in greater Bratislava will probably grow still further, while significant increases are also expected in other regions. The vacancy rate is higher than in the case of office buildings and is also expected to increase somewhat as a result of the growing supply, exerting downward pressure on rents.

**Chart 121 Office rents in Central European capital cities**



- Source: CB Richard Ellis.
- The data express the prime rate and are in EUR/m<sup>2</sup>.

The market for retail premises has been driven in recent years by the growing economy and the improving financial situation of households. Demand for retail premises is still high in Slovakia, not only in Bratislava but in other regions as well. Thus, the available space (275,000 m<sup>2</sup> in the first quarter of 2008) is expected to increase significantly in the coming period.

### Exposures of domestic banks to the commercial property market

The exposures of domestic banks to the commercial real estate property market have been on the increase in recent years. Such exposures result mainly from loans provided for commercial property purchases, since securities derived from investments in commercial properties and directly purchased commercial properties form a negligible part of the banks' portfolios. Similar developments can be seen in the European Union, where the volume of CMBS portfolios is at the level of EUR 60 billion, which accounts for less than 0.3% of the total assets. The value of directly purchased commercial properties ranges from 0.04% to 0.46% of the total assets.

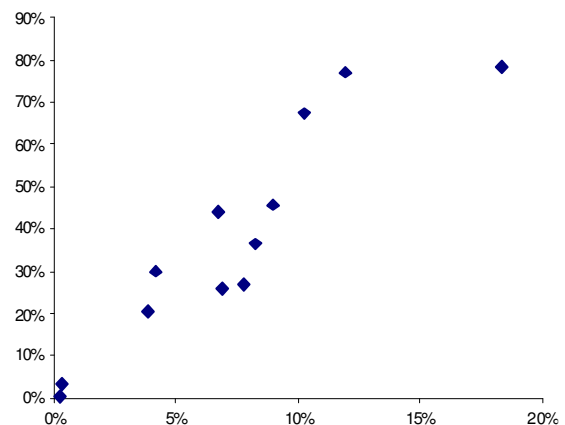
The exposures of banks to the commercial property market are formed mostly by loans.

Their weight in total loans to customers (except for households) fluctuated in the sector around 9% at the end of 2007. For individual EU countries, this figure ranged from 1.8% to 35.6% and the average value stood at 10%.

There were considerable differences within the individual domestic banks. The exposures of banks through these loans reflect their overall risk profiles. Each bank has a predefined risk profile, which is reflected in the limit set for commercial loans as a percentage of total credit. The largest share of such loans is recorded in the strongest banks. Loans for commercial properties have a smaller weight in small banks.

With regard to the risk involved, a major factor is the proportion of these loans to own funds, from which unexpected losses are to be covered. In the banking sector as a whole, loans for commercial properties account for almost 50% of the own funds.

**Chart 122 Loans for commercial properties as a percentage of own funds and loans to customers**



- Source: NBS.
- The vertical axis gives the ratio of loans for commercial real estate to own funds.
- The horizontal axis gives the ratio of loans for commercial real estate to loans to customers.

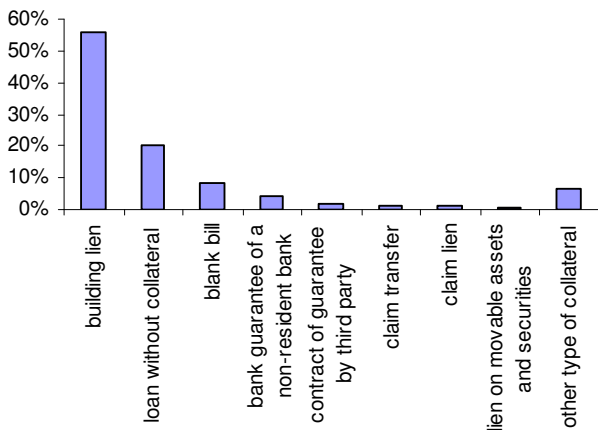
Marked differences between banks can also be observed in the concentration of loans for commercial property purchases. Small banks have less diversified portfolios (in terms of the

three largest loans as a share of total loans), because they provide less loans for commercial property purchases. In terms of risk, an important factor is again the ratio of the largest loans to own funds.

Most loans provided for commercial property purchases are secured by the same property. The ratio between the volume of loans and the value of collateral is 120% in the sector. Banks often combine the pledge of real estate property with another type of security.

A relatively large part of the loans is formed by unsecured loans, which may cause relatively serious losses to banks in the event of default. Such loans are provided by a few banks only, but in some of these banks their share in loans for commercial properties is significant.

**Chart 123 Collateral for commercial property purchase loans**



- Source: NBS.

The volume of defaulted loans provided for the purchase of commercial properties was relatively low in December 2007. They accounted for 1.7% of the total volume of loans in the sector. The share of defaulted loans is a useful indicator of the quality of bank lending, mainly of the bank's ability to distinguish between good and poor quality projects.

In total, more than 96% of the commercial loans of domestic banks were provided to companies active in the domestic market

Loans are mostly provided for special purpose vehicles (SPV), for specific projects. These are usually owned by the sponsors of the projects. The loans provided are held in the portfolios of banks (take and hold strategy), securitisation has not yet been applied (originate-and-distribute strategy).

The loan portfolios are dominated by loans with floating interest rates. The required hedge against the interest rate risk differs from bank to bank and also depends on the specific project. Numerous banks require a hedge against the interest rate risk.

When providing loans to customers, banks require the pledge of real estate property as collateral for the loan. According to banks, the conditions have remained unchanged in the recent period, only the standards concerning the value of LTV have been tightened somewhat. Customer are normally required to meet other contractual conditions as well, e.g. minimum capital adequacy, pre-lease/pre-sale ratio, contracted suppliers, permits and licences, etc. The exposures of banks are monitored on a regular basis, at least once a year, when the meeting of conditions and the value of collateral are also verified.

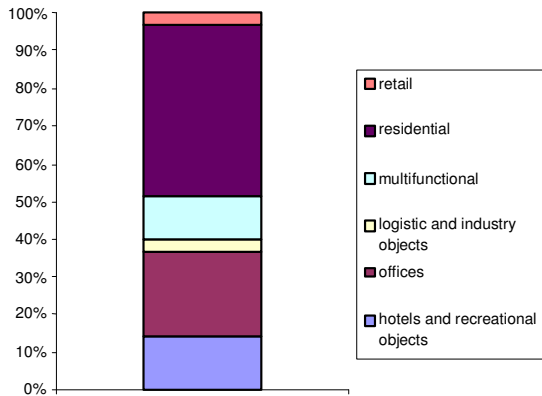
The maturities of investments loans range from 15 to 25 years, depending on the specific project. Property development loans have shorter maturities, usually up to 5 years. The maturities have increased in recent years.

The structure of loans provided for commercial properties indicates that domestic banks focus on residential properties, which account for almost 45% of the volume of loans for commercial properties.

In the case of large banks, we can see greater diversification within the individual sectors. Their portfolios are also dominated by loans for residential properties. Smaller banks

provide less loans, so they tend to focus more on specific segments of the markets.

**Chart 124 Loans for commercial properties by market segment**



- Source: NBS.

For comparison, we also present here the structure of loans for commercial properties in the EU. In EU countries, the most important types of commercial loans are residential loans, retail loans, and loans for the purchase or construction of office buildings. Their proportions to the total volume of commercial loans differ greatly from country to country.

In the coming years, banks are expected to focus even more on residential projects in Slovakia. Most in demand will be projects intended for a wider group of the population. A more conservative approach can be expected in the case of new office building projects. The reason behind this is a marked increase in supply and the announcement of new office building projects, coupled with concern about the success of these projects and the downward pressure on rents.

From the viewpoint of banks, the segment of industrial buildings is also attractive, mainly logistic and retail buildings. In view of the relatively high saturation of the market in Bratislava and its environs, we expect a larger volume of loans in other regions.

Owing to the increased market saturation, we expect that projects will be selected more

strictly, on the basis of their quality, location, contractual partners, etc.

### Potential risks for the banking sector

The commercial real estate market has experienced quite exceptional growth in recent years. This development was in large part determined by the positive trend in the Slovak economy, ample liquidity, and the improving financial standing of households and enterprises.

This trend has brought many positive things. The supply of new buildings has increased, in terms of both number of quality, and the construction boom greatly contributed to the economic growth. On the other hand, examples from other countries show that the commercial property market is relatively volatile and is closely linked to the business cycle. The losses and overall decline associated with the business cycle are greater than in the case of residential properties (the causes are specified in the chapter '*Commercial properties and their relation to financial stability*').

In numerous large economies, the commercial real estate market started to change in the second half of 2007. The domestic market has not yet been seriously affected. Funds have become more difficult to obtain and more expensive for investors.

In the period to come, the supply of new buildings will in all probability continue growing in virtually all segments. The market will be more and more influenced by demand for buildings, rather than by their supply. In the short term, demand is expected to remain strong. In the medium and long term, however, there is uncertainty about the level of demand. The financial crisis, recession or slow growth in certain countries may relatively quickly and significantly affect the level of demand for commercial properties in Slovakia.

If this scenario becomes reality, the most important factors in connection with the risks involved in the exposures of banks to this sector will be the quality of individual projects and the

risk appetite of banks with which they enter into credit contracts. From the viewpoint of the NBS, mainly the risk indicators are important – the ratio of loans to own funds, concentration, coverage, etc.

The degrees of risks are different in the individual banks. The ratio of loans to own

funds is higher in large banks, which, however, have much better diversified portfolios. On the other hand, small banks provide less loans in terms of both number and volume, but are more sensitive to the default of large customers.



## 9. Table Annex

### A Information on the structure of the financial market

#### A.1 Data on numbers of institutions

##### A.1.1 Number of financial institutions

	Number of institutions as at 30. 06. 2008	Number of institutions as at 30. 06. 2007	Change
Number of banks in the SR	17	16	+1
of which: building societies	3	3	
banks holding mortgage license	9	8	+1
other banks	5	5	
Number of branches of foreign banks in the SR	10*	9	+1
of which: on the basis of an NBS license	0	1	-1
on the single banking passport principle	10	8	+2
of which: branches of foreign banks holding mortgage license	0	1	-1
Number of branches of foreign banks contributing to Deposit Protection Fund	0	2	-2
Number of foreign bank representative offices in the SR	8	9	-1
Number of branches (organizational units) of banks in the SR	841	693	+148
Number of lower organizational units in the SR	392	464	-72
Number of branches of Slovak banks in other countries	1	1	
Number of Slovak banks' representative offices in other countries	1	1	
Number of foreign entities freely providing cross-border banking services	226	143	+83
of which: banks	209	131	+78
electronic money institutions	9	7	+2
of which: foreign financial institutions	6	3	+3
credit unions	2	2	
Slovak banks providing free cross-border banking services abroad	2	1	+1
of which: electronic-money institutions	0	0	
Number of employees of banks and branches of foreign banks	20 203	19 435	+768
Number of insurance companies in the SR	24	23	+1
of which: insurance companies providing only life insurance	6	5	+1
insurance companies providing only non-life insurance	4	4	
insurance companies providing both life and non-life insurance	14	14	
Insurance companies providing services on the basis of the freedom to provide services	412	323	+89
of which: Without establishing a branch	400	316	+84
of which: Via a branch	12	7	+5
Number of insurance companies in the SR providing statutory automobile liability insurance	9	9	
Number of pension fund management companies	6	6	
Number of supplementary pension companies	5	5	
Number of supplementary pension insurance companies	0	0	
Number of domestic asset management companies in the SR	10	10	
of which: asset management companies with an extended license under § 3 (3) of Act on Collective Investment (ACI)	5	6	-1
Number of domestic mutual funds:	125	109	+16
of which: open mutual funds	79	60	+19
closed mutual funds	41	44	-3
special mutual funds	5	5	
Number of foreign asset management companies and foreign entities of collective investment operating in the SR on the basis of a license under § 75 of the ACI:	2	3	-1
of which: via a branch in the SR	1	1	
without establishing a branch	1	2	-1
Number of foreign asset management companies and foreign entities of collective investment operating in the SR on the basis of a single European passport:	46	24	+22
Of which: with establishing branch of foreign asset management companies according to Section 28 of ACI	2	1	+1
: : foreign asset management companies without establishing branch according to Section 29 of ACI	12	7	+5
: European Funds according to Section 61 - foreign asset management companies	12	9	+3
- foreign investment companies	20	17	+3
within which: number of foreign mutual funds and sub-funds of foreign investment companies	804	478	+326
Number of foreign asset management companies providing services according to Section 3 (3) of ACI	11	5	+6
Number of securities dealers	17	13	+4
of which: banks and branches of foreign banks – securities brokers with license from NBS	13	18	-5
branches of foreign banks – securities brokers with license from domestic authority	6		
Number of foreign entities operating in the SR as securities dealers	762	344	+418
of which: via branch in the SR	3	3	
without establishing a branch	759	341	+418
Number of Slovak securities dealers providing services abroad	7	7	
Number of investment service brokers in the SR:	977	915	+62
of which: juristic persons	79	63	+16
natural persons	898	852	+46

### **The banking sector and securities dealers**

On 27 March 2008, the National Bank of Slovakia issued a decision modifying the banking licences of Citibank (Slovakia), a.s.; ISTROBANKA, a.s.; Slovenská sporiteľňa, a.s.; OTP Banka Slovensko, a.s.; and Poštová banka, a.s. in accordance with the provisions of Article 173h paragraph 2 of Act No. 209/2007 Z.z. of the National Council of the Slovak Republic amending the Banking Act and the Securities Act.

On 28 April 2008, the National Bank of Slovakia issued a decision extending the banking licence of Československá obchodná banka, a.s. to provide an additional service – custody activity in accordance with the provisions of Article 6 paragraph 2(a) of the Securities Act and the banking licence of Tatra banka, a.s. to provide an additional service – custody activity in accordance with the provisions of Article 6 paragraph 2(a) of the Securities Act, and extended their licences to pursue investment activity – trading for own account in non-permitted instruments pursuant to the provisions of Article 5 para 1 letters e), f) and g) of the Securities Act.

In April and May 2008, the National Bank of Slovakia issued decisions to change the licences of Across Wealth Management, o.c.p., a.s.; CAPITAL MARKETS, o.c.p., a.s.; Blank Asset Managers, o.c.p., a.s.; FIMEX CAPITAL o.c.p., a.s.; and SALVE INVESTMENTS, o.c.p., a.s. to provide investment services.

On 3 April 2008, the National Bank of Slovakia issued a decision extending the banking licence of UniCredit Bank Slovakia, a.s. to provide an additional service – custody activity in accordance with the provisions of Article 6 paragraph 2(a) of the Securities Act.

On 16 June 2008, the National Bank of Slovakia issued a decision granting a preliminary permit to KBC Bank N.V., Belgium for acquiring a 100% share of the registered capital and voting rights of ISTROBANKA, a.s. At the same date (16 June 2008), KBC Bank N.V., Belgium received permission to acquire a 100% share of the registered capital and voting rights of ISTROBANKA, a.s.

### **The collective investment sector**

On 3 March 2008, the National Bank of Slovakia issued a decision for the Bratislava Stock Exchange (BSSE), approving the amendments to the stock exchange rules, on the basis of which the updated Company Administration & Management Code, prepared in line with the international recommendations and binding for all companies whose securities are accepted for trading on the regulated market of the BSSE, has become part of the stock exchange rules.

On 18 March 2008, the National Bank of Slovakia modified the licence of the Bratislava Stock Exchange (BSSE). The BSSE's scope of activity was extended to include the organisation of a multilateral trading facility as an alternative to the traditional regulated markets. This enables access to the organised market for issuers who do not satisfy the requirements for admission to the regulated market, due to a lack of experience, capital, and financial history. The organisation of an MTF also enables the purchase/sale of financial instruments to investors with limited possibilities for dealing in financial instruments, because their licences to trade in such instruments have expired.

On 22 April 2008, the National Bank of Slovakia modified the licence of the Central Securities Depository of the SR (CDCP SR, a.s.). The scope of activity of CDCP SR, a.s. was extended to include the activities laid down in Act No. 209/2007 Z.z., which amended the Act on Securities. Another activity included in the relevant scope of activity was the authorisation of CDCP SR to record changes in depository accounts and open/maintain owner accounts for the central depository and to ensure related services.

On 17 June 2008, the National Bank of Slovakia granted a preliminary permit to Patria Finance a.s. with a registered office at Jungmannova 745/24, 110 00 Praha 1, Czech Republic, which is a

foreign dealer in securities, for performing activities as a member of the Central Securities Depository of the SR.

On 25 January 2008, the National Bank of Slovakia issued a decision to grant permission for the acquisition of a 66% share of the registered capital and voting rights of ČSOB Asset Management, a.s. and for the registration of the said asset management company as a subsidiary of Československá obchodná banka, a.s.

On 13 February 2008, the National Bank of Slovakia issued a decision to modify the licence of AIG Funds Central Europe a.s. to establish and operate an asset management company so that the scope of activity was extended to include portfolio management in relation to financial instruments pursuant to Article 5 paragraph 1 letters a) to d) of the Securities Act, advisory activity in relation to financial instruments pursuant to Article 5 paragraph 1 letters a) to d) of the Securities Act, and PL management and custody pursuant to Article 3 paragraph 3(c) of the Act on Collective Investment.

On 20 June 2008, the National Bank of Slovakia issued a preliminary permit for the acquisition of a 66% share of the registered capital and voting rights of Istro Asset Management and for the registration of the said asset management company as a subsidiary of KBC Bank NV.

### The insurance sector

ON 27 March 2008, Wüstenrot Verwaltungs-und Dienstleistungen GmbH, Austria received a preliminary permit from the National Bank of Slovakia for acquiring a 33.87% share of the registered capital of Wüstenrot Insurance Company, a.s., Bratislava.

On 17 June 2008, the National Bank of Slovakia issued a decision to grant a preliminary permit for the merger of POIŠŤOVŇA HDI-GERLING Slovakia a.s., Bratislava, and HDI Hannover Versicherung Aktiengesellschaft, Austria. By this merger, HDI Hannover Versicherung Aktiengesellschaft, Austria, will become a legal successor of POIŠŤOVŇA HDI-GERLING Slovakia, a.s.

## A.2 Data on the ownership structure of supervised institutions

### A.2.1 Individual countries' shares in the registered capital of individual types of financial institutions as at 30. 06. 2008 (in %)

	Banks	Insurance companies	Pension fund management companies	Supplementary pension companies	Asset management companies	Securities dealers
Slovakia	8.06	8.16	41.28	27.43	88.8	0.67
EU states (excl. SR)	89.08	89.81	58.72	72.14	11.2	96.14
Czech Republic	16.23		5.71			22.05
France	0.49	1.9				0.54
Netherlands	1.06	16.37	16.51	41.78		1.21
Luxembourg	21.72					25.04
Hungary	3.48	4.17				3.98
Germany	1.49	1.89				
Austria	34.84	52.64				37.00
Italy	0.10					
Portugal	0.11					
United Kingdom	0.06	7.16				0.06
Other		5.68	36.50	30.36	11.2	
Countries outside EU	2.86	2.03		0.43		3.18

- Data in the table represent individual countries' shares in the registered capital of financial institutions according to the prime owner.

## B Analytical data

### B 1 Banks and branches of foreign banks

#### B 1.1 Asset and liability structure of banks and branches of foreign banks

Financial data in thousands of SKK	Total volume (as at 30.6.2008)	Share of a foreign currency	y/y change	Share of balance sheet total	CR3	CR5	HHI
<b>ASSETS TOTAL (gross)</b>	1 783 075 059	15 %	10 %	100 %	50 %	67 %	1 092
<b>TOTAL LOANS TO CUSTOMERS</b>	896 764 567	22 %	22 %	50 %	51 %	67 %	1 112
Loans to retail	344 424 750	3 %	28 %	19 %	63 %	82 %	1 613
of which: Loans to households	320 047 326	2 %	29 %	18 %	63 %	83 %	1 649
Loans to enterprises	434 906 017	32 %	21 %	24 %	47 %	67 %	1 073
Loans to non-banking financial companies	61 421 602	26 %	-1 %	3 %	49 %	68 %	1 108
Loans to general government	20 686 612	32 %	-2 %	1 %	77 %	87 %	4 078
Loans to non-residents	35 325 586	70 %	51 %	2 %	49 %	75 %	1 312
<b>TOTAL INTERBANK MARKET OPERATIONS</b>	521 816 153	9 %	6 %	29 %	53 %	71 %	1 190
of which: Operations with the NBS and foreign CB (incl. NBS bills)	402 352 165	0 %	-1 %	23 %	56 %	72 %	1 282
<b>TOTAL SECURITIES</b>	292 956 439	10 %	-8 %	16 %	69 %	80 %	1 744
Securities issued by residents	237 244 428	5 %	-10 %	13 %	72 %	81 %	1 864
Government bonds	184 824 635	6 %	-8 %	10 %	73 %	81 %	2 026
Corporate bonds	5 459 427	12 %	-3 %	0 %	77 %	98 %	2 456
Bank bonds	26 853 291	2 %	5 %	2 %	64 %	81 %	1 812
Other debt securities	8 042 649	0 %	-65 %	0 %	100 %	100 %	9 998
Asset securities	12 064 426	0 %	71 %	1 %	77 %	93 %	2 271
Securities issued by non-residents	28 017 878	59 %	-18 %	2 %	76 %	86 %	2 382
Debt securities	25 092 117	58 %	-21 %	1 %	73 %	85 %	2 319
of which: issued by banks	14 522 214	38 %	-4 %	1 %	79 %	89 %	2 667
of which: issued by general government	1 706 681	100 %	-47 %	0 %	78 %	100 %	2 452
of which: other issuers	8 863 222	82 %	-34 %	0 %	78 %	93 %	3 021
Asset securities	2 925 761	68 %	33 %	0 %	98 %	100 %	3 748
of which: issued by banks	667 884	98 %	36 %	0 %	100 %	100 %	6 359
of which: other issuers	2 257 877	59 %	32 %	0 %	100 %	100 %	5 263
Derivatives – positive fair value	27 694 133	0 %	28 %	2 %	59 %	80 %	1 610
<b>TOTAL LIABILITIES</b>	1 720 223 971	23 %	10 %	100 %	50 %	67 %	1 083
<b>TOTAL DEPOSITS AND LOANS FROM CUSTOMERS</b>	1 051 313 346	20 %	4 %	61 %	58 %	71 %	1 310
of which: deposits insured at the Deposit Protection	583 662 722	8 %	15 %	34 %	61 %	74 %	1 571
Deposits and loans accepted from the retail	553 326 012	8 %	14 %	32 %	62 %	74 %	1 628
Deposits and loans accepted from households	506 438 130	8 %	14 %	29 %	62 %	75 %	1 647
Deposits and loans accepted from enterprises	279 561 587	18 %	-7 %	16 %	54 %	73 %	1 440
Deposits and loans accepted from fin. co.'s other than banks	93 936 988	8 %	8 %	5 %	48 %	72 %	1 182
Deposits and loans accepted from general government	97 709 573	38 %	-18 %	6 %	89 %	97 %	3 582
Deposits and loans accepted from non-residents	26 779 186	41 %	43 %	2 %	46 %	65 %	1 035
<b>TOTAL SOURCES FROM BANKS</b>	339 468 000	63 %	24 %	20 %	55 %	70 %	1 294
Sources from the NBS and foreign issuing banks	2 431 309	0 %	-20 %	0 %	98 %	100 %	8 600
Sources from non-resident banks	299 615 553	70 %	30 %	17 %	59 %	75 %	1 465
<b>TOTAL SECURITIES ISSUED</b>	154 911 043	15 %	25 %	9 %	61 %	79 %	1 592
Mortgage bonds	92 564 067	23 %	30 %	5 %	71 %	84 %	2 166
Bills of exchange	21 517 456	10 %	3 %	1 %	78 %	95 %	2 262
Other securities issued	10 098 512	3 %	14 %	1 %	90 %	100 %	4 198
Derivatives – negative fair value	30 731 008	0 %	33 %	2 %	60 %	80 %	1 629
Risk-weighted assets of the banking book	815 674 130		24 %	47 %	57 %	73 %	1 300
Risk-weighted assets of the trading book	39 222 015		83 %	2 %	62 %	82 %	1 786
Other risk-weighted assets	92 321 225		5396 %	5 %	60 %	75 %	1 434
Own funds	113 385 308		24 %	7 %	45 %	65 %	1 023

The calculation of CR 3, CR 5 and HHI covers only those institutions having a positive value of the given item.

In the case of all institutions having an equal share, the *HHI* value would be 385, were the number of institutions 26.

Assets are expressed in the gross value; equality with liabilities is achieved by deducting the value of depreciation charges and provisions.

Due to changes in reporting, as of January 1, 2007 the treasury bonds and notes held until maturity were included into operations on interbank market. The amount of risk-balanced assets does not include risk-balanced assets of branches of foreign banks. Both changes were considered when calculating year-on-year change.

## B 1.2 Revenues and expenditures of banks and branches of foreign banks (in thousands of SKK)

	Value (as at 30.6.2008)	Value (as at 30. 6. 2007)	CR3	CR5	HHI
(a) TOTAL OPERATING COSTS (b + e + f)	17 580 679	17 580 679	58 %	71 %	1 311
(b) Administrative costs (c + d)	14 867 085	14 867 085	56 %	70 %	1 273
(c) Purchased performances	7 449 136	7 449 136	56 %	69 %	1 294
(d) Staffing costs	7 417 949	7 417 949	57 %	72 %	1 275
(e) Depreciation / amortization of movable and immovable	2 377 496	2 377 496	64 %	76 %	1 562
(f) Taxes and fees	336 098	336 098	83 %	90 %	4 265
(g) GROSS INCOME (h + l)	32 767 326	32 767 326	60 %	75 %	1 395
(h) Net interest income (j - i)	22 661 748	22 661 748	58 %	72 %	1 299
(i) Interest expenses	21 657 740	21 657 740	42 %	63 %	963
(j) Interest income	44 319 488	44 319 488	50 %	66 %	1 089
(k) of which: Interest income from securities	7 568 643	7 568 643	63 %	80 %	1 638
(l) Net non-interest income (m + n + o + p)	10 105 578	10 105 578	66 %	83 %	1 667
(m) Revenue from shares and ownership interests	506 383	506 383	89 %	99 %	3 009
(n) Net income from fees	6 721 880	6 721 880			
(o) Net income from trading	3 609 102	3 609 102	53 %	78 %	1 531
(p) Other net operating incomes	- 731 787	- 731 787			
(q) NET INCOME (g - a)	15 186 647	15 186 647			
(r) Net creation of provisions and net income from depreciation of receivables	2 401 424	2 401 424			
(s) Net creation of reserves	- 309 745	- 309 745			
(t) NET PRE-TAX PROFIT (q - r - s)	13 094 968	13 094 968	61 %	79 %	1 495
(u) Extraordinary profit	0	0			
(v) Income tax	2 657 639	2 657 639	59 %	75 %	1 440
w) NET PROFIT AFTER TAX (t + u - v)	10 437 329	10 437 329	61 %	80 %	1 527

The calculation of CR 3, CR 5 and HHI covers only those institutions having a positive value of the given item.

In the case of all institutions having an equal share, the HHI value would be 385, were the number of institutions 26.

## B 1.3 Profitability indicators of banks and branches of foreign banks and their distribution in the banking sector

	Denominator-weighted average (30.6.2008)	Denominator-weighted average (30.6.2007)	Average weighted by the volume of assets	Minimum	Lower quartile	Median	Upper quartile	Maximum
ROA	0.62 %	0.66 %	0.61 %	-3.15 %	0.26 % (15 %)	0.41 % (8 %)	0.72 % (16 %)	2.07 % (61 %)
ROE (excl. branches)	8.90 %	0.00 %	9.92 %	1.13 %	3.59 % (6 %)	5.11 % (6 %)	8.58 % (20 %)	13.98 % (57 %)
Cost-to-income ratio	53.65 %	57.51 %	52.82 %	-446.42 %	44.99 % (20 %)	51.31 % (30 %)	68.09 % (36 %)	184.12 % (14 %)
Relative significance of interest incomes	69.16 %	67.44 %	69.74 %	-17.18 %	61.50 % (5 %)	68.11 % (53 %)	84.20 % (31 %)	100.51 % (10 %)
Net interest spread	1.27 %	1.16 %	1.23 %	-0.96 %	0.38 % (12 %)	1.05 % (15 %)	1.45 % (34 %)	6.79 % (39 %)
retail	2.67 %	2.98 %	1.85 %	-34.46 %	1.16 % (17 %)	1.66 % (18 %)	2.53 % (23 %)	7.02 % (41 %)
corporates	1.17 %	1.26 %	0.83 %	-12.13 %	1.00 % (21 %)	1.32 % (40 %)	1.56 % (10 %)	2.78 % (28 %)
financial companies	0.64 %	0.36 %	0.72 %	-2.22 %	0.31 % (15 %)	0.88 % (39 %)	1.88 % (24 %)	4.69 % (16 %)
banks including the NBS and bills	0.02 %	-0.04 %	0.22 %	-1.83 %	-0.42 % (24 %)	0.17 % (30 %)	0.70 % (22 %)	2.86 % (23 %)
Net interest margin	1.31 %	1.25 %	1.27 %	0.00 %	0.41 % (11 %)	1.12 % (15 %)	1.46 % (33 %)	6.70 % (41 %)

Figures in brackets below the quartile values represent the share of banks (measured by volume of net assets) for which the value of the indicator lies between the value of the given quartile and the previous quartile.

## B 1.4 Risk and capital adequacy indicators of banks and branches of foreign banks and their distribution in the banking sector

	Denominator-weighted average (30.6.2008)	Denominator-weighted average (30.6.2007)	Average weighted by volume of assets	Minimum	Lower quartile	Median	Upper quartile	Maximum	Number of breaches
<b>CREDIT RISK</b>									
Share of defaulted loans in the total volume of loans to customers	2.88 %	3.11 %	2.84 %	0.00 %	0.00 % (11 %)	1.75 % (46 %)	5.13 % (28 %)	15.95 % (16 %)	
Retail (share in loans to retail)	3.90 %	3.64 %	3.53 %	0.00 %	0.00 % (11 %)	2.00 % (38 %)	5.84 % (17 %)	18.06 % (34 %)	
Corporates (share in loans to corporates)	2.73 %	3.41 %	2.43 %	0.00 %	0.00 % (17 %)	1.19 % (21 %)	2.83 % (27 %)	15.95 % (34 %)	
Financial companies (share in loans to financial companies)	0.03 %	0.11 %	0.10 %	0.00 %	0.00 % (36 %)	0.00 % (0 %)	0.00 % (24 %)	1.00 % (34 %)	
Share of provisions in the volume of defaulted loans to customers	89.94 %	98.59 %	178.63 %	35.11 %	70.72 % (10 %)	90.35 % (23 %)	105.82 % (18 %)	3687.78 % (38 %)	
Large asset exposure (weighted) / own funds (excl. branches)	189.50 %	181.21 %	202.02 %	0.00 %	159.80 % (21 %)	223.61 % (31 %)	280.18 % (27 %)	445.10 % (9 %)	0
Large asset exposure within groups (number of breaches)									3
Share of claimable value of securities in the total volume of defaulted loans to customers	31.23 %	36.00 %	27.67 %	0.00 %	8.17 % (18 %)	32.46 % (23 %)	43.68 % (37 %)	97.82 % (9 %)	
<b>FOREIGN EXCHANGE RISK</b>									
Forex open balance-sheet position / own funds (excl. branches)	-46.25 %	-12.07 %	-56.37 %	-410.33 %	-33.10 % (50 %)	-1.06 % (10 %)	1.11 % (5 %)	163.89 % (24 %)	
Forex open off-balance-sheet position / own funds (excl. branches)	30.18 %	27.29 %	42.97 %	-289.19 %	-93.98 % (31 %)	-0.72 % (10 %)	0.00 % (5 %)	412.85 % (43 %)	
Total forex open position / own funds (excl. branches)	-16.08 %	15.22 %	-13.40 %	-228.93 %	-20.22 % (33 %)	-0.38 % (6 %)	2.52 % (14 %)	129.55 % (36 %)	
Total forex open position / own funds (excl. branches)	-44.71 %	20.63 %							
<b>INTEREST RATE RISK</b>									
Total interest-rate open position up to 1 month / own funds (excl. branches)	-158.60%	-169.15%	-162.85%	-605.95%	-327.44% (35%)	-126.59% (9%)	-57.26% (24%)	205.16% (21%)	
Total interest-rate open position up to 1 year / own funds (excl. branches)	-72.66%	-33.02%	-76.10%	-538.83%	-54.20% (41%)	-37.65% (15%)	8.47% (6%)	55.12% (27%)	
Total interest-rate open position up to 5 years / own funds (excl. branches)	-7.83%	62.36%	-12.25%	-912.02%	-29.14% (31%)	20.43% (24%)	49.92% (16%)	109.52% (18%)	
<b>LIQUIDITY RISK</b>									
Share of immediately liquid assets in highly volatile funds	18.55 %	18.00 %	8174.67 %	0.22 %	3.84 % (8 %)	7.67 % (28 %)	18.66 % (32 %)	251730.18 % (31 %)	
Share of liquid assets (incl. collateral from reverse repo trades) in volatile funds	54.46 %	56.74 %	80.95 %	0.22 %	29.16 % (11 %)	45.64 % (45 %)	73.87 % (24 %)	1663.25 % (20 %)	
Indicator of fixed and illiquid assets (excl. branches)	40.82 %	43.89 %	44.70 %	2.31 %	13.42 % (4 %)	36.15 % (34 %)	56.39 % (25 %)	79.35 % (26 %)	
Share of loans in deposits and issued securities	74.34 %	64.64 %	88.87 %	13.27 %	62.98 % (26 %)	87.50 % (52 %)	127.36 % (18 %)	1069.55 % (4 %)	
Total liquidity position current up to 7 days /assets	-39.57 %	-39.07 %	-39.57 %	-64.50 %	-47.20 % (43 %)	-24.22 % (39 %)	-0.37 % (6 %)	100.00 % (12 %)	
Total liquidity position estimated up to 7 days /assets	-8.80 %	-7.48 %	-8.80 %	-96.51 %	-16.91 % (28 %)	-9.14 % (38 %)	2.26 % (7 %)	100.00 % (27 %)	
Total liquidity position current up to 3 months /assets	-44.97 %	-43.43 %	-44.97 %	-69.29 %	-47.32 % (46 %)	-23.67 % (31 %)	-13.32 % (10 %)	100.00 % (12 %)	
Total liquidity position estimated up to 3 months / assets	-12.96 %	-9.70 %	-12.96 %	-96.43 %	-22.51 % (8 %)	-13.91 % (33 %)	1.25 % (45 %)	100.00 % (14 %)	
<b>CAPITAL ADEQUACY</b>									
Capital adequacy ratio (excl. branches)	11.97 %	13.50 %	11.86 %	8.75 %	10.17 % (57 %)	13.87 % (14 %)	18.32 % (15 %)	47.84 % (2 %)	0
Share of Tier I in own funds (excl. branches)	89.28 %	91.32 %	88.01 %	68.60 %	77.26 % (10 %)	88.53 % (45 %)	99.59 % (28 %)	100.00 % (5 %)	
Share of own funds in balance-sheet total (excl. branches)	10.57 %	7.74 %	7.42 %	4.61 %	6.37 % (64 %)	8.95 % (13 %)	11.33 % (7 %)	52.43 % (5 %)	
Share of potential loss in own funds in reaching 8% capital adequacy (excl. branches)	33.17 %	34.54 %	26.90 %	8.56 %	21.35 % (57 %)	42.33 % (14 %)	56.32 % (15 %)	83.28 % (2 %)	

Figures in brackets below the quartile values represent the share of banks (measured by volume of net assets) for which the value of the indicator lies between the value of the given quartile and the previous quartile.

## B 2 Insurance companies

### B 2.1 Net profit and profitability indicators of insurance companies (data on profit in thousands of SKK)

	Value as at 30.6.2008	Value as at 30.6.2007	Y/y change	Share in total written premium
Total net profit	2 436 035	3 341 152	-27.09%	7.44%
ROA	1.46%	2.14%		
ROE	7.72%	11.23%		

### B 2.2 Technical premium (in thousands of SKK)

	Value as at 30.6.2008	Value as at 30.6.2007	Y/y change	Share in total written premium	CR3	HHI 30.6.2008	HHI 30.6.2007
<b>Total</b>	32 731 322	29 359 377	11.49%	100.00%	60.90%	1730	1889
<b>Life insurance</b>	16 406 062	13 772 508	19.12%	50.12%	55.35%	1401	1581
Whole life and endowment assurance (A1)	10 699 401	8 686 071	23.18%	32.69%	63.52%	1674	1723
Insurance connected with an investment fund (A4)	3 796 131	3 156 935	20.25%	11.60%	54.76%	1411	1954
Accident or sickness insurance (A6)	1 611 756	1 541 019	4.59%	4.92%	68.22%	1723	1800
Other	298 774	388 483	-23.09%	0.91%	89.00%	4194	3263
<b>Non-life insurance</b>	16 325 260	15 586 869	4.74%	49.88%	73.60%	2365	2435
Automobile liability insurance (B10a)	5 648 352	5 558 195	1.62%	17.26%	79.62%	2812	2873
Motor-hull insurance (B3)	4 646 202	4 454 994	4.29%	14.19%	76.60%	2373	2447
Property damage insurance (B8+B9)	3 512 300	3 469 420	1.24%	10.73%	71.13%	2499	2694
Other	2 518 406	2 104 260	19.68%	7.69%	65.82%	1929	1738

The calculation of CR 3, CR 5 and HHI covers only those institutions having a positive value of the given item.

In the case of all institutions having an equal share, the HHI value would be 400, were the number of institutions 25.

### B 2.3 Technical premium ceded to reinsurers (in thousands of SKK)

	Value as at 30.6.2008	Value as at 30.6.2007	Y/y change	Share in total written premium
<b>Total</b>	4 240 912	4 897 857	-13.41%	12.96%
<b>Life insurance</b>	316 565	598 404	-47.10%	1.93%
<b>Non-life insurance</b>	3 924 347	4 299 453	-8.72%	24.04%

## B 2.4 Technical indemnity costs (in thousands of SKK)

	Value as at 30.6.2008	Value as at 30.6.2007	Y/y change	Share in total written premium	CR3	HHI 30.6.2008	HHI 30.6.2007
<b>Total</b>	13 950 589	11 267 530	23.81%	43%	66%	1894	2180
<b>Life insurance</b>	6 775 827	4 988 117	35.84%	21%	63%	1663	2395
Whole life and endowment assurance (A1)	5 465 389	3 964 127	37.87%	17%	67%	1821	2811
Insurance connected with an investment fund (A4)	708 756	494 703	43.27%	2%	89%	3862	3699
Accident or sickness insurance (A6)	301 436	289 083	4.27%	1%	64%	1711	2208
Other	300 246	240 204	25.00%	1%	89%	4249	3971
<b>Non-life insurance</b>	7 174 762	6 279 413	14.26%	22%	79%	2485	2442
Automobile liability insurance (B10a)	2 371 136	2 085 779	13.68%	7%	83%	2940	2750
Motor-hull insurance (B3)	3 061 229	2 839 843	7.80%	9%	77%	2471	2361
Property damage insurance (B8+B9)	1 262 994	917 837	37.61%	4%	88%	2602	3293
Other	479 403	435 954	9.97%	1%	70%	2317	1698

The calculation of CR 3 and HHI covers only those institutions having a positive value of the given item.

In the case of all institutions having an equal share, the *HHI* value would be 400, were the number of institutions 25.

## B 2.5 Loss ratio in non-life insurance

	Values as at 30.6.2008	Values as at 30.6.2007
<b>Total</b>	54.36%	54.58%
Automobile liability insurance (B10a)	48.66%	50.96%
Motor-hull insurance (B3)	68.82%	66.17%
Property damage insurance (B8+B9)	60.68%	62.92%
Other	25.92%	23.05%

## B 2.6 Technical provisions structure of insurance companies (in thousands of SKK)

	Value as at 30.6. 2008	Value as at 30.6.2007	Y/y change	Share in total provisions
<b>Total</b>	121 524 758	110 401 612	10.08%	100.00%
Reserve for covering payables from financial placement on behalf of the insured	74 233 253	67 713 678	9.63%	61.08%
Non-life insurance	13 708 857	11 590 717	18.27%	11.28%
Non-life insurance	33 582 649	31 097 217	7.99%	27.63%



## B 2.7 Placement of insurance companies' technical provisions of except for provisions for covering payables from financial placement on behalf of the insured (in thousands of SKK)

	Value as at 30.6.2008	Value as at 30.6.2007	y/y change	Share in total provisions
Total	117 860 191	102 643 077	14.83%	109.32%
Government and central bank bonds of SR / EU states or guaranteed by the SR, EIB, EBRD and IBRD bonds	41 942 832	39 063 882	7.37%	38.90%
Bank bonds	21 186 691	14 378 953	47.35%	19.65%
Term accounts at banks	11 414 605	9 758 784	16.97%	10.59%
Mortgage bonds	14 961 903	12 277 312	21.87%	13.88%
Reinsurance	8 599 075	9 080 977	-5.31%	7.98%
Other	19 755 085	18 083 169	9.25%	18.32%

The calculation of CR 3 and HHI covers only those institutions having a positive value of the given item. In the case of all institutions having an equal share, the HHI value would be 400, were the number of institutions 25.

## B 3 Old-age pension saving

### B 3.1 Pension fund management companies as at k 30.6.2008

	Market share *	NAV of funds (in thousands of SKK)	Number of customers
Allianz - Slovenská DSS	31%	18 174 262	450 725
Axa DSS	28%	16 420 258	396 391
VÚB Generali DSS	15%	8 597 615	201 106
ING DSS	11%	6 504 370	156 673
AEGON DSS	10%	6 169 130	199 488
ČSOB DSS	6%	3 339 459	100 262

(\*)Market shares are calculated according to the total net asset value (NAV) of funds of the given pension fund management company. NAV – Net Asset Value

### B 3.2 Economic result of pension fund management companies as at 30.6.2008 (in thousands of SKK)

	Revenues	Expenditures	Profit/loss	ROA	ROE
Allianz - Slovenská DSS	245 254	120 338	124 916	9%	9%
Axa DSS	101 227	133 209	-31 982	-1%	-1%
VÚB Generali DSS	55817	50 048	5 769	2%	2%
ING DSS	42 138	81 107	-38 969	-7%	-7%
AEGON DSS	43 419	30 720	12 699	3%	3%
ČSOB DSS	21 580	34 526	-12 946	-3%	-3%

### B 3.3 Pension funds (in thousands of SKK)

	NAV as at 30.6.2008
Total	59 205 094
Conservative	2 347 852
Balanced	17 538 249
Growth	39 318 993

NAV – Net Asset Value

### B 3.4 Structure of pension funds' investment of (in thousands of SKK)

	Value as at 30.6.2008	Share of EUR	Share of other foreign currencies
Total	59 205 094	3.93%	4.60%
Accounts at banks	16 668 749	4.35%	2.58%
Bonds	32 919 876	9.79%	4.94%
Shares	6 631 191	54.74%	45.13%
Other	14 494 395	14.13%	8.35%
Payables	-11 509 117	63.43%	30.71%

### B 3.5 Supplementary pension companies as at 30.6.2008

	Market share *	NAV of funds (in thousands of SKK)	Number of customers
ING Tatry - Sympatia, d.d.s., a.s.	39%	10 484 611	334 046
Doplnková dôchodková spoločnosť Tatry banky, a.s.	28%	7 482 865	209 307
Stabilita, d.d.s., a.s	19%	5 056 164	161 537
Axa d.d.s., a.s.	13%	3 535 839	148 185
AEGON d.d.s., a.s.	0%	9 873	1 482

(\*)Market shares are calculated according to the total net asset value (NAV) of funds of the given pension fund management company.  
NAV – Net Asset Value

### B 3.6 Economic result of supplementary pension companies as at 31.12.2006 (in thousands of SKK)

	Revenues	Expenses	Profit/loss	ROA	ROE
ING Tatry - Sympatia, d.d.s., a.s.	167 313	134 413	32 900	8%	13%
Doplnková dôchodková spoločnosť Tatry banky, a.s.	74 584	53 027	21 557	12%	17%
Stabilita, d.d.s., a.s	75 533	47 749	27 784	25%	27%
Axa d.d.s., a.s.	39 919	35 579	4 340	2%	2%
AEGON d.d.s., a.s.	1 006	12 228	-11 222	-15%	-16%

### B 3.7 Supplementary pension funds (in thousands of SKK)

	NAV as at 30.6.2008
Total	26 569 351
Contribution	25 796 892
Payroll	772 459

NAV – Net Asset Value

### B 3.8 Investment structure of supplementary pension funds (in thousands of SKK)

	Value as at 30.6.2008	Share of EUR	Share of other foreign currencies
Total	26 569 351	2.30%	1.20%
Accounts at banks	10 128 537	10.26%	0.61%
Bonds	15 552 789	7.09%	0.70%
Shares	638 811	32.11%	56.67%
Other	2 724 343	14.17%	1.67%
Liabilities	-2 475 128	85.63%	10.52%

## B 4. Collective investment

### B 4.1 Asset management companies as at 30.6.2008

Asset management company	NAV of mutual funds (in thousands of SKK)	Market share
Total	138 733 487	100.00%
Tatra Asset Management	60 584 027	43.67%
Asset Management SLSP	32 908 481	23.72%
VÚB Asset Management	28 566 910	20.59%
ČSOB Asset Management	7 295 948	5.26%
Prvá penzijná	4 027 763	2.90%
ISTRO Asset Management	1 798 239	1.30%
AIG Funds Central Europe	1 791 735	1.29%
Investičná a Dôchodková	749 987	0.54%
KD Investments	521 816	0.38%
Allianz Asset Management	488 581	0.35%

NAV – Net Asset Value

### B 4.2 Expenditure, revenues and profitability indicators of domestic asset management companies as at 30.6.2008 (in thousands of SKK)

Asset management company	Revenues	Expenses	Profit/loss	ROA*	ROE*
Total	914 229	743 498	170 731	9%	11%
AIG Funds Central Europe	27 657	24 688	2969	4%	4%
Allianz Asset Management	5 739	11 831	-6092	-5%	-5%
Asset Management SLSP	191 229	161 297	29 932	12%	23%
ČSOB Asset Management	93 277	74 095	19 182	7%	8%
Investičná a dôchodková	9 103	7 645	1 458	2%	2%
Istro Asset Management	16 541	14 729	1 812	2%	2%
KD Investments	9 654	14 467	-4 813	-8%	-9%
Prvá Penzijná	35 259	28 706	6 553	6%	7%
Tatra Asset Management	358 713	255 471	103 242	16%	17%
VÚB Asset Management	167 057	150 569	16 488	14%	18%

\*Values of ROE and ROA were annualized

### B 4.3 Structure of mutual funds as at 30.6.2008 (in thousands of SKK)

Fund type	Market share	Net asset value	Number of funds	CR3 *	CR5 *	HHI *	HHI if uniform distribution
Total mutual funds	100%	161 712 430	594	42%	50%	693	17
Domestic	85.79%	138 733 487	125	41%	50%	677	80
Money market funds	45.62%	73 774 586	13	77%	93%	2 138	769
Bond funds	9.77%	15 807 193	13	70%	86%	2 003	769
Equity funds	3.11%	5 028 909	11	75%	88%	2 069	909
Mixed funds	8.02%	12 970 877	16	52%	68%	1 367	625
Funds of funds	9.36%	15 129 395	19	54%	78%	1 337	526
Other funds	6.70%	10 833 180	7	73%	95%	2 156	1 429
Special funds	0.45%	730 315	1	100%	100%	10 000	10 000
Real estate funds	2.21%	3 571 397	4	93%	100%	3 273	2 500
Closed funds	0.55%	887 635	41	27%	40%	468	244
Foreign (**)	14.21%	22 978 943	469	21%	29%	256	21
Money market funds	2.56%	4 139 209	26	84%	92%	3 616	385
Bond funds	1.81%	2 930 069	93	52%	66%	1 371	108
Equity funds	5.06%	8 186 776	229	37%	48%	634	44
Mixed funds	0.69%	1 110 478	54	67%	79%	1 675	185
Funds of funds	0.35%	570 719	23	85%	92%	5 271	435
Other funds	3.74%	6 041 692	44	20%	32%	411	227

(\*)Market concentrations are calculated only for open mutual funds (do not include closed and special funds)

(\*\*)For foreign mutual funds the net asset value represents units sold in the Slovak Republic

The calculation of CR 3, CR 5 and HHI covers only those institutions having a positive value of the given item. In the column "HHI if uniform distribution" the HHI value is that which would express the concentration in the case of a uniform distribution of the net asset value in the given group of funds.

## B 4.4 Net sales of open mutual funds as at 30.6.2008 (in thousands of SKK)

	6 months	Number of funds	HHI	HHI if uniform distribution
Total open mutual funds	7 162 619	549		18
Domestic	8 071 233	80	1 243	125
Money market funds	9 200 507	13	2 861	769
Bond funds	-1 883 702	13	7 442	769
Equity funds	547 045	11	4 894	909
Mixed funds	32 055	16	4 797	625
Funds of funds	-2 254 063	19	2 562	526
Other funds	2 355 953	7	5 647	1 429
Special funds	73 437	1	7 306	10 000
Foreign	-908 614	469	1 752	21
Money market funds	-29 459	26	7 569	385
Bond funds	-367 078	93	1 303	108
Equity funds	-461 667	229	700	44
Mixed funds	39 250	54	4 866	185
Funds of funds	69 549	23	2 677	435

The calculation of CR 3, CR 5 and HHI covers only those institutions having a positive value of the given item. In the column "HHI if uniform distribution" the HHI value is that which would express the concentration in the case of a uniform distribution of the net asset value in the given group of funds.

\*For bond funds all three-month net sales were negative, therefore the concentration indicators are not calculated

## B 4.5 Average performances of open mutual funds as at 30.6.2008 (% p.a.)

	3 months		1 year			3 years			
Total open mutual funds	-27.05%	-0.97%	13.95%	-56.38%	-2.27%	25.72%	-44.86%	0.06%	4.92%
Domestic	-14.07%	-0.36%	3.03%	-39.23%	-0.29%	11.71%	-17.88%	1.80%	4.69%
Money market funds	-0.61%	0.61%	0.97%	0.00%	2.87%	3.92%	0.00%	2.47%	3.18%
Bond funds	-10.15%	-1.22%	-0.45%	-16.39%	0.51%	5.03%	-12.63%	0.46%	2.61%
Equity funds	-14.07%	-9.69%	2.63%	-39.23%	-31.25%	-8.08%	-17.88%	-7.97%	4.69%
Mixed funds	-6.41%	-1.09%	0.47%	-26.77%	-4.29%	4.31%	-3.08%	0.65%	3.90%
Funds of funds	-2.98%	-0.73%	1.81%	-14.19%	-8.81%	2.06%	0.00%	0.48%	0.77%
Other funds	-1.73%	-0.43%	0.71%	-3.47%	-1.23%	1.24%	0.00%	0.00%	0.00%
Special funds	-0.43%	0.52%	3.03%	-5.42%	2.30%	11.71%	0.00%	N.A.	0.00%
Foreign	-27.05%	-4.51%	13.95%	-56.38%	-13.79%	25.72%	-44.86%	-10.10%	4.92%
Money market funds	-8.19%	-0.64%	0.71%	-26.61%	0.75%	9.39%	-38.24%	-1.94%	2.46%
Bond funds	-11.30%	-4.15%	1.76%	-26.04%	-6.75%	7.17%	-39.28%	-14.44%	0.39%
Equity funds	-27.05%	-7.80%	13.95%	-56.38%	-28.05%	3.90%	-44.86%	-11.66%	4.24%
Mixed funds	-12.26%	-7.60%	4.98%	-37.29%	-19.18%	5.52%	-39.72%	-24.50%	-13.58%
Funds of funds	-10.89%	-7.43%	-5.22%	-33.19%	-19.88%	0.47%	-23.17%	-21.25%	-19.71%
Other funds	-9.68%	-1.90%	5.46%	-23.32%	-4.85%	25.72%	-1.07%	-0.31%	4.92%

## B 4.6 Asset structure of domestic mutual funds as at 30.6.2008 (in thousands of SKK)

	Money market funds	Other funds
Total	74 108 421	65 428 619
Deposits at banks	33 101 209	10 794 367
Securities other than shares and mutual fund certificates	40 833 621	30 750 423
Shares and mutual fund certificates	102 466	15 681 325
Shares and other ownership interests	0	4 994 938
Financial derivatives	71 123	1 432 706
Other assets	3	1 774 861

\* Financial derivatives contains derivatives with positive and negative real value

## B 5 Securities dealers

### B 5.1 Basic characteristics of securities dealers as at 30.6.2008 (in thousands of SKK)

	Volume of trades	Market share	Volume of assets managed	Market share
Banks and branches of foreign banks	5 999 598 034	79%	3 090 735	5%
SD with capital over SKK 35 mil.	57 196	0%	44 176 446	77%
Others	25 531 975	0%	2 652 069	5%

Securities dealers who are not banks are divided by the size of their registered capital. Securities dealers with their registered capital of less than SKK 35 million are not licensed for providing IS-3 investment services (accepting a customer's instruction for the acquisition or sale of an investment instrument and its execution on the own account)

### B 5.2 Market concentrations by securities dealers' trading volumes

	Number of traders	CR3	CR5	HHI
Total	40	77%	95%	2453
Banks and branches of foreign banks	19	84%	96%	3073
SD with capital over SKK 35 mil.	6	100%	100%	10000
Others	6	98%	100%	5869

Market concentrations are calculated for current quarter.

The calculation of CR 3, CR 5 and HHI covers only those institutions having a positive value of the given item.

### B 5.3 Volume of trades by individual investment services as at 30.6.2008 (in thousands of SKK)

	IS - 1	IS - 2	IS - 3
Total trades	555 840 680	1 683 941 038	5 379 058 634
Shares	7 668 592	3 801 888	35 499
Bonds	5 116 003	68 240 508	52 011 281
Mutual fund certificates	10 311 942	109 481	0
Fungible securities	244 155	426 048	2 688 039
Foreign securities	23 658 348	758 455 584	716 180 818
Money market instruments	1 963 666	1 278 003	66 031
Futures	496 943 644	851 629 526	4 607 614 938
Forwards	1 958 182	0	462 028
Swaps	5 068 823	0	0
Options	2 907 325	0	0
Combinations	0	0	0

IS-1 – acceptance of a customer's instruction to acquire, sell or otherwise handle the investment instrument and the subsequent forwarding of the customer's instruction for the purpose of its realization.

IS-2 – acceptance of a customer's instruction to acquire or sell the investment instrument and its realization on an account other than the provider's account.

IS-3 – acceptance of a customer's instruction to acquire or sell the investment instrument and its realization on own account..

# Terminology and abbreviations

## Names of banks and their dividing into groups

### Big banks

*VUB* – Všeobecná úverová banka, a. s.  
*SLSP* – Slovenská sporiteľňa, a. s.  
*Tatra banka* – Tatra banka, a. s.

### Medium banks

*OTP* – OTP Banka Slovensko, a. s.  
*Dexia* – Dexia Banka Slovensko, a. s.  
*UniCredit* – UniCredit, a. s.  
*Volksbank* – Volksbank, a. s.  
*Istrobanka* – Istrobanka, a. s.

## Banks and branches of foreign banks connected with their own financial groups

*Citibank* – Citibank (Slovakia), a. s.  
*Komerční banka* – Komerční banka Bratislava, a. s.  
*Calyon* – Calyon Bank Slovakia, a. s.  
*ČSOB* – Československá obchodní banka, a.s.  
*ING* – ING Bank N.V., foreign bank branch  
*Commerzbank* – Commerzbank  
Aktiengesellschaft, foreign bank branch, Bratislava  
*HSBC* – HSBC Bank plc, foreign bank branch  
*MAIS* – Banco Mais, S. A., foreign bank branch

### Building Societies

*PSS* – Prvá stavebná sporiteľňa, a. s.  
*Wüstenrot* – Wüstenrot stavebná sporiteľňa, a.s.  
*ČSOB stavebná sporiteľňa* - ČSOB stavebná sporiteľňa, a. s.

### Non-classified banks

*Poštová banka* – Poštová banka, a. s.  
*Privatbanka* – Privatbanka, a. s.  
*SZRB* – Slovenská záručná a rozvojová banka, a. s.

### Insurance companies

*AEGON* – AEGON Životná poisťovňa, a.s.  
*Allianz* – Allianz Slovenská poisťovňa, a.s.

*Amslico* – AMSLICO AIG Life poisťovňa a.s.  
*Česká poisťovňa Slovensko* - Česká poisťovňa – Slovensko akciová spoločnosť  
*Poisťovňa ČSOB* – ČSOB Poisťovňa, a.s.  
*D.A.S.* – D.A.S. poisťovňa právnej ochrany, a.s.  
*Generali* – Generali Poisťovňa, a.s.  
*ING* – ING Životná poisťovňa, a.s.  
*Komunálna poisťovňa* – KOMUNÁLNA poisťovňa, a.s. Vienna Insurance Group  
*Kontinuita* – KONTINUITA poisťovňa, a.s. Vienna Insurance Group  
*Kooperativa* – KOOOPERATIVA poisťovňa, a.s. Vienna Insurance Group  
*OTP Garancia* – OTP Garancia poisťovňa, a.s.  
*OTP Garancia životná poisťovňa* - OTP Garancia životná poisťovňa, a.s.  
*Cardif* – Poisťovňa Cardif Slovakia, a.s.  
*HDI-GERLING* – POISŤOVŇA HDI-GERLING Slovensko, a.s.  
*Poisťovňa Poštovej banky* – Poisťovňa poštovej banky, a.s.  
*Poisťovňa SLSP* – Poisťovňa Slovenskej sporiteľne, a.s.  
*PSČP Rapid* – Prvá česko-slovenská poisťovňa Rapid, a.s.  
*QBE* – Q B E poisťovňa, a.s.  
*Poisťovňa TEDA* – TEDA životná poisťovňa, a.s.  
*UNION* – UNION poisťovňa, a.s.  
*UNIQA* – UNIQA poisťovňa, a.s.  
*Victoria* – VICTORIA-VOLKSBANKEN Poisťovňa, a.s.  
*Wüstenrot poisťovňa* - Wüstenrot poisťovňa, a.s.

### Terminology used

*Households* – the population, i.e. individuals' accounts  
*Retail* – households, sole traders and non-profit companies serving prevalingly households  
*Enterprises* – non-financial companies  
*Non-banking financial companies (NBFCs)* – other financial companies, financial

intermediaries, pension and mutual funds, insurance companies

*General government* – central and local government bodies

*Quick liquidity ratio* – immediately liquid assets / highly volatile funds

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

*CR n index* – the concentration of the *n* largest banks, i.e. the sum of the shares of their assets in total assets.

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

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

*Cost-to-income ratio* – defined as the share of total operating costs and net income from banking activity (purchased performances + staff costs + social costs + depreciation of tangible and intangible assets + taxes and fees / revenues from shares and ownership interests + net income from fees and commissions + net income from the securities operations + net income from derivatives operations + net income from the forex operations + net income from other operations)

*Household disposable income* – is calculated as the sum of the components of gross personal income of all household members (gross financial income from employment and closely related incomes, and gross non-financial income from employment, gross financial gains or losses from self-employment (including royalties and fees), unemployment benefits, older-page pension benefits, the survivor's pension benefits, sickness benefits, invalidity benefits and contributions for education) plus components of the gross income at the household level (income from rented assets or land, family benefits and contributions paid to families with children, the social exclusion not classified elsewhere, housing benefits,

regularly received financial transfers between households, interest, dividends, profit from capital investment in a non-registered business, income of persons younger than 16 years of age less regular property taxes, regular paid financial transfers between households, income tax, and social insurance contributions).

*Long position* – a position in which assets are greater than liabilities.

*Financial intermediation* – for the purpose of this analysis, the financial intermediation is understood as the financial cashflow between the subjects, not mediation of financial services

*Herfindahl index* – defined as the sum of the squares of the shares of individual banks' assets in total assets.

*Short position* – a position in which liabilities are greater than assets.

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

*Liquidity up to 7 days and up to 3 months* – the share of liquid assets and volatile funds, where liquid assets include cash in hand, the bank's current accounts at other banks and all Treasury bills and government bonds on which no right of lien is established, including those that the bank acquired in reverse repo trades, all claims against customers and banks with a residual maturity of up to 7 days, or up to 3 months and volatile funds are the sum of payables towards banks and customers up to 7 days, or 3 months.

*Liquidity cushion* – defined as the sum of cash in hand, government bonds, Treasury bills and NBS bills, loans to foreign banks, deposits at the NBS and the volume of assets on the domestic interbank market after deducting banks' payables towards the NBS, foreign banks and the DLMA public debt & liquidity management agency.

*Loan-to-deposit* – the share of loans to customers and the sum of deposits from retail, enterprises and financial companies plus issued mortgage bonds.

*Loan-to-value ratio* – defined as the proportion of the volume of a provided loan and the value of its security

*Default rate* – expresses the percentage of loans defaulting over the period monitored

*The open position for up to 3 months* - is the difference between, on the one hand, the sum of claims against customers and debt securities issued by banks and enterprises which have a residual maturity of up to 3 months, and, on the other hand, the sum of liabilities towards customers and issued securities which have a residual maturity of up to 3 months.

*Unit-linked reserve* – technical reserve that is created for life insurance linked with investment fund in insurance branch A4

*Defaulted loans* – loans in the case of which the bank has identified a devaluation of more than 50% or where the debtor is in more than 90 days' arrears with payment.

## List of insurance categories

### A – Life insurance

1. Whole-life insurance, pure endowment insurance or whole-life and endowment insurance (A1)

2. Endowment insurance or insurance of funds for child's maintenance (A2)

3. Insurance connected with capitalisation policies (A3)

4. Insurance according to points 1 and 3 connected with an investment fund (A4)

5. Pension insurance (A5)

6. Accident or sickness insurance, if it is an additional insurance according to a type stated in points 1 to 4 (A6)

### B – Non-life insurance

1. Accident insurance (B1)

2. Sickness insurance (B2)

3. Non-rail land vehicle-hull insurance (B3)

4. Rail vehicle-hull insurance (B4)

5. Aircraft insurance (B5)

6. Watercraft insurance (B6)

7. Transportation and baggage insurance (B7)

8. Insurance of property other than that stated in points 3 to 7, caused by fire, explosion, storm, natural hazards other than storms, nuclear energy, land slippage or subsidence (B8)

9. Insurance of other damage to property than that stated in points 3 to 7, arisen through hailstorm or freezing, or other causes (e.g. theft), unless these causes are included in point 8 (B9)

10.a) Automobile liability insurance (B10a)

10.b) Carrier liability insurance (B10b)

11. Liability insurance for ownership or use of aircraft, including carrier's liability (B11)

12. Liability insurance for ownership or use of watercraft, including carrier's liability (B12)

13. General liability insurance for damage other than stated in points 10 to 12 (B13)

14. Credit insurance (B14)

15. Surety insurance (B15)

16. Insurance of various financial losses resulting from performing an occupation, from insufficient income, from poor weather conditions, from loss of profit, from permanent general costs, from unexpected business expenditures, from loss of market value, from loss of regular income source, from other indirect commercial financial loss and other financial losses (B16)

17. Legal protection insurance (B17)

18. Travel assistance insurance (B18)

## Abbreviations

### Countries

AT Austria

BE Belgium

CY Cyprus

CZ Czech Republic

DE Germany

DK Denmark

EE Estonia

ES Spain



FI	Finland	IMF	International Monetary Fund
FR	France	MIM	metainformation system
GR	Greece	NAV	net asset value
HU	Hungary	NBS	National Bank of Slovakia
IE	Ireland	O/N	overnight interest rate
IT	Italy	p. p.	percentage point
LT	Lithuania	ROA	return on assets
LU	Luxembourg	ROE	return on equity
LV	Latvia	RWA	risk weighted assets
MT	Malta	SAX	Slovak stock index
NL	Netherland	SD	securities dealer
PL	Poland	SDX	Slovak bond index
PT	Portugal	SKK	Slovak koruna
SE	Sweden	SME	Small and medium enterprises
SI	Slovenia	SR	Slovak Republic
SK	Slovakia	VaR	value at risk
UK	Great Britain		

#### **Others**

AAMC	Association of Asset Management Companies
ALC	Association of Leasing Companies
ALCO	Asset and liabilities committee
AM	asset management
BIS	Bank for International Settlement
BRIBID	Bratislava interbank bid rates
BRIBOR	Bratislava interbank offered rates
BSSE	Bratislava Stock Exchange
CSD	Central Securities Depository
DLMA	Debt and Liquidity Management Agency
FC	foreign currency
CPI	consumer price index
EBOR	European Bank for Reconstruction and Development
ECB	European Central Bank
EIB	European Investment Bank
EMU	European Monetary Union
EU	European Union
EUR	euro
GDP	gross domestic product
HHI	Herfindahl index
IBRD	International Bank for Reconstruction and Development
IFRS	international financial reporting standards
IGF	Investment Guarantee Fund