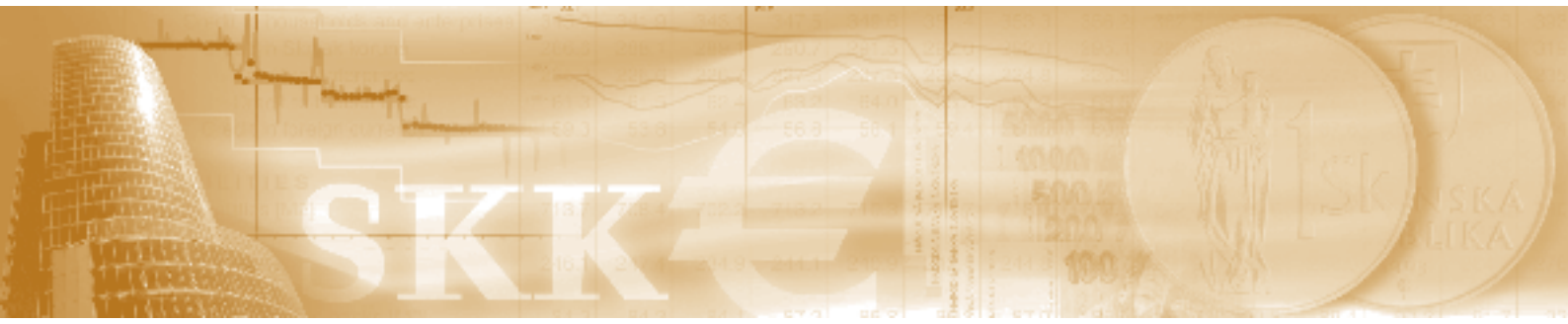
NÁRODNÁ BANKA SLOVENSKA



The Analysis of the Slovak Financial Sector for the Year 2007

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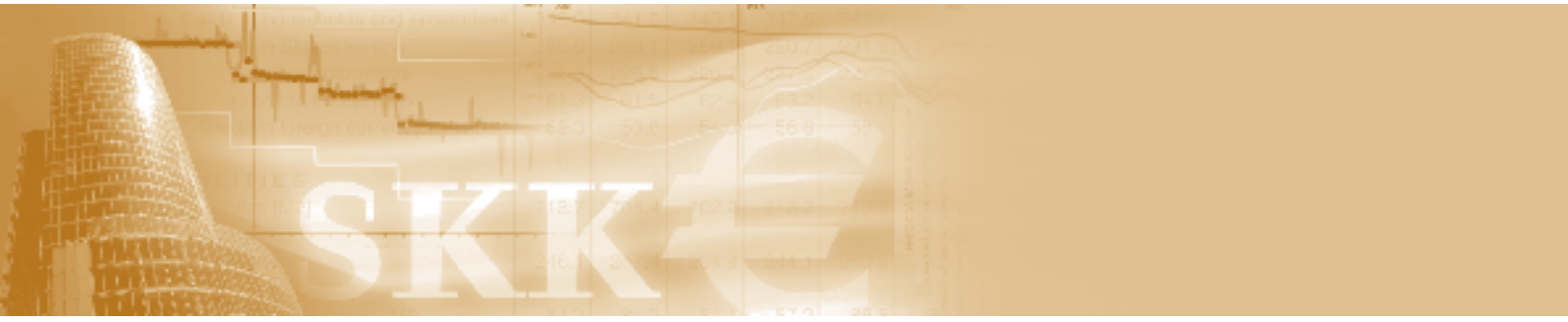


Introduction

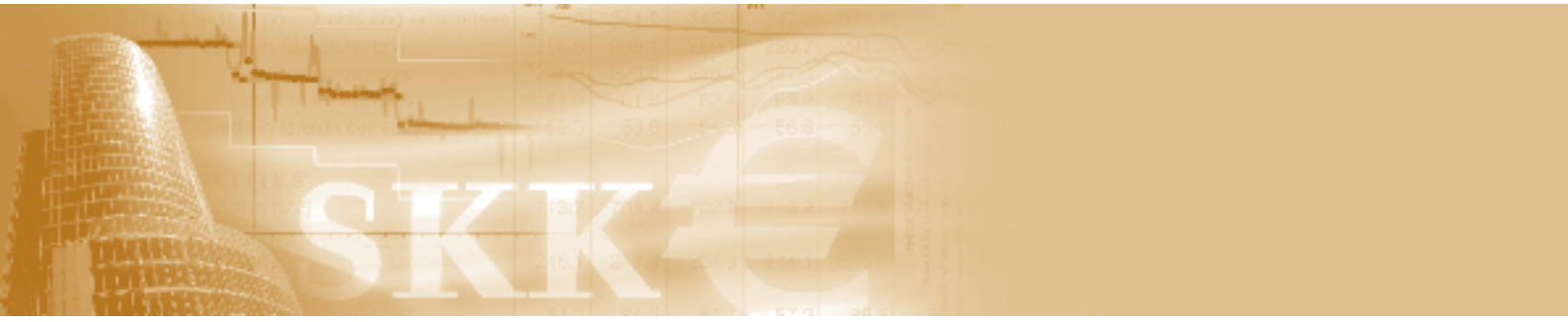
The Analysis of the Slovak Financial Sector for the Year 2007 follows directly The Analysis of the Slovak Financial Sector for the first half Year of 2007. The aim of this analysis is to describe and evaluate the development in the financial sector, with special focus on the assessment of risk which is financial institutions exposed to.

In comparison to the analysis for the first half of 2007, the current report focuses more emphasis on the risk analysis in the financial sector and stress testing. For this reason, the relevant chapters are therefore arranged separately after the analysis of trends and profitability in financial market individual sectors.

Financial information on particular institutions is primarily obtained from the banking supervision information system MIM, the system STATUS, STATUS DFT and documents processed by the departments of the Financial Market Supervision Unit. Additional sources included the Statistical Office of the Slovak Republic, Real estate price map, Eurostat, the European Central Bank (ECB), and other external sources and commercial information systems.

The data as of December 31, 2007 for the financial sector are preliminary, except for the banking sector data that are audited. Unless stated otherwise, all financial amounts are given in SKK.

Executive summary



Executive summary

Year 2007 – a positive development in terms of financial stability sector

A positive development of domestic economy in 2007 created space for a positive trend even in the Slovak financial sector. Almost all spheres of the financial sector noticed a growth trend in the sphere of assets, or assets under management. A volume of resources in financial institutions was growing especially in the first half-year of 2007. Assets, or property increase in the second half-year slowed down slightly in some segments of the financial market, which was related to a current crisis on financial markets and their lower performance. Altogether the volume of funds, which were under management of institutions monitored by NBS, increased by almost 20% in 2007. A high relative increase of funds under management in 2007 was noticed especially by funds of the second pillar of pension saving. Assets of mutual funds and banks also increased significantly.

From the sector stability point of view, an improving financial position of the sector is essential, whereby also the resistance of the sector against negative shocks was growing. Profit formation increased in all sectors.

An exposition of the financial sector against risks was increasing during 2007. However, the risks size did not threaten the stability of the financial sector as a whole.

Impact of world markets financial crisis on domestic sector was not significant

Since August 2007, a situation on world financial markets started deteriorating as a consequence of a negative development on the market of *subprime* mortgages in the USA. The impact of a contemporary crisis on the Slovak financial sector was insignificant by the end of 2007 even with regard to prevalent orientation of the financial sector on domestic economy. A direct exposure of the financial sector by keeping securities with underlying assets relative to the *subprime* loans or generally structured products was only minimal. Equity risks in some funds of pension fund management companies, supplementary pension companies and mutual funds increased as a consequence of volatility increase and uncertainty on capital markets.

The current crisis influenced performance of selected funds of pension savings and collective investment in a negative way. The banking sector noticed losses from trading, as well.

The total decrease of liquidity, which was accompanied by a current development on financial markets, did not affect the domestic financial sector significantly. The crisis by that time reflected on interest rates increase of long-term funds. The banking sector, which is generally the most sensitive on the state of liquidity, reported sufficiency of domestic primary funds.

Significant growth of loans to clients in the banking sector

In 2007 there was a dominant continuing growth of loans to clients in the banking sector. Banks financed especially the sectors of households and enterprises. The banks´ interest 2007 focused on financing small and medium enterprises. The growth of corporate credit loans on financing real estates continued, as well. Loans provided to households maintained a high growth rate, when the demand of households for loans was affected especially by the price growth of real estates.

Banks reduced securities investment on year-on-year basis. Especially holding of domestic government bonds was decreasing and by contrast, investment in foreign securities was increasing.

Growth of client loans was financed mainly from stable clients funds also in 2007. Thus the Slovak banking sector is one of the few banking sectors in the EU countries which is not dependent on short-term interbank funds when financing client loans. Retail deposits continued to grow despite the interest rates decrease, since mainly deposits in domestic currency were growing. Similarly, also enterprises and financial companies deposits, besides banks, continued growing. Despite a gradual increase of the loan-to-deposit ratio, the indicator value was at a favourable level during 2007. Banks also obtained funds by issuance of mortgage bonds.

Inflow of funds from foreign banks and then their short-term investment mainly in NBS continued in 2007. The volume of these operations stabilized in the second half-year.

Improvement of financial position of the banking sector

The banking sector kept a high rate of profit formation in 2007. When assessing the year-on-year profit rate from the point of view of financial sector stability, it is important that the number of banks with a year-on-year profit increased went up. Interest income accounted for the main part of revenues. These were increasing mainly in big banks when the banks used their position on the market and they increased interest income by means of a higher volume of credit loans. Importance of non-interest revenues decreased. While revenues from monetary conversions were developing positively at the level of the sector, revenues from trading with debt securities in selected banks decreased. Operational effectiveness of the banking sector slightly decreased year-on-year.

A trend of gradual decrease of an average value of capital adequacy was moderate within 2007. However, decrease of adequacy in selected banks did not stop whilst the value of adequacy approached the critical value of 8%. More banks increased the capital amount by drawing subordinated debt or profit formed in 2006. By an assumption of a continuous growth of credit loans in 2008, it will be necessary to increase capital in the selected banks.

A positive development in other financial market sectors

It was mainly the technical premium written in life insurance that increased in the insurance sector in 2007. Thus in 2007, there was the smallest difference between the technical premium written in life and non-life insurance in the history of Slovakia. By continuation of a faster growth of the technical premium written in life insurance than in non-life insurance, we can expect that in 2008, the technical premium written in life-insurance shall reach a higher value than the technical premium written in non-life insurance.

Profitability of insurance companies increased due to a higher growth of technical revenues compared to technical costs. Rentability of assets and capital increased slightly, as well.

There were no significant changes in placement of technical provisions and they continue to be placed in low-risk assets.

Net asset value under management in open-end mutual funds after a slight stagnation in 2006 increased by almost one quarter during 2007. Residential investment in mutual funds increased as well as net assets value under management of domestic asset management companies. The capital was transferred from equity and bond funds in the money market funds, mixed and other, maily secured funds. Stagnation of world financial markets caused a lower average performance of equity funds and similar funds, higher return compared to 2006 were brought by funds investing mainly in bond securities.

Volume of assets in pension asset management company's funds almost doubled in 2007. Relatively dynamically, from the point of view of net assets value, even the third pillar of pension savings was growing despite a relatively significant decline of savers. A structure of aggregate portfolio in both pillars was changing within the monitored period. In the second pillar funds it was towards moderately risky assets, and vice versa in the system of supplementary pension savings. Compared to the previous year, balanced and growth funds of pension assets management companies noticed a decrease of annual performance and they got below the level of performance of conservative funds.

Volume of client securities dealing by means of securities dealers has not changed. However, there were changes in the structure of traded instruments. Volume of bond dealing decreased by more than a half. On the other hand, operations with derivative instruments increased.

Debt of individual households was growing

Risks in the financial sector were affected by several trends in 2007. High growth of households' loans continued in the domestic sector in 2007, whereby the exposure of banks towards a credit risk from these loans was increasing. The household sector debt at the macro level achieved a low level in 2007, which is related mainly a relatively small number of households having loans from banks. On the other hand, the households which already have a loan, reach a higher level of debt. The level of burden by installments was mainly affecting the price growth of real estates in 2007. However, the household burden by installments was generally growing, whereby sensitivity of households on earnings decline was increasing from the credit risk point of view.

Volume of new loans with a low co-financing share by households significantly increased in more banks in 2007, which was mainly related to high prices of real estates. Thus risk of household loans becomes more sensitive to price changes of real estates. Even in 2007, households showed higher sensitivity to interest rates changes, since the loans with a short-term interest rate fixation prevailed with new housing loans.

High increase of loans was noticed by banks in relation to the corporate sector, too. Exposure towards the real estate sector increased significantly. These credit loans were an important part of the total credit

loans in some banks. Changes in approach of banks to these credit loans were noticed in the second half-year, since the banks also chose rather more careful approach by providing these credit loans as a consequence of a current crisis on the financial markets. The corporations maintained high sensitivity on the exchange rate change because a great part of credit loans was denominated in foreign currencies. We assume provision of these positions mainly in big enterprises.

Exposure of the banking sector towards market risks was rather low. Foreign exchange positions were closed in most of banks. Even exposure towards an interest rate risk did not change in 2007. Whilst in a trading book most of banks had almost closed their positions, banks showed the interest rate risk mainly in a banking book, especially in bands with a longer term of a balance fixation.

From the liquidity point of view, the situation in 2007 was characterized by a high ratio of funds sterilized in NBS as well as of other liquid assets. From a short-term point of view on liquidity, there were no more significant changes in the banking sector as the whole. From a long-term point of view on liquidity, even in 2007, it was held true that in most banks the credit loan activities were funded from clients deposits or issues of long-term securities and not from short-term interbank market funds.

Favourable results of stress testing in the banking sector

Increasing sensitivity of the banking sector on a credit risk is confirmed also by results of stress testing. Although the credit risk should not affect stability of the banking sector significantly, sensitivity of some banks to the risk increased within the second half-year. The main reason was mainly the decrease of capital adequacy of own funds in selected banks.

From the liquidity point of view, it is positive that the banking sector has a sufficient volume of current assets, by means of which it could cover an unpredicted withdrawal of a higher amount of client deposits or foreign banks deposits.

Similarly, the banking sector did not report even a high sensitivity to significant changes of market factors. Only sensitivity of a banking book to a rapid growth of interest rates was the exception.

However, by an interpretation of these conclusions we must take a big number of assumptions into consideration, which are described in detail in the section Stress testing. Moreover, most scenarios, the impact of which was considered individually, could be implemented together with other scenarios and thus their impact could be intensified more significantly. This applies also to results of stress testing in other sectors of the financial market.

Increase of equity risk in funds

Negative development on world markets in the second half of 2007 and the volatility growth related thereto reflected on the equity risk increase of selected funds. It was reflected mainly in some of the second and third pillar of pension savings funds and mutual funds.

The insurance sector was mainly exposed to insurance risks in 2007. The most important market risk was the interest rate risk, due to its high ratio of debt securities on assets covering technical provisions of insurance companies and their high duration.

Pension fund management companies were mainly exposed to market risks. Conservative funds were only exposed to interest rate risk, since they had no open-end equity or foreign exchange positions. This risk was low as well, since the funds held mostly bonds with a relatively short duration denominated in the Slovak koruna.

Balanced and growth funds were mainly exposed to equity risk. At the end of the first half of 2007, the risk of equity portfolios increased due to volatility growth on equity markets. Compared to this risk, the foreign exchange and interest rate risk was relatively insignificant.

Similar to the pension assets management companies funds, also the supplementary pension companies funds were mainly exposed to market risks. Majority of contribution funds is exposed to both to equity as well as interest rate risk, although in a different extent. Funds are exposed to foreign exchange risk mainly due to an unsecured long position accrued from investments in securities denominated in foreign currencies. Within the SPC funds, the growth subscriptions investing in a higher extent in equity and participation certificates are the riskiest.

In 2007, mutual funds were mainly exposed to a foreign exchange risk and equity risk. The foreign exchange risk represents a relatively significant risk for mutual funds. Due to an increasing volatility of equity markets during the second half of 2007, the equity risk in mutual funds increased.

Sensitivity of funds to significant decrease of equity markets

Even the stress testing results confirmed sensitivity of selected mutual funds, balanced and growth funds of pension savings to a sharp decrease of equity markets. Vulnerability of such funds was confirmed even by a combined scenario of foreign equity markets decrease connected with koruna evaluation against dollar and euro and increase of foreign interest rates.

The most significant negative impact would be the koruna strengthening to the value of investments in mutual funds, mainly in the funds investing in foreign equities.

In case of rates increase, securities covering technical provisions in more insurance companies would be exposed to a rapid decrease of value.

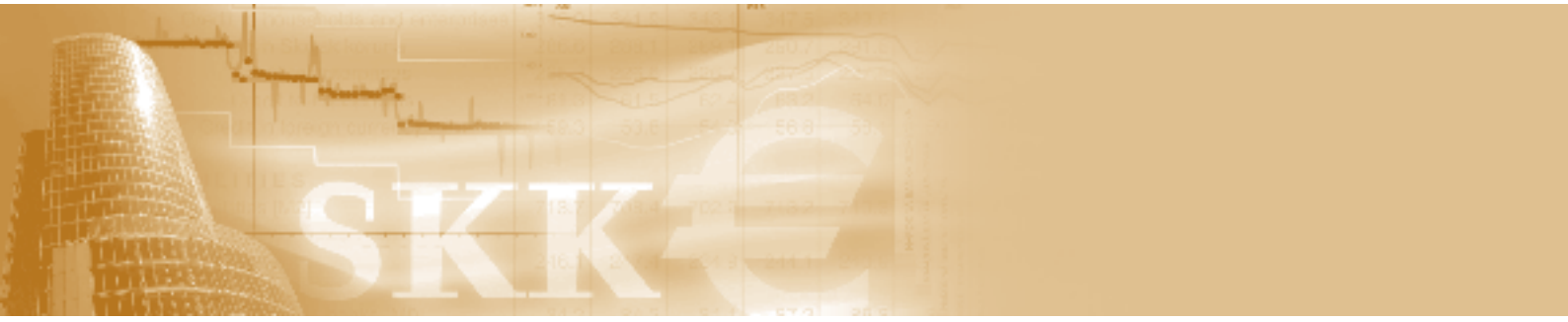
Box 1 The macroeconomic environment in Slovakia

The Slovak economy continued its dynamic growth also in 2007. Gross domestic product as measured in stable prices of the year 2000 increased in a year-on-year comparison by 10.4% in 2007. GDP growth was supported by both domestic and foreign demand. The main factor of the domestic demand was household consumption, which increased by 7.1% in 2007.

Unemployment rate kept decreasing even in 2007, by the end of December it stood at 8.0%. Average monthly salary reached SKK 20 146 in nominal terms in 2007, in a year-on-year comparison it increased by 7.2%. Real wage increased by 4.3%. Consumer prices measured by the HICP increased by 1.9% on average in 2007.

The National Bank of Slovakia reduced the base rate twice in the first half of 2007, by a total of half percentage point, the rate did not change in the second half-year. The yield to maturity of government bonds increased after a slight decrease in the first half-year, the yields of ten-year, five-year and two-year government bonds rose year-on-year by, respectively, 0.09 p. p., 0.25 p. p. and 0.46 p. p.

Charakteristics of the Slovak financial sector



Charakteristics of the Slovak financial sector

Activity of financial institutions

Despite the fact that the year 2007 was the year of increased volatility and uncertainty on global financial markets in its second half, it did not have a distinctive influence on the Slovak financial institutions activity. The reason was a prevailing focus of domestic institutions on Slovak economy.

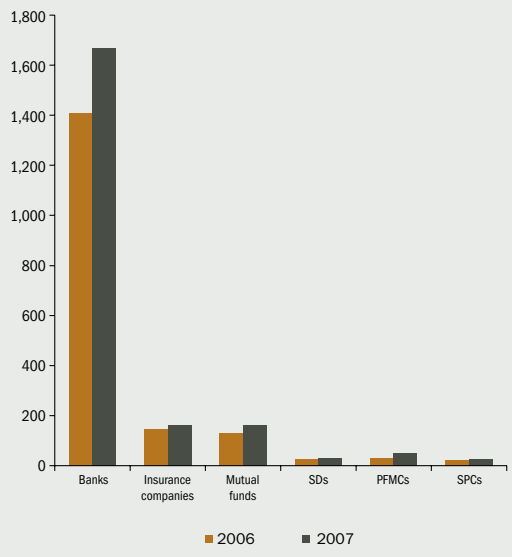
Concerning financial institutions regulated by the National Bank of Slovakia, the total value of their assets and assets under management increased by SKK 333.1 billion to the year-end level of SKK 2.092 billion during 2007, representing and increase by 18.9%. Growth of assets in more segments of the financial market in the second half-year slowed down moderately, which may also be related to the above-mentioned lower performance of global financial markets in some cases.

A determining fact remains for the Slovak financial sector that positive development of domestic economy created conditions for its organic growth similar to 2006.

The most significant asset growth was noticed by the pension funds of the 2nd pillar pension savings. During 2007 they increased by 83.5% and amounted to SKK 51.3 billion. Their importance increased not only in the context of pension savings, but also from the point of view of an important cumulation of funds in the economy in the time when the whole economic development and interest rate environment motivates Slovak households to debts rather than to savings. In this context, 18.7% asset growth of supplementary pension funds is a positive trend, amounting to SKK 25.3 billion.

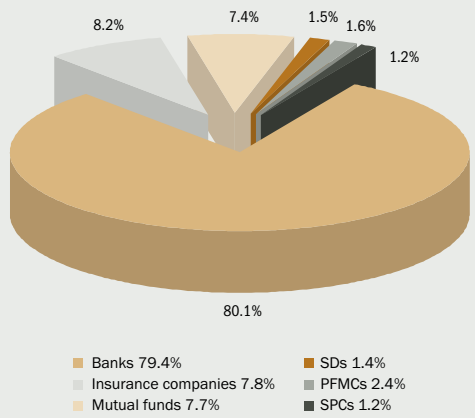
The second fastest growth (24.5%) was noticed by mutual funds, meaning a revival after stagnation in 2006. Unlike 2006, household investment into these funds was growing faster than the amounts on accounts in banks during 2007. This development was demonstrated as the deposit growth of mutual funds in banks.

Chart 1 **Amount of assets or assets under management in individual financial market segments (in SKK billions)**



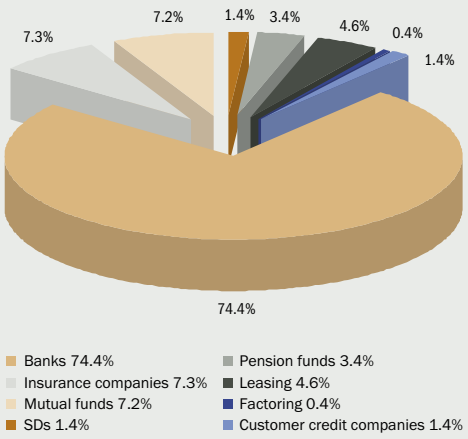
Source: NBS.

Chart 2 **Share on assets and assets under management by segments: subjects monitored by NBS (in %)**



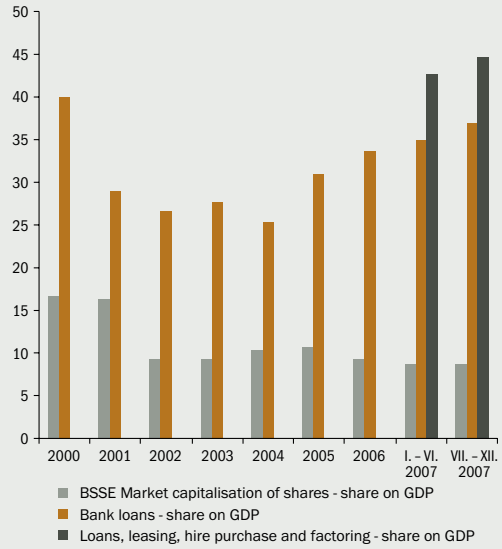
Source: NBS.

Chart 3 **Share on assets and assets under management by: all subjects (in %)**



Source: NBS.

Chart 4 **Market capitalization of equity bank loans, leasing, hire purchase and factoring as a share on GDP (in %)**



Source: NBS.

Assets growth in the banking sector was more moderate than in pension and mutual funds, as a consequence of which its share on assets decreased slightly. However, financial intermediation[1] by granting credits (from banks and other financial intermediaries) was developing faster than direct funding by means of issues on the Stock Exchange (chart 4).

Activity in the sphere of leasing and factoring was growing comparably to the whole activity of banks, insurance companies and collective investment during the year. A slightly faster development was noticed by a loan activity of non-banking institutions when loans granted to households by consumer credit companies and leasing companies increased by 36% in the second half of 2007, whereas the volume of bank household loans increased by 14% and in case of consumer loan, it was only 9%. (Table 1).

In the second half of 2007 the share of non-banking institutions on the market of consumer loans, credit cards and hire purchase increased from 33% to 37%.

Balance of the Financial Market

Similarly to the previous year, in 2007 the volume of liabilities of enterprises and households was increasing faster than the volume of their financial assets[2]. Difference in the growth of financial liabilities and assets was insignificant, leading to a slight increase of their ratio (loan-to-deposit[3]) from 73.5% to 76%.

Table 1 **Customer loan market in the second half of 2007**

	VI. 2007	XII. 2007	Absolute change	Relative change	Market share XII. 2007
Banks: Credit cards	3.59	4.64	1.05	29%	6.2%
Banks: Cons.credit loans	38.71	42.22	3.51	9%	56.5%
Other than banks: Cons. credit loans and hire purchase	20.47	27.81	7.33	36%	37.3%

Source: NBS.
Data in the second to fourth column of the chart are in SKK billions.

1 *For the purpose of this analysis, the financial intermediation is understood as financial cashflow between entities, not intermediation of financial services.*
2 *Due to data availability, we classify only financial assets and liabilites of enterprises and households reported by domestic financial institutions.*
3 *Loan: loans, i.e. liabilities. Deposit: deposits, investments in funds and life insurance, i. e. financial assets.*

Table 2 **Financial assets and liabilities of households and enterprises** **(in %)**

	Households		Enterprises		Total	
	XII. 06	XII. 07	XII. 06	XII. 07	XII. 06	XII. 07
Liabilities/GDP	16.0	17.2	25.3	26.2	41.3	43.4
Financial assets/GDP	39.1	40.1	17.5	17.2	56.6	57.3
Share of liabilities on assets	40.8	42.9	118.8	124.7	73.5	76.0

Source: NBS.

Shares of financial assets and liabilities on GDP increased only moderately concerning a relatively dynamic economic growth in 2007.

There are two interesting facts in this context. The first one is a relatively slow increase of liabilities ratio on financial assets in case of households. In other words, a dynamic growth of household debts is compensated by an increase in volume of their financial assets. A part of these assets – funds invested in the second pillar pension funds – have a limited liquidity though, and they may not be used directly as funds disposable for covering household liabilities.

The second one is the fact that indebtedness of enterprises and households is not gorwing much faster than the economic growth (Table 2).

Thus the growth of household loans at the aggregate level is consistent with the growth of their financial assets and the growth of enterprises and households loans conforms to the growth of the Slovak economy at least approximately. However, these facts do not provide any information about the internal structure of the loan growth and risks connected thereto.

Financial Assets of Households

Growth of all main types of household financial assets continued also in 2007. A dominant part is still created by the most liquid funds, i.e. bank deposits[4], investments in mutual funds and unit-linked products. They increased by SKK 80.5 billion (by 14%) in 2007, which was mainly a result of bank deposit increase by SKK 62 billion.

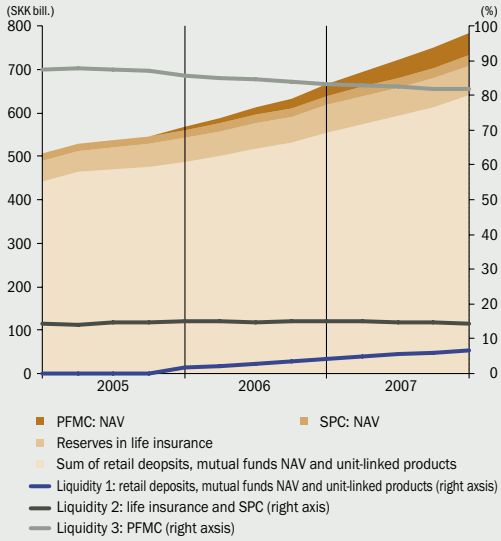
Less liquid household assets, i.e. life insurance and the 3rd pillar of pension savings[5] were increasing at the level of 10%.

The fastest growing household assets were the least liquid[6] 2nd pillar´s pension funds. As a consequence of their year-on-year increase by 84% they amounted to SKK 51 billion by the end of 2007 (Chart 5).

Performance of individual types of household financial assets was generally a function of their liquidity, risk premium[7] and the way how the yield is determined. For the purpose of this analysis we can divide them into three categories.

The first category is household financial assets, where the income and risk are assigned by an institution managing these assets (risk is eventually moderated by the existence of guarantee scheme). Depending on liquidity and the guarantee scheme, we can talk

Chart 5 **Financial assets of households: changes from the liquidity point of view (in SKK billion)**



Source: NBS.

4 In this case we consider the liquidity of currect accounts and term deposits very close, since households can demand them practically anytime.

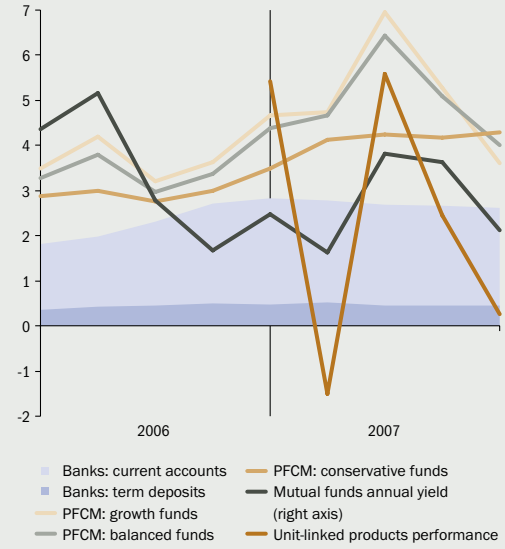
5 Life insurance and pension saving in the 3rd pillar are not identically liquid, their important common feature is tax allowance for a household, title to benefit after fulfilling certain (also time) conditions and with certain exceptions, also immediate title to a certain part of sum saved. There is a difference in tax allowance of the 3rd pillar from the employer´s point of view.

6 Low liquidity of the 2nd pillar funds consists mainly in their maturity to the length of savings (minimum age of 15) and the age of a saver (minimum age of 55) without a possibility to repurchase the sum saved.

7 In this case the risk is understood as a probability of loss of a part of the capital.

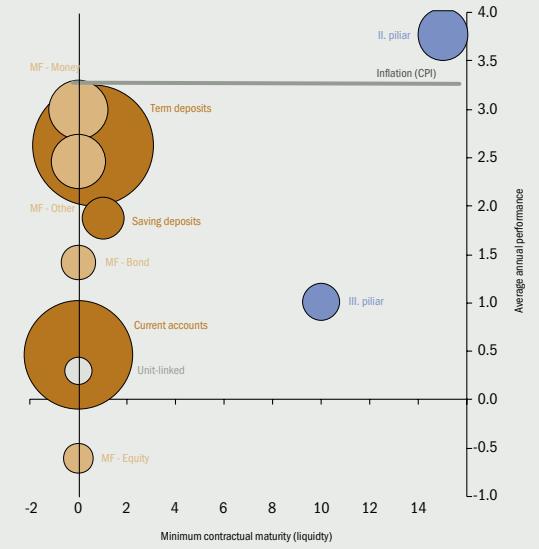
Chart 6 **Performance of types of household financial assets**

(in p. a.)



Source: NBS.
Data on return written in life insurance are not available.

Chart 7 **Structure of household financial assets of by performance, liquidity and risk**



Source: NBS.
The circle size represents the volume of assets by a given product.
Data on return written in life insurance are not available.

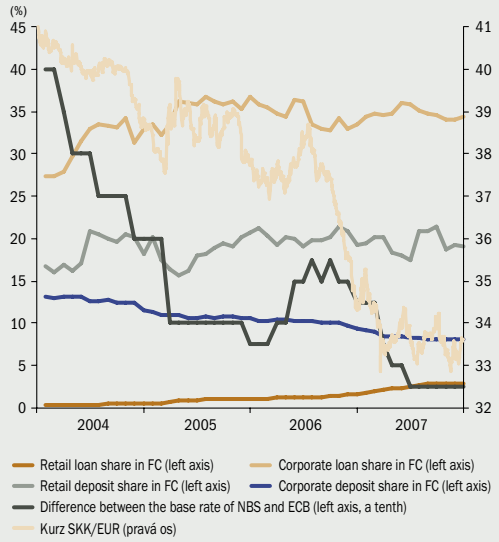
about bank deposits or life insurance. Their relatively lower income is then given mainly by the fact that it is guaranteed by an institution itself and it is not directly dependent on the development on the financial markets, since client assets are not separated from the company assets. Bank deposits serve as an example, which are on one hand immediately liquid and relatively the least risky. Thus on the other hand, they provided the smallest yield in the long term. In December 2007 it was on average 0.5% on current accounts and 2.6% on term deposits (Chart 6).

The second category is funds invested in mutual funds and unit-linked products. They are immediately liquid indeed, but they are the most risky at the same time, mostly due to the fact that not only their performance depends on the development of the financial markets, but also the risk of invested funds loss. The asset management company or an insurance company, in this case, guarantees neither an income nor invested capital. Also owing to this, income from these investments is the most volatile (Chart 6).

The third category are the pension funds, which indeed work on the same principle (fund assets are separated from savers assets), but the regulation in the investment area and risks is considerably stricter in this case, which was reflected by smaller fluctuations in income, whilst the smallest income volatility was in funds with the most conservative approaches to investment. Owing to this pension funds character, the negative situation on world financial markets in the second half of 2007 did not lead to such a decrease of incomes than in case of mutual funds (mainly equity ones) and unit-linked products (Chart 6).

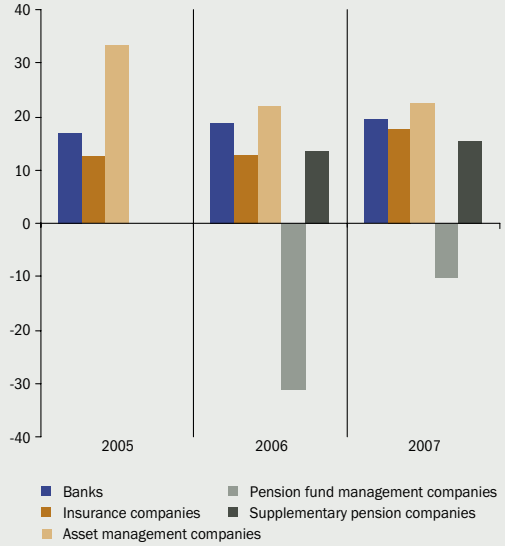
A particular relationship of liquidity and performance of individual types of household financial assets is apparent also from Chart 7. Explanation of important trend variations consists mainly in the difference of individual investments risk and eventually in the charge policy of institutions regulating particular assets. Compared to 2006, the biggest change of profitability occurred in equity funds which sensitively reacted to the development on the financial markets. Return decrease in bond funds happened as a result of the Slovak koruna evaluation compared to currencies in which fund investments were denominated. Most probably, the poor performance in the 3rd pillar can be explained by high fees for the fund management, which very often reach the maximum legal limit of 3% p. a. of the average annual net asset value in the fund. Besides fees for the fund management, the savers are taken from their investment performance in the third pillar in a way of taxes, rewards to a depository, fees for compensating trades from securities and other different costs, which are reimbursed from the fund assets (unlike the second pillar where these are born by the management company).

Chart 8 **Household deposits and loans currency composition, exchange rate and interest differential**



Source: NBS, ECB.
Shares in foreign currency are counted on total deposits, or retail or enterprises loans.

Chart 9 **Average ROE value in individual sectors in December 2005, 2006 and 2007**



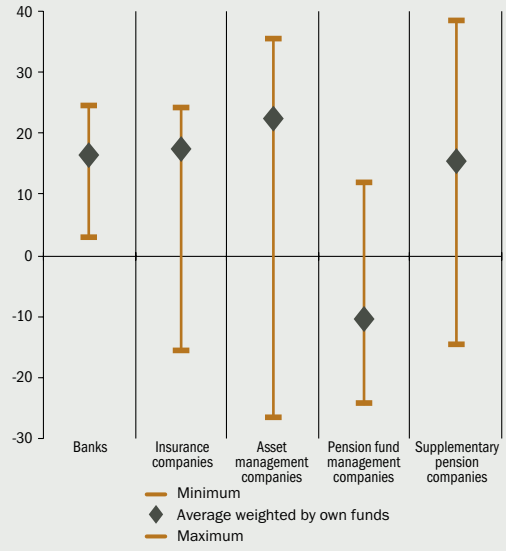
Source: NBS.

Changes in Currency Composition of Household and Enterprise Financial Assets and Liabilities against Banks

During the first half of 2007, a long-term trend of income decrease and household loan growth denominated in foreign currencies continued. This trend was logical due to existence of interest differential and mainly an assumption of domestic currency appreciation against euro (Chart 8).

The trend of changing ratio of foreign currency deposits and foreign currency loans on total deposits and loans in the second half of 2007 slowed down significantly, these ratios have not changed since September 2007. On one hand, primary reasons of such behaviour vanished, i.e. an interest differential between the base rate of ECB and NBS remained at the level of 25 basic points and the koruna appreciation against the euro was stopped in the second half of the year. However, on the other hand, the expectations of Slovakia entering the Euro zone increased, which can be considered a factor in favour of denomination in Euro mainly in case of loans.

Chart 10 **ROE Intervals of individual sectors in December 2007**



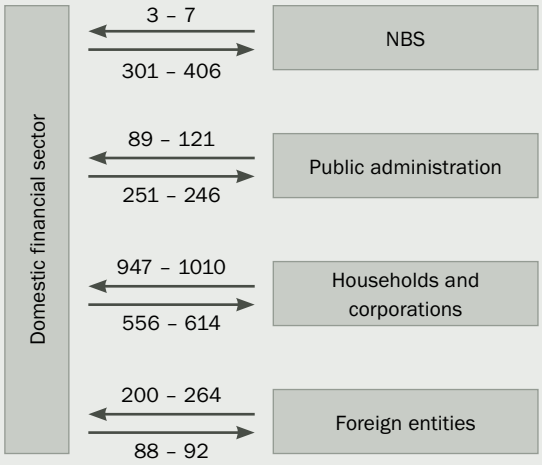
Source: NBS.

Investment performance and institution profitability

Since the year 2007 – mainly in its second half – was not ideal from the point of view of world financial markets performance, it is positive that the Slovak financial sector did not suffer from any losses, which would have been shown on average values (Chart 9, Chart 10).

Indeed, this is contrary to the performance decline in household financial assets, which are managed by these institutions and which in most cases responded to the situation on the financial markets. However,

Scheme 1 **Selected relation of the financial sector and other sectors, December 2006 and December 2007 (in SKK billion)**



Source: NBS.
Numbers above the arrows: first from left – December 2006, second from left – December 2007.
Note: The general data include government bonds and Treasury bills. NBS data include NBS bills.

this contrast is, according to the character of above-described investments, quite logical. Separation of fund assets and management company assets protects the client against bad manager´s operations on one hand, but on the other hand, it provides conditions for the manager to generate profit (on the basis of management fees) without a direct exposure to eventual unfavourable development on global financial markets.

Majority of financial market segments managed to increase capital return, or reduce loss. The banking sector is an exception, this issue is described in the chapter on the banking sector profit rate.

Selected Financial Flows

During 2007 the financial flows intensified between the Slovak financial sector and all remaining main domestic economic sectors and also foreign countries as a whole. Mutual financial connection was increasing in assets as well as in liabilities of the parties concerned. The biggest creditor and debtor of the financial sector are the real economy entities, i.e. enterprises and households. The value of deposits provided by these two sectors to financial institutions amounted to SKK 1.083 billion as of December 31, 2007, which is by SKK 136 billion more than the previous year. A very similar absolute increase was noted also by enterprise and household debts towards the financial sector and by the end of 2007 its value was SKK 687 billion. In percentage, liabilities of enterprises and households against financial sector were growing faster than receivables. The foreign banks helped the inflow of the financial sector funds, too, during the year. Also owing to such development, the active position of domestic financial sector in relation to NBS increased year-on-year by 93 billion, whereby the volume of funds sterilized as of December 2007 amounted to SKK 394 billion (Scheme 1).

A central role in the process of financial intermediation is definitely played by the banking sector in Slovakia. Besides enterprises and households, which participate in the banking sector assets and also liabilities to the greatest extent, the banks are a significant intermediary also for the remaining types of financial market institutions. The 2nd and 3rd pillar´s pension saving companies, the collective investment companies, insurance companies and other financial companies – all these goups of entities have several tens of billions of SKK placed on current or term accounts of domestic banks together amounting to SKK 113 billion. Moreover, bank loans represent an important fund of activities financing for other financial companies.

After a slight funds outflow from the domestic institutions funds of collective investment in 2006, the mutual funds became an interesting alternative to depositing the capital to the accounts in banks. Increase of household funds in domestic mutual funds represented SKK 20 billion. More investment from Slovakia was collected also in foreign mutual funds.

Long-term assets of households are deposited mainly in both pension savings' capitalization pillars and in investment and capital life insurance. The volume of funds accumulated by households in the 2nd and 3rd pillar's pension savings ´funds continued with a dynamic growth in 2007. The value of SKK 49 billion in December 2006 was increased by more than a half within the year to the final amount of SKK 76 billion.

A detailed view on financial relations between economic subjects in a more detailed division is provided by Table 3. Relations between households, enterprises and public administration are not subject to the financial sector analysis, therefore data are missing in the right lower part of the table.

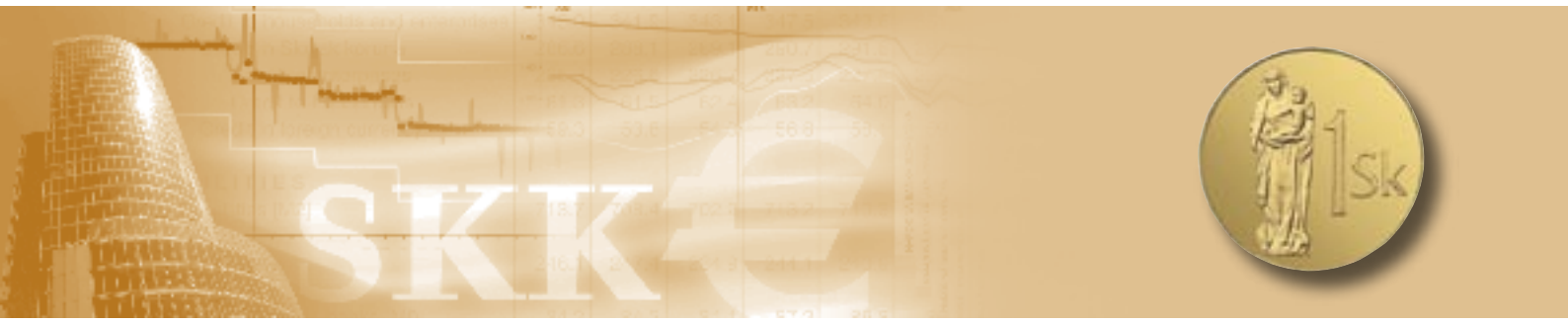
Table 3 **Selected financial relationships between economic entities** **(SKK billion)**

	NBS	Domestic financial sector						Domestic non-financial sector			Foreing countries			
		Domestic banks	Insurance companies	PFMCs	SPCs	AMCs	Other financial companies	Households	Enterprises	General government	Foreing banks	Foreing AMCs	Foreing general governments and int. institutions	Other
NBS		3–3	0–0	0–0	0–0	0–0	0–0	0.2–0.3	0.1–0.1		107–192		196–201	32–25
Domestic banks	301–394	63–56	0.04–0.04			0–0	64–67	221–283	335–404	251–255	55–70		3–1	30–49
Insurance companies	0–0	45–49				3.2–4.3								
PFMCs + SPCs	0–0													
AMCs	0–0	23–32				12–7.7								
Other financial companies	0.1–0.1	26–32												
Households	0.7–0.9	439–494	62–67	28–51	21–25	89–109						24–28		
Enterprises	0–0	307–336				0.9–1.4								
General government	0–0.1	89–114				0–0								
Foreing banks	9–7	182–295				0.8–1.7								
Foreing AMCs														
Foreing general governments and int. institutions	3–0.2	3–0.3												
Other		14–27												

Source: NBS

Legend: – Data are not available, – There is no direct relationship of a creditor and debtor. Rows: overview of financial assets (loans, deposits provided and securities) invested in institutions named in the columns. Columns: overview of liabilities (deposits and loans received) towards institutions named in the rows. Regarding insurance companies, the figure represents technical provisions for life insurance.

Banking sector



1 Banking sector

1.1 Main changes and trends in banks' liabilities

Share of sources from the foreign banks in total liabilities of the banking sector increased again in 2007. Other aggregates were developing comparably to the previous years. The value of ratio indicator of the deposits and loans volume (the so-called loan-to-deposit ratio) increased slightly after 2006. At the end of the year 2007, it reached the level of 78%.
The most significant part of the banking sector liabilities was made up of customers' deposits. The deposits of the retail sector were increasing despite the decrease of interest rates of the term deposits. Mainly, the deposits in domestic currency were increasing. Similarly, the corporate deposits and deposits of non-banking financial companies increased. It is possible to observe further volatile development with the deposits of general government and therefore, these deposits cannot be considered as stable source of financing of the banking sector activities.
Securities were issued mainly by the banks providing the mortgage loans as mortgage bonds. Securities, issued by the building societies, appeared in the market.

The structure of liabilities changed slightly in comparison to the end of the year 2006, when in 2007, the share of interbank deposits increased. This was caused by higher percentage increase of these items than by other aggregates. In particular, the volume of non-residential deposits in foreign currency was increasing. After its fall in the second half-year of 2006, it reached the initial level. Other aggregates were developing comparably to the previous years.

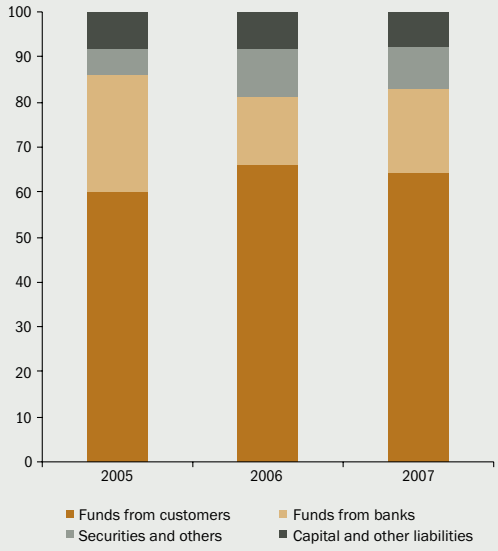
When considering the stability of financing loan activities in the banking sector, one of the most important indicators is the comparison of loan and deposit volume (loan-to-deposit ratio). This indicator shows the level, up to which the banking sector is capable of financing the loans by its domestic sources, which is more stable source, compared to the non-residential deposits.

In 2007, after its stagnation in 2006, this indicator increased again, even though more moderately than in 2005. As of December 31, 2007, its value was 7% for the entire banking sector. This growth was caused by higher increase of customer loans than customer deposits.

The value indicator was increasing in almost all the banks; it was higher than 100% mainly in the foreign banks branches and banks related to their own financial groups. Among the other banks, this value exceeded 100% in four banks. Among banks with strong retail position, the value of the indicator is still at a relatively low level, despite its slight increase.

With increasing attraction of mortgage and other house purchase loans, the building societies are facing the higher competition pressure.[8]

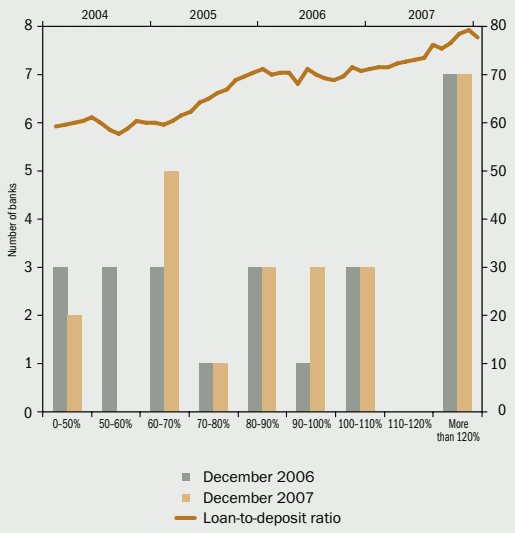
Chart 11 **Structure of liabilities of the Slovak banking sector (in %)**



Source: NBS.

8 *In 2007, the amendment of the Act No. 310/1992 Coll. on Saving for Building Purposes or Purchase of a House, which enabled the building societies to provide more complex services, was approved. According to this amendment, the building societies will be able to provide financial services in the field of financing of housing requirements and requirements related to housing.*

Chart 12 **Loan-to-deposit ratio: development and distribution (in %)**



Source: NBS.
The lower horizontal axis shows the ratio's intervals, and the left vertical axis the number of banks with the given figure. The upper horizontal axis shows the date of the ratio's average figure, and the right vertical axis the average figure.

Chart 13 **Main aggregates of the clients' deposits (in SKK bln)**

Source: NBS.

Funds from customers

Total obligations to clients, which made up the largest part of banking sector liabilities also in 2007, were further increasing. Their share in the sector's total balance sheet was between 64.0% – 66.6%.

All deposits, except for the general government deposits, which are significantly influenced by the activities of DLMA, continued to rise. There was an increase despite the slight decrease of the average interest rates for several types of deposits.

The biggest share in customer deposits comprised retail deposits – 48% and corporate deposits – 29.5% as of December 31, 2007. The share of non-banking financial companies deposits was 8.2%, while the share of non-residential deposits was 2.4%. While these shares are relatively stable, the volatile share of general government deposits, representing 10.4% of the total customer deposits as of the end of the year, remains unchanged.

Retail deposits

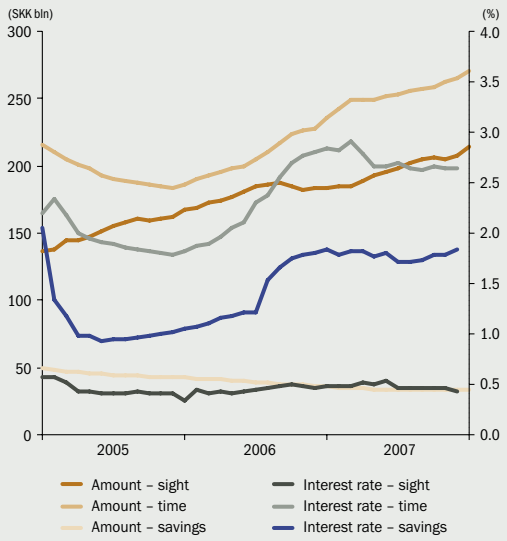
The increasing trend of retail deposits continued also in 2007, when the volume of term deposits as well as sight deposits was increasing. Only the saving deposits showed a slight decrease. The amounts were increasing despite the fact that the slight decrease of the interest rates for term deposits, which usually play an important role in decision-making process of the households' investments, could have been observed. This development may also reflect the current decrease of return rate of the mutual funds, which serve as an alternative for investments of the household financial assets. Also due to this, the long-term high correlation between the volume of deposits and interest rates decreased. Towards the end of 2007, its value was 0.61.

The amount of retail deposits decreased only in four banks. Concentration of retail deposits increased slightly, when three biggest banks managed 62.7% of all deposits at the end of 2007 compared to 62.5% at the end of 2006.

From the point of view of maturity, the term deposits prevail; their amount reached the level of SKK 271 billion at the end of the year, total volume of sight deposits amounted to SKK 214 billion. The saving

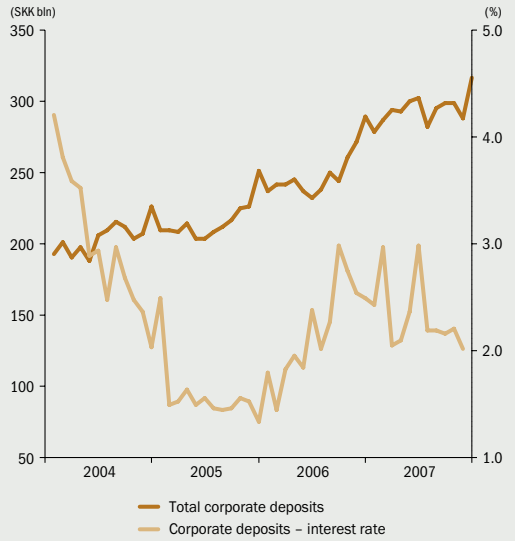
also for the persons with other than the permanent residence or with registered office in the Slovak Republic. This amendment will also more significantly enable to finance the construction of rentable flats and blocks of flats and renovation of residential properties by the legal entities. The state bonus will also be provided for communities of flat owners. It will enable the building societies to execute other activities, such as provision of guarantee not only to the other bank for the building loans, receiving of deposits from the financial institutions, provision of bank information and issue of securities.

Chart 14 **Retail deposits and interest rates**



Source: NBS.
The chart only includes SKK-denominated loans and interest rates on SKK-denominated loans.

Chart 15 **Corporate deposits**
(in SKK bln)



Source: NBS.

deposits are less significant, their volume was SKK 33 billion after decrease.

Among retail deposits, the household deposits have a dominant position. With these, a growth has been observed since 2005 and they make up 91.8% of retail deposits. Their amount increased, in annual comparison, by SKK 57 billion, the relative growth was 13.6%. Absolute growth is comparable to the growth in 2006; lower percentage growth is caused by their increasing amount. Deposits of sole trades and deposits of non-profit organisations remain at 5% or 3.1% of total retail deposits.

The biggest share of deposits is made up of deposits in Slovak koruna (SKK), their share in total deposits is 91.9%. Their share is increasing in a similar way to the share of household deposits. It means that mainly the deposits in Slovak koruna are increasing among the households deposits. It is probably related to continuing expectations on appreciation of Slovak koruna against the Euro.

Corporate deposits

The second most significant item of the total funds from customers is made up of corporate deposits; their share was 30% to the end of the year 2007. Deposits increased, in annual comparison, by SKK 27 billion, yet their course was rather volatile compared to retail deposits, also the interest rates indicated higher volatility against the retail rates. It is still possible to observe the cyclic increase of deposits to the end of the year, when the repeated decrease is typical.

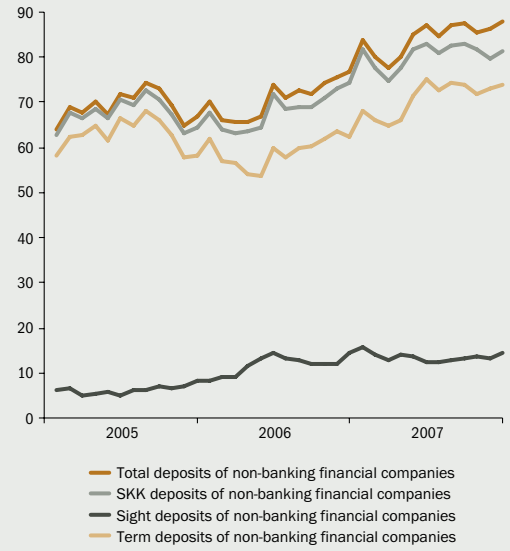
Development of corporate deposits is not as influenced by the interest rates development as the retail deposits. Their long-term correlation is usually at a low level and does not indicate any mutual relation, its value was only 0.17 as of December 31, 2007. This reflects the fact that the amount of corporate deposits is determined rather by the assets increase and business liquidity, the interest rates serve rather as the indicator when making a decision to which bank the free funds are to be put in. The Slovak koruna deposits reach the level of 80% of total deposits in the long term.

There was a growth of corporate deposits in almost all the banks. There was a slight increase of market concentration when the three biggest banks controlled 54.1% of total corporate deposits towards the end of 2007 (52.7% as of December 31, 2006).

Deposits of non-banking financial companies

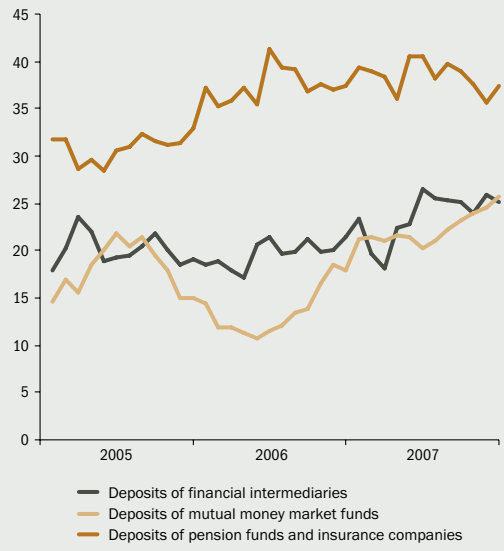
Deposits of non-banking financial companies increased in annual comparison by 15% in total, i.e. by SKK 11.5 billion. These deposits mostly comprise deposits of financial intermediaries, insurance companies, mutual funds and pension funds. Since a part of funds assets and technical provisions of insurance companies must be invested in financial instruments

Chart 16 **Deposits of non-banking financial companies by currency and deposit maturity (in SKK bln)**



Source: NBS.

Chart 17 **Deposits of financial companies by counterparties (in SKK bln)**

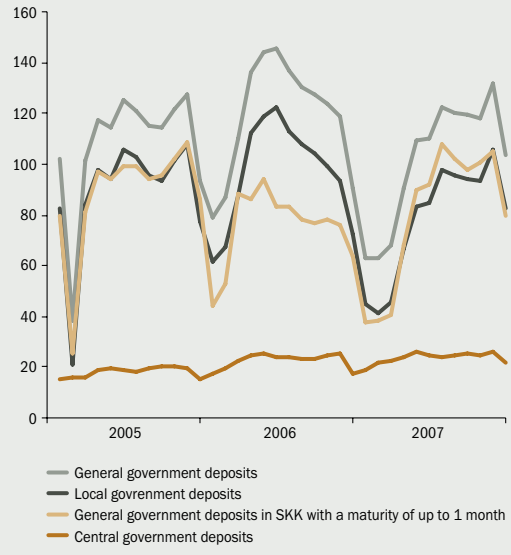


Source: NBS.

and thus, these deposits are a part of investment strategy, the Slovak koruna deposits in term deposit accounts have the highest share in financial companies deposits.

Development of term deposits amount has shown the increasing tendency since the half year of 2006, it reached a level of SKK 73.8 billion to the end of 2007. Sight deposits, after their fall to SKK 12.2 billion as of July 31, 2007, have slightly increased, their value reached SKK 14.3 billion as of December 31, 2007.

Chart 18 **General government deposits (in SKK bln)**



Source: NBS.

In 2007, the deposits of financial intermediaries increased by SKK 3.7 billion and pension funds and insurance companies deposits by SKK 0.1 billion. There was a continuous trend of growth in deposits of money market mutual funds observed since the half year of 2006, these funds increased by SKK 7.7 billion in 2007. This growth was related to repeated growth of mutual funds assets.

Deposits of non-banking financial companies constitute a significant share in total customer deposits mainly in banks and branches of foreign banks with less significant retail activities.

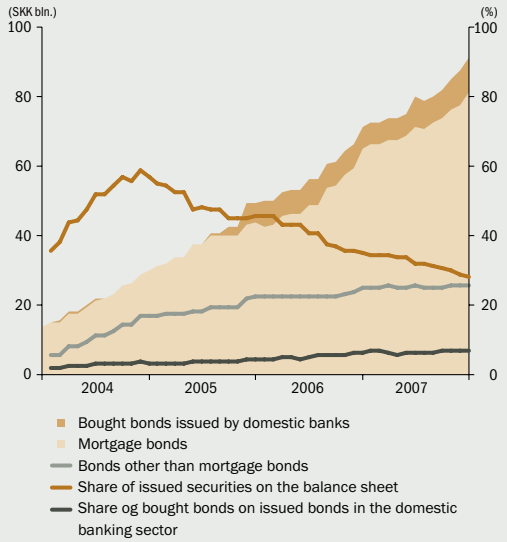
General government deposits

General government deposits comprise municipality deposits and deposits of central government which largely consist of deposits of Debt and Liquidity Management Agency (DLMA) and of deposits of National Property Fund.

Local government deposits are made up mainly of SKK deposits in sight deposit accounts; their value is between SKK 15 to 26 billion in the long term. It is possible to observe high concentration in this market, two banks have a share of 75.9%.

Major part of central government deposits is made up of DLMA deposits (75 to 83%), mainly with daily maturity and with maturity up to two weeks. Major part of these funds is saved by banks into sterilisation business transactions with NBS. With deposits of central government, it is also possible to observe high concentration, when two banks have a share of 76.1%.

Chart 19 **Structure of issued securities**



Source: NBS.

Resources gained from issues of securities

In 2007, trend of securities issues continued. The biggest share in the amount of securities issued (51%) is made up of mortgage bonds. Their issue is obligatory for those banks that provide mortgage loans. To a lower degree, bonds other than mortgage bonds were issued, they made 6.3% of securities. Share of securities issued in the total balance sheet increased slightly from 6.5% as of December 31, 2006 to 6.8% as of December 31, 2007, their share was further of minor importance from the banking sector aspect. From the point of view of individual banks, in some institutions, the issue of securities contributed to the long-term stable financing of their activities.

During 2007, the banks purchased almost no bonds issued by other domestic banks, therefore the share of purchased bonds in issued bonds within the Slovak banking sector is further decreasing and the effect of issued bonds is increasing.

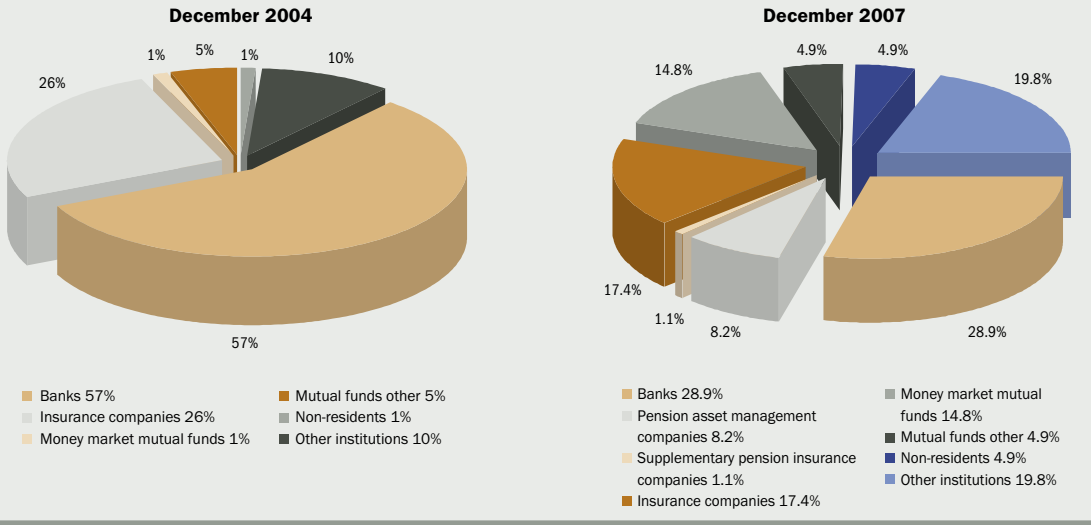
As of December 31, 2007, the total of 9 mortgage-providing banks had their mortgage bonds issued. Of these banks, during the year, the mortgage bonds were not issued by only one bank. This bank focused on provision of other types of house purchase loans than mortgage loans and therefore, there was no reason or requirement to issue the mortgage bonds.

While to the end of 2004 almost 57% of issued mortgage bonds were owned by residential banks, this number is continuously decreasing and to the end of 2007, its value represented 29 %. On the other hand, the share of purchased mortgage bonds in total mortgage bonds by the mutual funds, non-resident banks and other institutions, increased. This gradual expanding of counterparties to other than residential banks means a better liquidity risk diversification and decrease of this risk in the banking sector.

Other group of securities issued is made up of issued bonds other than mortgage bonds. Issued bonds, to the end of the year, were indicated by four banks.

To the end of 2007, 8 banks in total issued the bills of exchange, which are an alternative to customer term deposits. With an exception of three banks, the volume of bills of exchange in all the other banks was decreasing.

Chart 20 **Share of individual institutions in purchase of mortgage bonds issued by residential banks (in %)**



Source: NBS, Reuters.

1.2 Main changes and trends in banks' assets

In 2007, the growth of assets in the banking sector was mainly made up of increase in claims provided to customers. Banks financed mainly the household sector and corporate sector. In the course of the entire year, the corportate loans for real estate properties financing were increasing sharply. The banks focused their interest on providing the loans to small and medium enterprises. The increase in amount of loans provided to households continued. High demand of households for loans has been influenced by significant growth of real estate property prices.
The banking sector increased the volume of funds invested in transactions with NBS. Year-on-year, the investments in securities decreased. Principally, the holding of domestic government bonds was decreasing and the investments in foreign securities were increasing.

Assets of the banks continued to rise also in 2007. Their volume increased year-on-year by more than 17%. The most significant growth in assets has been observed by several branches of foreign banks. They mainly increased the investments into the central bank and their deposits from foreign banks were increasing as well. The growth of assets of major banks was fluctuating around the sector´s average and was principally based on the increase of loans to the clients. Medium and smaller banks reached the below-average growth. The building societies indicated lower growth.

From the point of view of assets structure, the claims against customers had a dominant position. These also indicated the highest year-on-year growth. They comprised more than 60% in total year-on-year amount asset increase.

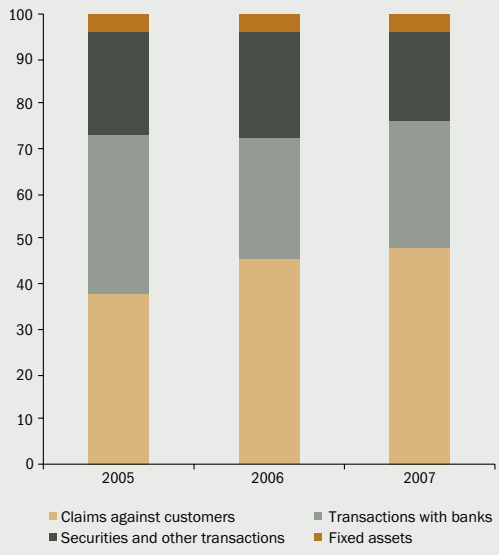
Transactions with banks increased year-on-year by 25%. They increased mainly in selected branches of foreign banks.

The volume of bank investments in securities decreased year-on-year in absolute and relative values.

Loans to clients

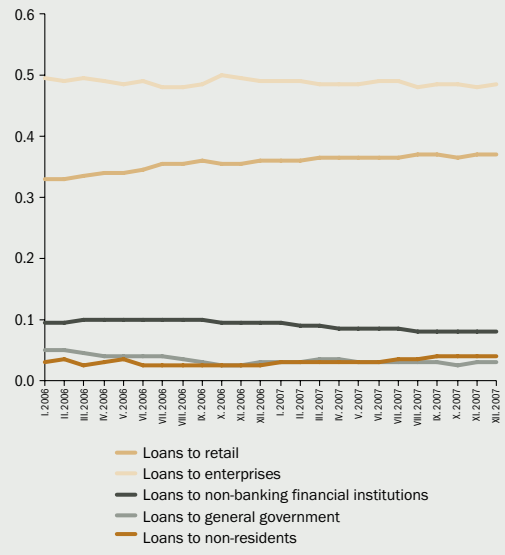
Loans provided to customers are gaining higher share in total bank assets. Over the last two years, their share went up by 10 percentage points and at the end of 2007, they made up almost 50% of the sector's assets. This trend is related mainly to positive economic development in Slovakia, when banks are

Chart 21 **Asset structure of the banking sector (in %)**



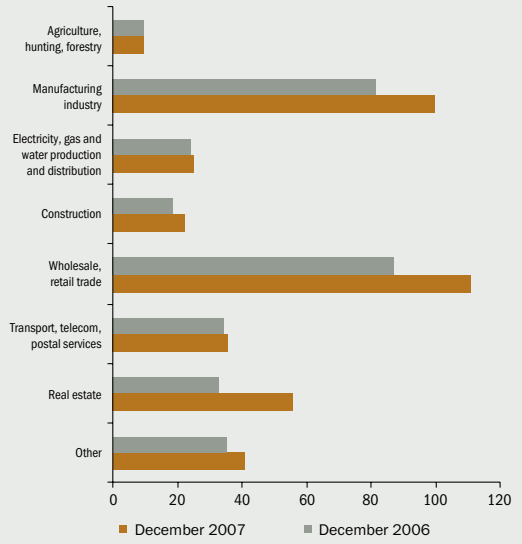
Source: NBS.
The vertical axis shows the shares of individual aggregates of assets in total assets.

Chart 22 **Credit portfolio of the banking sector (in %)**



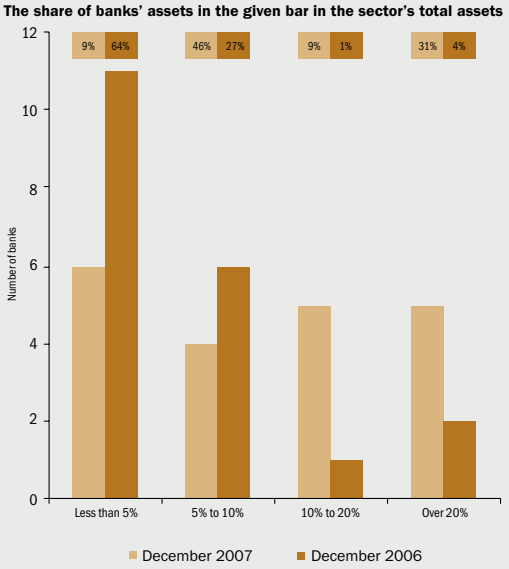
Source: NBS.
The vertical axis shows the shares of each loan category in total loans.

Chart 23 **Structure of corporate loans by industry (in SKK billion)**



Source: NBS.

Chart 24 **Share of real estate property loans in total corporate loans**



Source: NBS.

more willing to finance the increasing real economy in a higher degree.

In 2007, banks provided the biggest volume of loans to the corporate sector and households sector. In some banks, the volume of loans provided to general government and to non-residents increased more significantly. Loans provided to non-banking financial institutions showed moderate rise.

From the point of view of individual banks, it is important that almost all the banks indicated double-figure increase in volume of loans to clients for 2007. In several banks, the share of corporate loans and household loans had approximately the same impact on the total increase of claims against customers.

Corporate loans

The year 2007 was one of the most successful, from the point of view of corporate loans provided by the banks. Banks, during 2007, increased the volume of provided loans by more than one fifth, which means an increase by approximately SKK 70.5 billion. Enterprises were financed mainly through short-term loans, which made up almost one half of loans provided in 2007.

The market concentration of corporate loans increased slightly. Four banks with the biggest share in corporate financing reached a 60% share in total corporate loans at the end of 2007. In 2006, they reached 58% and in 2005, their share reached 56%.

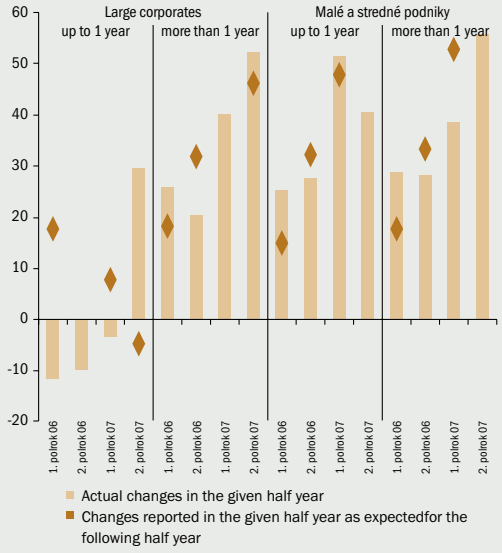
The biggest part of loans in 2007 went to the manufacturing industry mainly to electricity industry and to activities in the field of real estate and trade (wholesale and retail).

The significant growth continued in financing of real estate sector. Continuing growth of prices of residential real estate properties and commercial properties was an important factor behind the growth in financing. From the point of view of banking sector stability, there was a significant increase of such loans share in total corporate loans. At the end of 2007, the loans into the real estate sector made up already 15% of total corporate loans, while in 2006, it was only 10%. The share of these loans in individual banks increased sharply.

In particular, there was a strong corporate loan demand behind the high amount of provided loans. The highest growth of demand was indicated mainly by the largest banks. None of the banks indicated a fall in demand. Similar development is expected by banks also in the first half of 2008.

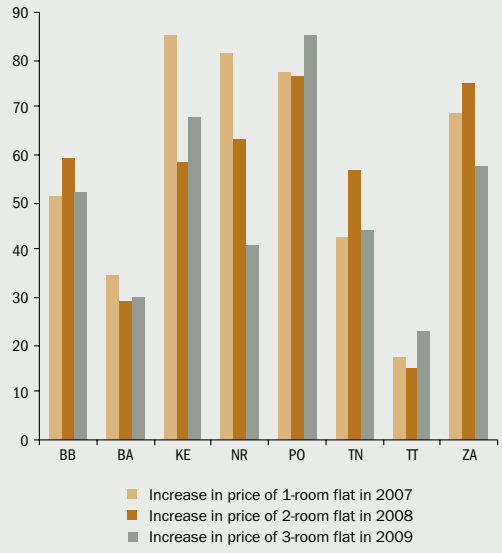
While corporate demand had an increasing tendency during the whole of 2007, the approach of banks to corporate financing started to change in the second half of 2007. Banks were making their loan standards stricter, mainly in relation to large enterprises financing and project financing. There were several reasons for such approach of the banks and more or less they can be connected with current situation in the financial markets related to mortgage crisis in the USA. Banks were concerned about the future macroeconomic development and risk degree of the particular industries. Several banks mentioned the changes in the risk appetite and changes in capital and liquidity position.

Chart 25 **Corporate loan demand (in %)**



Source: NBS, Lending survey.
Data are stated in the form of net percentage share, positive value means the demand increase. Changes of demand are expressed from the subjective point of view of the bank.

Chart 26 **Increase in flat prices in 2007 by regions (in %)**



Source: Price map of real estate properties, own calculations.

There was an opposite development in the sector of small and medium enterprises, where some banks made their standards for loans provided to these enterprises more moderate. Different to the large corporate, interest rate margins of banks in this segment are significantly higher and indebtedness is on the lower level.

Development on the corporate loans market in 2008 will probably be influenced by more reserved attitude of banks, mainly due to ongoing crisis in the financial markets. Principally, it concerns the financing of real estate sector and some other selected industries. Strong competition and related low interest rate margins will have an influence on the offer of loans for large enterprises. From the point of view of banks, it is positive that in the second half of 2007, the interest rate margins of banks from loans started to go up.

On the contrary, the segment of small and medium enterprises is an interesting sector for banks. It is possible to expect the growing competition among banks in this sector.

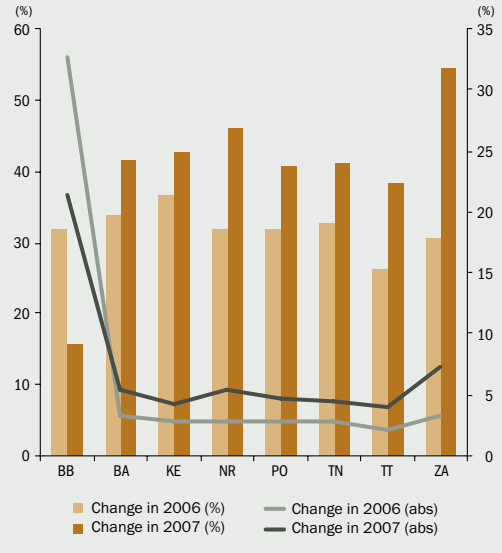
Household loans

In 2007, the status of loans provided to households increased by SKK 64 billion. Overall, this increase was the highest in the last years.

Most banks, which are active in financing of household sector, observed the increase of demand from households. There was a growing demand for loans secured by real estate properties – loans with or without specified purpose. The demand on various types of consumer loans continued to grow. Similar development is expected by banks also in the first half of 2008.

Favourable economic development and related increase in the income level of households had a positive influence on demand growth.

Chart 27 **Changes in amount of household loans by regions**

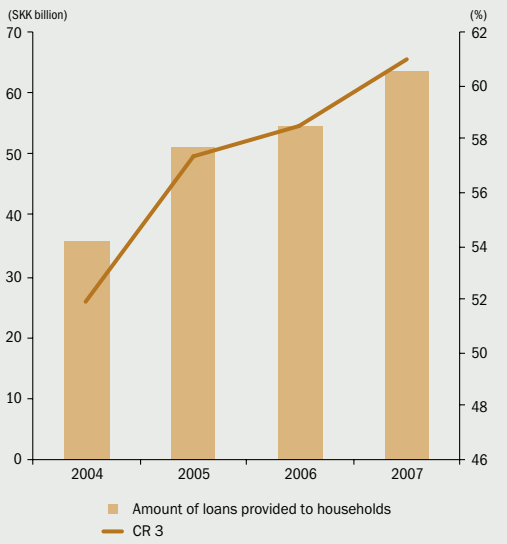


Source: NBS.

Chart 28 **Buy – rental gap**
(in %)

Source: Price map of real estate properties, NBS, own calculations.
Difference between rent expenses and expenses to cover the loan installments as percentage share in the property price is shown on the vertical axis.

Chart 29 **Volume of provided loans to households**



Source: NBS.
Data in SKK billion are on the left vertical axis; the value of indicator CR 3 is expressed in % and it is shown on the right vertical axis.

Development in the real estate market had a significant influence on demand in 2007, when price growth of resident real estate properties forced the households to draw higher volumes of loans to finance their purchase. Growth of real estate property prices was higher than the growth of real wages. There was a certain time pressure on households to buy the real estate property for relatively lower prices. Part of demand was made up of speculative purchases, when high price growth made the real estate properties the interesting assets for investments.

Relationship between the price growth of real estate properties and volume of provided loans can be confirmed by distribution of provided loans by regions. In most regions, exept for Bratislava region, the economic situation improved and that was also reflected in willingness of banks to finance the households. Year-on-year better availability of loans (Chart 27) was also reflected in higher growth of real estate property prices (Chart 26).

The growth in financing of housing is supported by the fact that for the households, it is still more beneficial to draw a loan and buy the property than to pay a rent for the same property. Loan installments together with additional costs related to property were lower than rented housing in 2007. (The so-called *buy-rental gap*[9]). It is necessary to mention that the indicator does not take into account any possible capital appreciation of the property in the future when assessing the purchase of property. We assume that this factor was of great importance from the decision-making point of view, whether to buy or to rent the property.

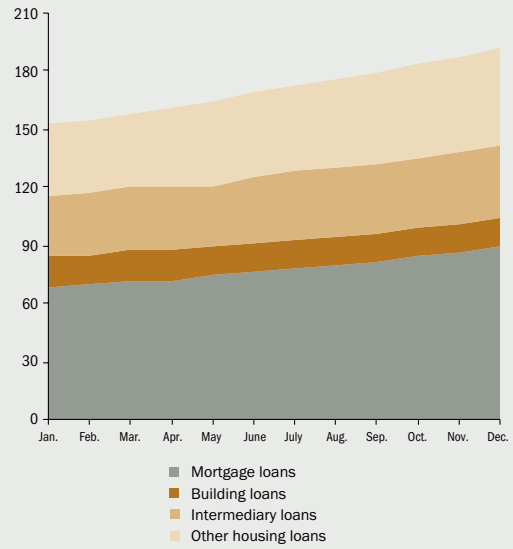
As an example, we can specify the *buy-rental gap* for a 3-room flat in individual regions. In all regions, it was more beneficial for the households to buy the flat than to rent it. Due to the high growth of purchase prices of real estate properties, there was a definite drop of this indicator in all regions during 2007.

Assuming that the positive economic development in Slovakia will continue, it is likely that the strong growth of loans will also continue in 2008. There will be more factors influencing the growth level.

The volume of provided loans will, in a high degree, depend on further development of real estate property prices. At least in 2007, the price growth of real estate properties was the key factor of high growth of loan volumes. The relationship between the prices of properties and population's income level and prices

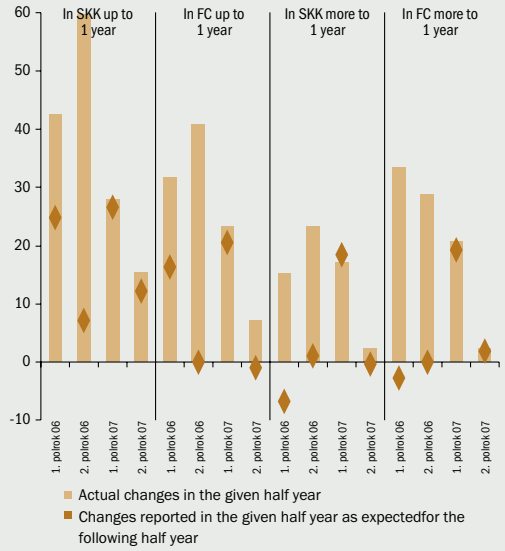
9 *When calculating the indicator, we based our calculation on the work of Fan and Peng: Real estate indicators in Hong Kong SAR. We calculated according to the formula [((1-share of own funds)*mortgage rate) + (share of own funds)*monthly rate of 5-year deposits] – rent rate. Share of own funds was determined at 20%, mortgage rate is an average rate in the market for 20-year mortgage loans.*

Chart 30 **Real estate property loans provided to households (in SKK bln)**



Source: NBS.

Chart 31 **Development of loan standards for household loans (in %)**



Source: NBS, questionnaire on loan standards.
Data are states in the form of net percentage share; positive value means the moderation of standards. Changes of standards are expressed from the subjective point of view of the banks.

for rented housing will also be important. High prices of properties will be reflected in high installments of loans and consequently, an increase of installments share to disposable income. Particularly in Bratislava region, this rate reaches high values. It is likely that, similarly as in 2007, there will be a more significant increase in loans outside the Bratislava region.

If the trend of property price growth continues, it will be more beneficial for the households to rent a flat than to buy, which may then result in decreasing demand for loans.

The ongoing world financial crisis will have an influence on demand fall. The price growth of long-term funds can be transferred to interest rates of on loans. Fall in value of household financial assets (mainly the investments in selected mutual funds) will negatively influence the confidence of households in their financial situation and consequently, their willingness to run into debt.

Three biggest banks continued to have a dominant position in the market with households loans in 2007. Their share in total loan status was more than 60% at the end of 2007. In the absolute growth in 2007, their share was 7%.

Households, similarly to previous years, were mainly interested in housing loans. Year-on-year, they increased by 30%, whereas three biggest banks had a dominant position in this increase.

When financing, several banks further preferred classic mortgage loans. There was a significant increase in volume of other types of house purchase loans. Within the building societies, the trend from previous years has been confirmed, when mainly the intermediary loans continued to grow.

The assumptions concerning the acceptance of common currency Euro did not significantly make the retail loan market in foreign currency move. At the end of 2007, they made only 3% of loans provided to retail. Totally, they increased by almost SKK 5 billion.

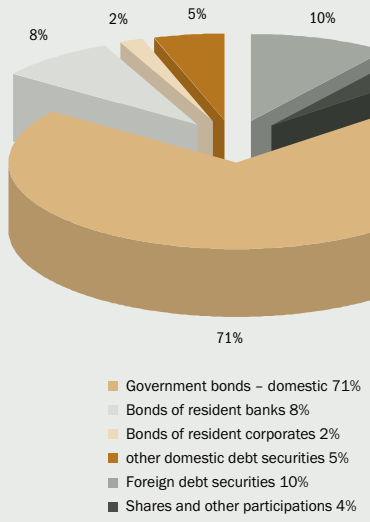
When providing the corporate loans, the credit standards were, to a certain extent, made stricter. When providing the household loans, the banking sector did not change the standards; it made them even more moderate. This moderation was reflected in limit related to value and quality of collateral. The credit standards were slightly stricter for credit cards and consumer loans on the sector's level.

Lending to other sectors

Loans provided outside the corporate sector and retail made approximately 15% of total claims against customers.

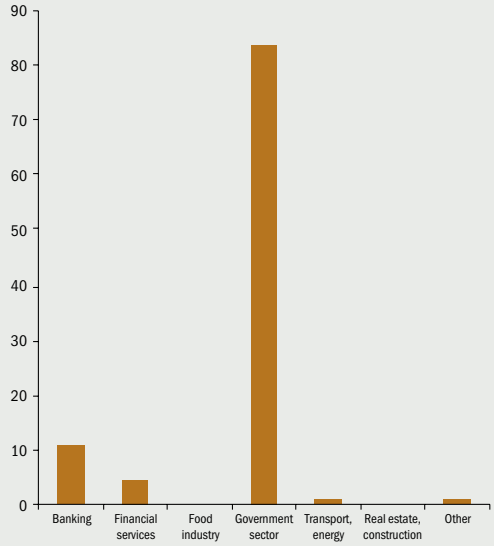
The biggest part of them was provided to financial intermediaries. Most frequently, banks within their group financed leasing companies, consumer finance companies and factoring companies. Indirectly, they

Chart 32 **Portfolio structure of securities owned by the banking sector in December 2007** **(in %)**



Source: NBS.

Chart 33 **Debt securities by industries of issue** **(in %)**



Source: NBS.
Classification by amount of debt securities.

increased their exposure to the household sector, where these companies operate.

From the point of view of share in total claims against customers, these less important loans are provided to non-residents (4% of total loans for customers). However, several banks observed a significant relative increase. Year-on-year, the loans provided to public administration increased.

Investment in securities

Share of securities in banks' assets was decreasing during the year. At the end of 2007, they made 18% of assets.

Totally, at the sector's level, mainly the foreign securities were increasing, while the volume of domestic securities was rather decreasing.

From the point of view of risk rate, the securities portfolio in the banking sector remains conservative. The government bonds with low risk premia have the dominant position. In 2007, the amount of foreign bank and corporate debt securities and shares was increasing in selected banks.

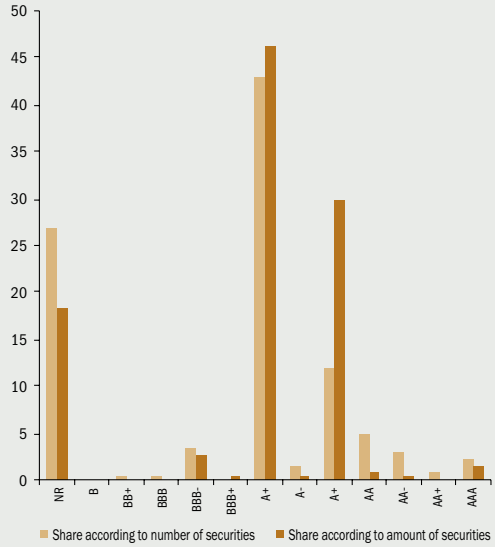
Debt securities

The volume of debt securities, in the banking sector, went up only by a minimum degree. Banks reduced their investments mainly into domestic debt securities, when mainly the investments into corporate and government bonds were decreasing.

Only a slight growth of debt securities has been caused by higher investments into foreign securities.

The banking sector was, through the debt securities, exposed mainly to government sector. In almost all the banks, this sector had a dominant position.

Chart 34 **Distribution of debt securities by rating degrees** **(in %)**



Source: NBS.
The share of individual rating degrees in total number, or in total volume of debt securities is on the vertical axis. Individual rating degrees are shown as equivalent of rating degree Standard&Poor. NR – non-rated debt security.

Exposure to banking sector and financial services sector made almost 15% of the debt securities portfolio.

Investing into structural products is more or less a matter of selected banks. At the sector´s level, this type of securities has only minimum share in total securities.

Even from the point of view of ratings of debt securities, it is possible to characterize the portfolio of securities as conservative. Majority of securities in banks' portfolio have their rating in the investment zone, where almost 70% of securities have a rating higher than BB. Almost one third of portfolio does not have a rating from any agency. It mainly concerns the mortgage bonds of domestic banks and bonds of domestic companies.

Average maturity of securities in the banks' portfolios, as of December 2007, was approximately 5 years. When considering the volume of securities, it was even lower – at the level of 3.1 years.

Duration of securities portfolio was, at the end of 2007, at the level of 2.67 years.

From the point of view of portfolio classification, the biggest portfolio was the one with securities held to maturity, in which almost 60% of debt securities were placed. Most frequently, this portfolio included the government bonds. Approximately one fourth of bonds were re-priced to the real value directly into profit and loss and the remaining part was kept by banks for sale in their portfolio (AFS).

Shares

During 2007, the investments into domestic and foreign equity securities were going up. Their total share in investments into securities was only at the level of 4% (Chart 32).

Only a few banks were involved in the increase of investments into shares.

Box 2 Crisis in global financial markets

***Subprime* loans in the USA**

The year 2007 was, from the point of view of development in the world financial markets, a breaking year. The positive development from the previous year, supported mainly by low inflation, low interest rates and increase in risk appetite, started to change in the second half year of 2007. The so-called American mortgage crisis appeared on the market. There are several reasons for this crisis, but the significant one comes from the *subprime* mortgage market in the USA. In previous years, banks and financial institutions came to significant easing of credit standards, when they were providing loans also to such clients that would normally not be given a mortgage loan. A typical feature of these loans was a lower interest rate at provision and later, a change of interest rate after a certain period of time. The possibility of risk transfer of these loans from loan providers to other investors contributed to this situation. Also a high growth of property prices in previous years contributed to standards decrease.

Impact on structural products

Providers of mortgage loans often used a possibility of risk transfer to other counterparties. Various loan packages were created, their risk was transferred to various forms of structural products and these were later offered to investors. The significant growth of *subprime* loans in the USA led to the volume growth of these securities in the investors´ portfolios. In times of low interest rates, these products, also due to their flexibility, from the point of view of risk management and higher yields, became a very popular tool among investors. With an increase in defaulted *subprime* mortgage loans in the USA, these losses were soon very quickly reflected in losses in structured securities backed directly or indirectly by the *subprime* loans. The uncertainty related mainly to valuation of these bonds appeared. The uncertainty, as far as the scope of losses in the underlying assets as well as significant decrease in liquidity of these securities is concerned, contributed to the fact that the investors can hardly determine a market price of these tools. The ratings agencies are also highly responsible for this situation. Their ratings, given to such securities, did not correspond to credit quality of underlying assets and to other relevant risks.

Losses from structured securities backed by the *subprime* loans affected mainly financial institutions in the USA and in Europe up to now. Estimations on total issuing against these products vary in their scope and change in time. Further development will depend also on quality development of the *subprime* loans and mainly from the fact how the *subprime* households in the USA are going to deal with the change of interest rates for their loans. According to estimations, the changes of interest rates of high volumes of *subprime* loans will continue

up to 2009. It is also estimated that the loans, which were provided in 2006 and in 2007 and that will be re-priced in the next few years, shall indicate a lower quality than loans from previous periods.

Spreading of crisis into other sectors

Losses from structural products were also quickly spreading into other areas of financial market. The increase in uncertainty and decrease in liquidity led to reduction of new issues of structured products. The supplementary charges of credit risk of financial institutions increased and the value of their shares decreased. Low liquidity in the market influenced the area of ABCP *(Asset Backed Commercial Papers)* and SIV *(Special Investments Vehicles)* in a negative way. Negative development has also been observed in rather safe markets – money markets, market of covered bonds and currency swap market.

Financial markets reacted negatively to fall of ratings of the most important monoline insurance companies, which guarantee the credit risk of bonds. Therefore, the credit risk of bonds, they have been insuring, increased. The development of credit risk of these institutions will have a significant impact on the stability of financial sectors in several countries in the near future.

Possible further development

Further development of crisis will depend on the fact to what extent the current crisis shall influence the other sectors and mainly the real economy. Several financial institutions in the USA and EU have announced significant losses in relation to the current crisis. In previous successful years, banks in these countries established a strong capital position, which should absorb the losses suffered in the short time horizon. What will be the further development if the losses continue and banks will not have sufficient sources to cover these losses remains an unsolved issue. The uncertainty in financial markets will make gaining new capital more complicated. In some cases, the sovereign funds of selected countries were used as capital source. It is assumed that in the next few years, the profitability of financial institutions mainly in the USA and in EU will decrease. Except direct losses, the banks will probably suffer shortfalls in revenues related to fall in business activities. In case of investment banks, it will be related mainly to fees for intermediation and in case of universal banks, it will be related mainly to interest income due to lower volume of provided loans.

The impact on real economy will be another significant factor of further crisis development. After several banks had announced their losses or their profit decrease, the prices of sources went up and willingness of banks to finance the real economy decreased. More significant fall in financing of corporate sector and households will then be reflected in decrease of investments and consumption. Stricter standards and fall in newly-provided loans to corporate clients and to households have been observed in the USA as well as in several EU countries. In corporate sector, the financing of the riskiest sectors decreased – private equity, hedge funds and real estate investments. In several EU countries, the banks made their standards for provision of house purchase loans to households stricter.

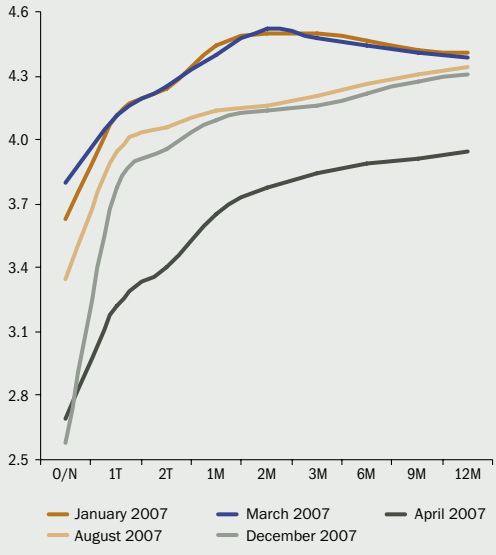
Recent development has shown that several important business models (ABCP, SIV, hedge funds) in the financial sector depend on liquidity status in the market. Moreover, several areas of financial market are strongly interconnected and therefore, maintaining of liquidity in the market will play the key role in spreading of crisis.

1.3 Interbank market

After the months of March and April 2007, when the National Bank of Slovakia decreased the base rate by a total of 0.5 percentage point, the rate has not changed. The banks expected this fact; this was reflected in the yield curve, which has been stable over the whole second half of 2007. In the mentioned months, the NBS performed interventions on the foreign exchange market in total amount of EUR 1 930 million and EUR 700 million. After growth of asset and liability interbank transactions in the first half of year, the value stabilized in the second half of 2007. The transactions with the NBS accounted for the biggest part of the interbank assets, in interbank liabilities, the most significant part were the deposits and received loans from foreign bank in foreign currency. The interbank market was highly liquid during 2007, transaction with maturity within 3 months dominated.

In comparison with the end of 2006, the amount of asset interbank transactions increased by SKK 99.6 billion (25.0%) and of liability interbank transactions by SKK 95.9 billion (44.9%). After a sharp growth of asset and liability interbank transactions in the first half of 2007, their value in the second half of year stabilized on approximately the same level. Value of the interbank asset[10] represented SKK 497.3 billion by the end of December, which was a growth by SKK 3.0 billion compared to June 30, 2007, relative change of 0.6%. Interbank liabilities[11] amounted to SKK 309.8 billion, when their amount increased by SKK 35.2 billion, relative change of 12.8%.

Chart 35 **Yield curves of BRIBOR rates**
(in %)



Source: NBS.
Vertical axis is in percentage and express average value in given month calculated by means of daily data.
O/N – overnight.
Maturity: T – Weeks, M – Months.

The share of the asset interbank transactions on the balance sheet total fell slightly from 30.4% by the end of July 2007 to 28.8% by the end of December 2007. On the contrary, share of the total interbank liabilities on the balance sheet total increased slightly from 16.9% to 17.9% as of December 31, 2007.

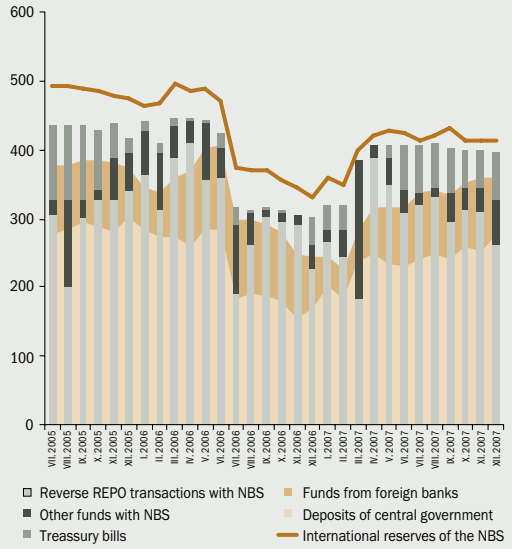
From the year-on-year comparison aspect as of December 31, 2007, the asset and liability interbank transactions increased in almost all large and middle banks; only one bank has made a significant fall. We need to state that the progress of amounts was volatile during the whole period.

In the months from January to March, the yield curve had inverse shape, which reflected the market expectations about the base rate decrease. After its reduction in March and April, a parallel shift down occurred. In the following period, the interest curve had a standard shape, in the second half of 2007 a soft increase occurred. The standard shape of the curve reflects the fact that the banks did not expect any changes by the end of 2007. Rates with the shortest maturity remained volatile, which reflected the status of the liquidity on the market (Chart 35).

On the interbank market (without transactions with NBS) in the second half of 2007, operations with swaps represented 57.0% of asset transactions and 51.7% of liability transactions. Deposits and accepted loans represented 41.4% of asset transactions and 46.0% of liability transactions. From the aspect of time sterility daily business dominated, which produced 81.0% of asset transactions and 89.0% of liability transactions.

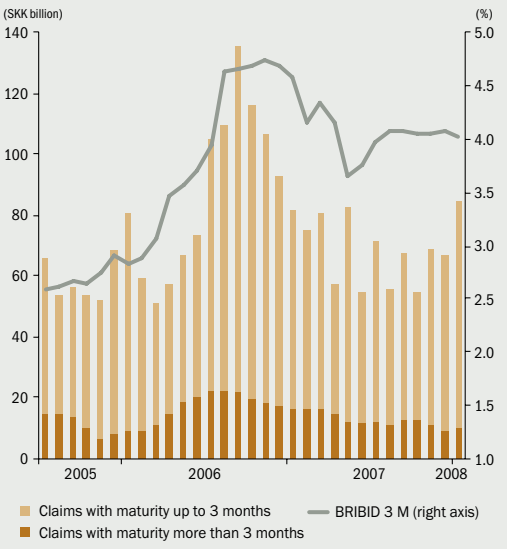
10 *Interbank assets represent the sum of claims against NBS, domestic and foreign banks and treasuries.*
11 *Interbank liabilities represent the sum of accepted deposits and loans from NBS, domestic and foreign commercial banks.*

Chart 36 **Interbank assets and liabilities and funds of general government (in SKK billion)**



Source: NBS.
The chart does not include transactions.

Chart 37 **Value of offered loans and deposits in commercial banks**



Source: NBS.

The largest component of interbank assets was made by transactions with the NBS also in 2007. Their value increased by June 2007 to SKK 342.7 billion (in December 2006 SKK 263.5 billion) and remained at approximately the same level by the end of year (represented SKK 326.3 billion as of December 31, 2007).

During the months of January, March and April, NBS did not accept the overall demand for the two-week repo transactions on regular weekly auctions. Also NBS´s TB auctions were not performed. This practice together with interventions on the exchange market caused the increase of the free resources amount on the interbank market, which banks declined by means of overnight sterilization deposits within the NBS. In this period, accordingly, the ratio of the short term deposits on the total amount of resources deposited in the NBS has significantly increased. The share of the two-week deposit repo transactions made only 47.8% in March. As of May 2007, the NBS accepted during two-week auctions, the whole demand for two-week sterilisation repo tenders, as a result, the two-week sterilisation repo transactions represented an average of 89.8% of transactions with the NBS in this period.

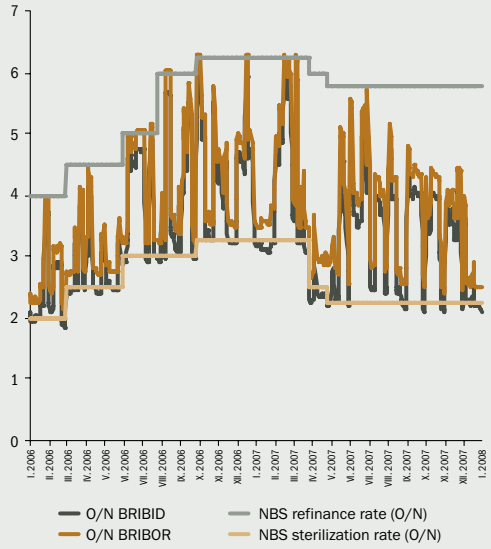
In the months of May, June, September, October and November, NBS´s TB auction was realized, where NBS accepted almost the whole demand, which affected the value of free resources on the interbank market, deposited into treasury bonds, which stood at SKK 55.5 billion (October) to SKK 67.7 billion in December after repeated increase during the second year half. Liabilities against domestic banks in koruna decreased slightly in the year-on-year comparison by SKK 7.1 billion and amounted to SKK 24.2 billion as of December 31, 2007, representing 4.9% of total interbank assets. Deposits and loans of residential banks in foreign currency stood at SKK 5.3 billion at the end of the year, representing a little less than 1.1% of interbank assets. That is a decrease of SKK 3.6 billion from December 31, 2006.

Koruna denominated deposits and loans to non-residential banks increased from SKK 14.1 billion to SKK 25.1 billion in a year-on-year comparison, and represented 5.1% of total interbank assets. Foreign-currency denominated deposits and loans in non-residential banks grew again in June 2007, after decrease from SKK 27.8 billion to SKK 18.6 billion at the end of 2006, and stood at SKK 29.6 billion (6.0% of interbank assets) at the end of the year.

During second half of 2007, the banks continued investing into high liquidity assets, when liabilities against domestic and foreign banks within 3 months represented an average of 79.4% of total liabilities against domestic and foreign banks. Liabilities over 3 months continued in decreasing tendency, their value amounting to a total of SKK 10.5 billion by December 31, 2007.

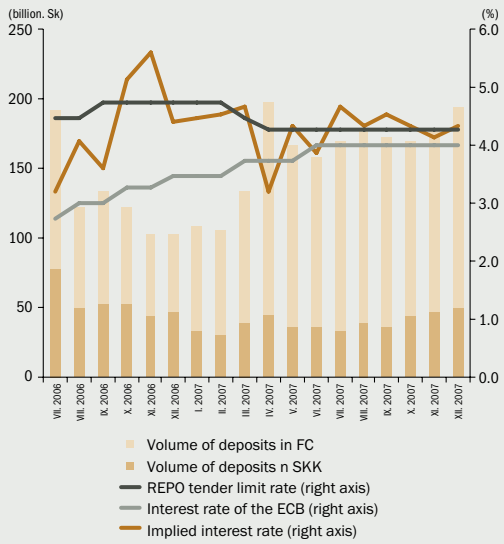
Trading intensity on interbank market was more significant in the second half of individual months, during the monitored period, when the banks where

Chart 38 **Overnight interest rates in the interbank market (in %)**



Source: NBS.
O/N – overnight.

Chart 39 **Deposits of non-residential banks and implied interest rate**



Source: NBS.
The implied interest rate was calculated as 12 times the share of interest expenses in non-resident banks' deposits for a given month, plus the average amount of these deposits in that month as calculated on a daily basis. The calculation of the implied interest rate did not take into account banks which did not report any expenses for deposits of non-resident banks.

in the over-position/redundancy in aspect of minimal provisions requirements. This fact reflects the development of the overnight rates on interbank market, when their value was relatively higher in the first half and fluctuated at the level of the NBS deposit facility rate during the second half of individual months.

During the months of February, May and June, when NBS again accepted the whole demand for two-weekly repo tenders, the banks were in a slow under-status of liquidity, which was reflected in the increase of overnight rates up to the value of NBS refinance rate. On the contrary, in the months of January, March and April, when NBS did not accept the whole repo transaction and the banking sector was in liquidity over-status, the rates fluctuated on the value of NBS deposit facility rates.

Volume of resources from NBS was on a low level during the monitored period and by the end of 2007, it stood at SKK 2.8 billion (0.9% of total interbank liabilities). Of this value, SKK 2.5 billion represent overnight refinance business of one bank, which was refinanced by NBS funds during the whole period.

The biggest item of interbank liabilities comprised non-residential bank funds. These resources show high correlation with NBS foreign provisions, correlation index between first differentials was 0.73 as of December 31, 2007.

Slovak koruna denominated funds from foreign banks remained at a constant level during the whole year 2007, corresponding with the long-term trend, and amounted to SKK 58.4 billion, this being 18.9% of total interbank liabilities as of December 31, 2007.

Foreign currency denominated funds from foreign banks were increasing during the whole year from SKK 115.7 billion as of December 31, 2006 to SKK 219.5 billion as of December 31, 2007 and represented 70.9% of total interbank liabilities. These funds made up the biggest item of interbank liabilities from all large and middle banks and branches of foreign banks. Majority of funds were further deposited by the banks into sterilization trades with NBS after conversion with help of currency swaps.

Implicated interest rate for non-residential bank deposits was at the level of the NBS base rate and ECB rate. Lower values were reached in the months of April, July and December, when the volume of non-residential deposits was at highest level. Its value was less volatile than the previous periods in the second half of 2007, which could have been caused by the low rate differential between the mentioned rates.

1.4 Off-balance sheet

Total volume of off-balance sheet assets (liabilities) in sector by ultimum of 2007 represented SKK 2967 (2810) billion. Both numbers are higher by 1%, or by 16%, in comparison to status as of December 2006. Increase was recorded by almost all main off-balance sheet aggregates, on both receivables and liabilities. Ratio of the asset (liabilities) side of off-balance sheet to the balance sheet total of Slovak banks stood at 179% (169%) as of December 31, 2007. Due to the slower growth of off-balance sheet assets and liabilities, in comparison to the 2007 balance sheet, the mentioned values of this ratio are lower, than at the end of 2006. Around 60% of off-balance sheet on both sides were made by derivatives. It is henceforward valid that almost the whole amount of derivatives relates only to two types of underlying instruments – currency and interest. As further voluminous items of the off-balance sheet, can assign received guaranties, either in form of securities, or real estates and also dynamically growing future provided loans.

Derivatives

Derivatives have had a dominant position with aspect to volume, but also importance within the off-balance sheet for a long time. Total derivatives volume consisting of fixed term instruments and options, measured by value of underlying assets, amounted to SKK 1746 billion by the end of 2007. This sum represents 105% of total sector´s assets. In comparison with previous year, the total position in derivatives increased by 11%. It was mainly four banks which contributed to this increase, of which each assigned more than SKK 40 billion derivatives year-on-year.

Majority of derivatives contracts (81%) is created by fixed term instruments. This rate remained at the same level, in comparison to December 2006. However, the volume of fixed-term contracts has increased by 10% year-on-year. It may be further stated that the development of term contracts total volume in 2007 was much more stable in comparison with the previous year. Almost all term instruments traded in the Slovak banking sector are tied either with currency, or with interest rate underlying instruments. Fixed-term instruments for currency assets have a slightly higher proportion (53%) within these two groups.

Options recorded an increase of nearly 13% year-on-year. The mentioned addition could be significantly higher, but the options holding decreased sharply in December in five banks in the amount of SKK 102 billion. Nearly the entire volume of option instruments belonged to options on currency.

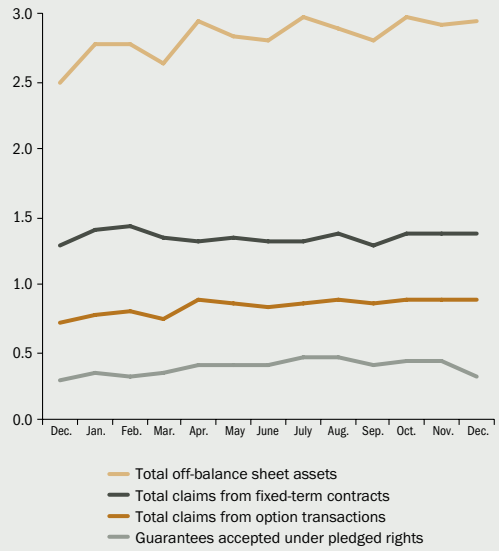
The second view on the derivatives structure is based on the nature of underlying instruments. The most used are derivatives for currency instruments. They cover more than 60% of sectors derivates portfolio. Banks conclude currency derivates contracts for two reasons. The first reason is to hedge open balance sheet positions in foreign currency. Mostly it is about concluding short currency positions in balance sheet

Table 4 **Year-on-year change in derivative instruments** **(in SKK million)**

	Value of underlying assets					Positive fair value XII. 2007	Negative fair value XII. 2007
	XII. 2007	VI. 2007	XII. 2006	Year-on-year change	Change since VI. 2007		
Fixed-term contracts	1,421,139	1,314,631	1,287,028	10%	8%	14,987	16,640
– interest-rate	669,576	612,965	606,159	10%	9%	7,466	7,722
– currency	750,540	701,667	680,870	10%	7%	7,521	8,961
– equity, commodity and interest-rate	1,023	0	0	–	–	0	6
Options	324,461	408,383	288,035	13%	-21%	4,059	3,919
– interest-rate	10,015	11,266	13,500	-26%	-11%	33	34
– currency	301,115	386,486	266,613	13%	-22%	3,395	3,256
– equity, commodity and interest-rate	13,331	10,632	7,922	68%	-25%	632	630

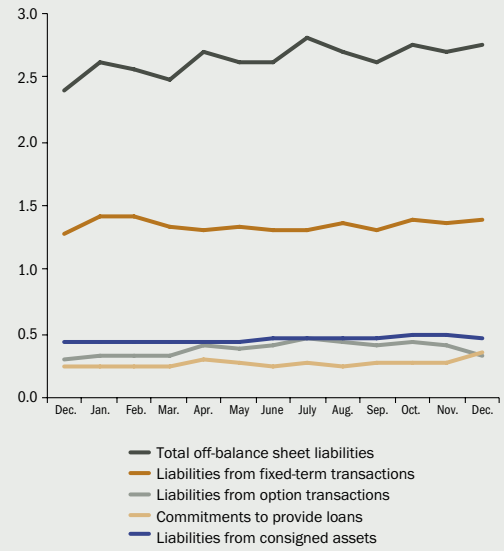
Source: NBS.

Chart 40 **Amount of off-balance-sheet assets in the sector (in SKK billion)**



Source: NBS.

Chart 41 **Amount of off-balance-sheet liabilities in the sector (in SKK billion)**



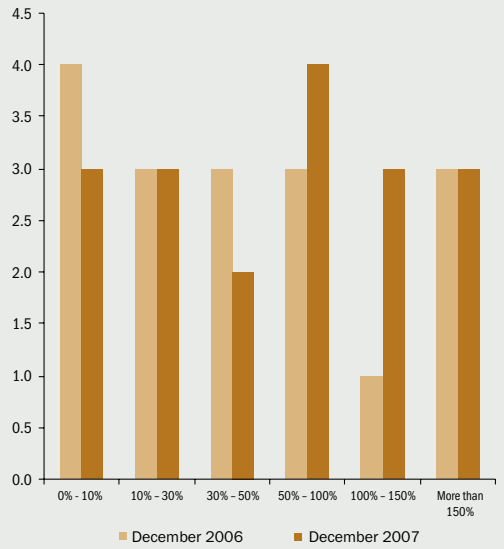
Source: NBS.

with long off-balance sheet positions created mainly with help of currency swaps and forward. Purchase of currency derivatives in name of customers (mainly of residential companies, which need to be hedged against foreign exchange risk) represents the second alternative why banks deal with these instruments. This is specific mainly for options, which are nearly exclusively used for these purposes. Because banks conclude these positions with options immediately with symmetrical contracts on interbank market, they are not exposed to any risk of exchange rates changes. The most frequently denominated foreign currencies for derivatives are euro, dollar, Czech koruna and forint.

Derivatives for interest instruments cover nearly the whole remaining part of total derivatives volume. They mainly consist of interest rate swaps and forward rate agreements (FRA). Around 0.8% of derivatives reported in the December off-balance sheet is tied with share instruments. Volume of share derivatives had increased in the previous year by nearly 70%. Positive December balance in year-end sector balance was even tied with commodity derivates (only as options), even if in this case it is only a negligible proportion. During the months of July and August the credit derivatives were represented, by means of one bank, which had closed credit default swaps in that period in the amount of about SKK 200 million.

To measure the importance of derivative activities for particular banks, we can partly use total volume of derivatives to balance sheet total indicator. Chart 42 shows the distribution of this indicator. 19 of 27 banks and branches of foreign banks present on the Slovak market as of December 31, 2007 had a no-zero volume of derivates in off-balance sheet. Total ratio of underlying instruments value of derivates and balance amount in the sector decreased by nearly 2 p. p. to 105% by the end of 2007 in comparison with previous year Also the non-uniformity of this indicator between banks was reduced. The number of banks

Chart 42 **Distribution of underlying assets derivates value on total assets in sector**



Source: NBS.
The chart only contains banks, with 'not zero' relevant ratio.

Table 5 **Year-on-year change in other off-balance sheet instruments** **(in SKK million)**

	XII. 2007	VI. 2007	XII. 2006	Year-on-year change	Change since VI. 2007
Guarantees					
Issued guarantees including documentary credits	97,028	93,226	69,935	39%	4%
Received guarantees including documentary credits	990,160	912,550	859,131	15%	9%
of which: real estate	403,957	352,260	342,749	18%	15%
of which: securities under repo transactions	307,558	316,020	231,462	33%	-3%
Loan commitments					
Commitments to provide loans	347,094	251,438	230,128	51%	38%
Commitments to receive loans	56,480	43,034	30,875	83%	31%
Assets in safe custody					
Assets received for safe custody	465,583	454,665	450,534	3%	2%
Assets provided for safe custody	2,479	2,821	3,309	-25%	-12%

Source: NBS.

where the volume of derivatives exceeds the balance sheet volume has increased by two.

Other off-balance sheet transactions

Guarantees from right of lien, received guarantees, guaranteed transfer of rights and other guarantees constitute the largest non-derivative item on the off-balance sheet. Value of this item amounted to SKK 881 billion as of December 31, 2007. The biggest contribution to this value may be attributed to received guarantees for real estates, their volume representing SKK 404 billion, increasing by 18% year-on-year. This growth reflects constant price increase of real estates on the market and relatively high dynamics in issued loans guaranteed by real estates. Second significant part of received guarantees is made by securities received by banks in reversed REPO trades. Volume of these securities in the banks' off-balance sheets developed as volatile in term of the whole sector when it fluctuated from SKK 188 billion to SKK 388 billion during 2007.

Future issued loans rose sharply with 50% rate. As of December 2007 their value increased to the level of SKK 347 billion. This number does not represent the real future drawing because first of all, companies have open credit lines in various banks at the same time, where summary of such contracted loan frames exceeds real value they plan to draw in the future. Rate of foreign currency loan promises decreased by 8 p. p. to 22%.

1.5 Profitability

When assessing the year-on-year profitability development, it is not possible to clearly define the trends that would refer to the profitability development in the whole sector. In view of financial sector stability is it important that the number of banks which increased their net profit year-on-year, has grown.
We can negatively assess the minimum increase of gross income from bank activities in the sector. Interest income increased mainly in large banks, when banks have exploited their position on the market and increased interest income through higher volume of loans. The remaining banks noticed slighter growth of interest income. Non-interest income decreased year-on-year. In most banks the income from trading decreased, mainly from the debt securities. In selected banks the amount of net provisioning increased. The sector´s operational efficiency deteriorated mainly due to lower growth of gross income. In most banks the operating expenses decreased or increased only slightly.

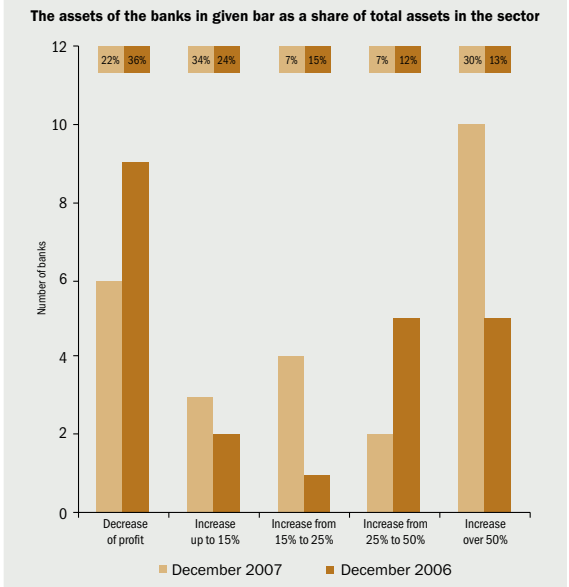
Net profit of banking sector was lower by 1,3% year-on-year according to preliminary data for 2007. We need to state that the aggregate decrease was influenced by significant decrease of profit in one bank. Without this bank's result, the sector's profitability would increase by nearly 17,3% year-on-year. A more detailed view on the sector's profitability development in 2007 is provided by profitability analysis in single banks.

In 2007 there was a decrease in number of banks with year-on year fall in net profit, and at the same time, the number of banks with highest growth profit increased (Graph 43).

Branches of foreign banks recorded the most significant profitability increase. High performance (in range of 20% to 60%) was noted by middle-large banks. Large banks noted lower pace in profit increase. In spite of relative lower increase of net profit in three largest banks, their share on the absolute profit creation in sector in 2007 increased to 61% (in 2006 to 57%).

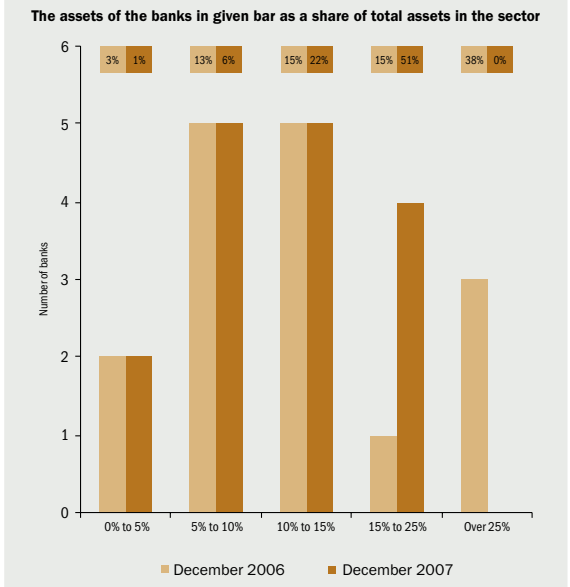
The development of net profit share on bank´s own funds was less favourable. Banking sector´s ROE[12] decreased from 22% to 18% year-on-year. The indicator was negatively influenced by increase of own funds in most banks, apart from negative development in profitability.

Chart 43 **Distribution of year-on-year change of bank net profit**



Source: NBS.

Chart 44 **Distribution of ROE in banking sector**



Source : NBS.

12 *Weighted by average amount of own resouces.*

Table 6 **Year-on-year changes in basic categories of expenses and income** **(in SKK billion)**

	December 2006	December 2007	Change v %
(a) Operating expenses	30.04	33.72	12%
(b) Gross income	55.08	56.97	3%
(c) Net interest income	34.59	40.10	16%
(d) Net non-interest income	20.49	16.87	-18%
(e) Net income (b – a)	25.04	23.24	-7%
(f) Net profit after tax	17.78	17.55	-1%

Source: NBS.

Similar to the evaluation of changes in absolute profitability, also when evaluating ROE, the positive development in middle-large banks was confirmed. The ROE indicator decreased in large banks.

When evaluating profitability, the structure analysis of achieved profit is important.

Gross income from bank activities, generated by net interest and non-interest income, have recorded a low increase in 2007. While they increased nearly by 30% year-on-year in 2006, it was only by 3% in 2007. Almost all banks have recorded lower growth. The reasons for decrease were various in individual banks.

Net interest income sustained positive growth tendency within the sector in 2007. Development was positive mainly in the largest banks that contributed to the growth of absolute net interest income in the sector by nearly 70%. Remaining banks have recorded a less significant growth.

Lower growth of gross income was influenced by the development of non-interest incomes to the largest extent. These decreased in eleven banks and several banks recorded lower growth than in 2006. There were several reasons for decrease in non-interest income and one cannot talk about definite tendency in the sector. Other operational income decreased in several banks. Some banks recorded year-on-year decrease of income from trading. Considering the used method for calculating non-interest income, they are also negatively influenced by expenses for sale of receivables.

Net interest income

Net interest income have been the most significant part of bank gross income in 2007. The share of net interest income on the gross income increased from 63% in 2006 to 70% in 2007 year-on-year. Interest income was made mainly of household income and income from corpoarte sector (72%) and from central bank (21%). The biggest proportion of expenses were created by corpoartes and households (55%) and banks (36%).

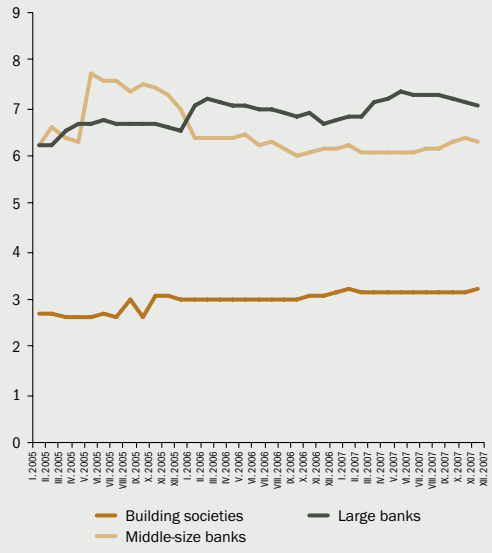
Banks were able to increase interest income more significantly than interest expenses in 2007. Mainly incme from corporate sector and households were growing. There was a relative growth also in income from REPO trades with NBS.

The biggest part of net interest income was acquired by the tree biggest banks, when at the end of 2007, their share on the net interest income of sector was 60%.

The largest banks reached the highest interest spread in the household sector in 2007 and at the same time one of the highest net interest income growths.

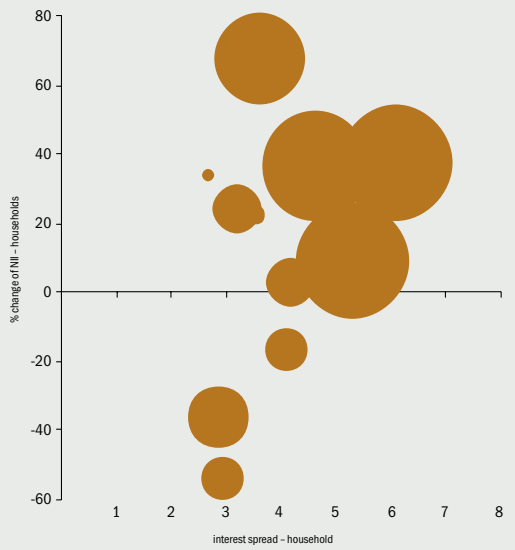
Hence, the theory proved to be true that concerning earnings in retail banking, the size of banks is of importance (and the related amount of loans provided,

Chart 45 **Interest margins on household loans by groups of banks**



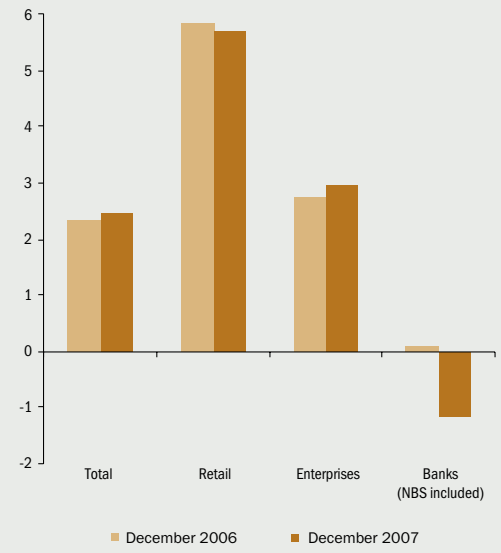
Source: NBS.
Interest margin is defined as share of net interest income from households and loans for households.

Chart 46 **Interest spread and growth of net interest income from household sector**



Source: NBS.
Chart shows only banks, which are active by providing housing loans. Size of bubbles shows the share of bank on sector assets. NII – net interest income

Chart 47 **Interest spread in banking sector**



Source: NBS.
Interest spread is defined as difference between income share on assets and expenses share on liabilities for given sector.

flexibility and availability of banking services, risk management, etc.), and not interest rate margins.

Growth of interest income was mainly influenced by volume growth of provided loans for households and corporate sector. Total interest spread increased slightly. Interest spread for household sector even decreased year-on-year. Banks providing corporate loans have relatively low spreads, what is connected with strong competition in this sector. Banks interest spread for corporate loans increased in 2007.

Decrease of interest spread from bank transactions was caused by one bank. In majority of banks the interest spread from bank transactions was negligible.

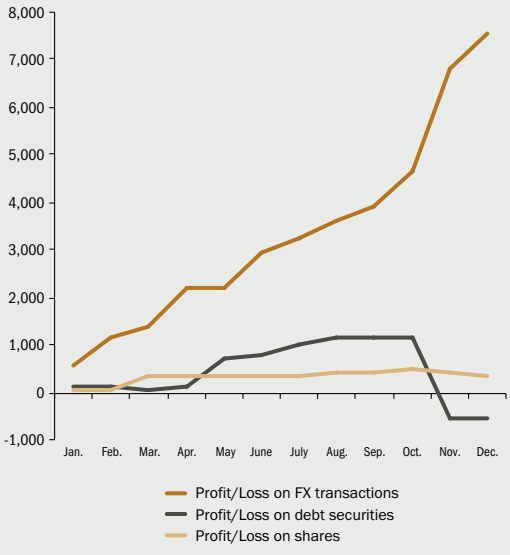
Non-interest Income

Non-interest income grew in 2007 in slower pace than in 2006. Their share on total gross income also decreased, they comprised only 30% of gross income from bank activities in 2007.

In comparison with 2006, income from fees increased absolutely and relatively. It is mainly related to the growing number and amount of client's bank transactions. The three largest banks held the dominating position what concerns fee income.

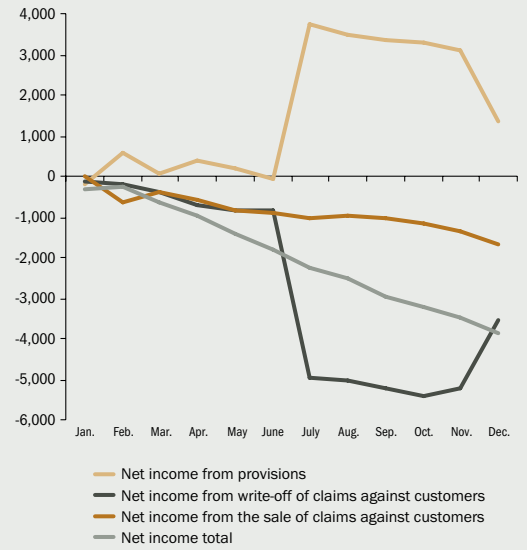
Total volume of income from trading changed only slightly year-on-year. Almost all income came from FX operations (mainly from currency conversions). Loss was reported by banks from transactions with debt securities (dealing with debt securities and income from interest derivatives) and only trading with shares was profitable. When evaluating income from trading securities we need to state that some banks hedge interest rate risk in portfolio for sale (AFS) and held to maturity (HTM). Total net profit of banks includes

Chart 48 **Trading income**
(in SKK million)



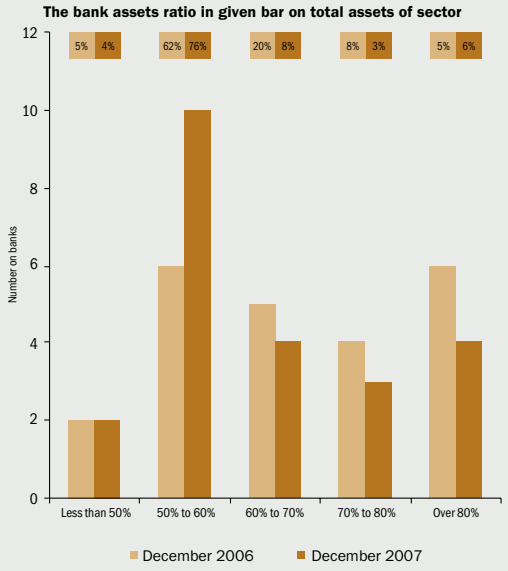
Source: NBS.

Chart 49 **Incomes from net provisions, write off and sell off of receivables (in SKK million)**



Source: NBS.

Chart 50 **Distribution of cost-to-income ratio in sector as of December 2007**



Source: NBS.

valuation of derivative instruments, but does not include valuation of instruments from portfolio for sale, or held to maturity. So there can be some distortion in assessing the total income from securities. Growth of income from capital securities had a positive impact on profitablity in selected banks. Income from other derivative instruments were minimal.

The financial market crisis has not influenced trading income in banking sector as a whole. It was negatively reflected into revaluation of debt securities in selected banks only.

Income from provisioning, write off and sell off receivables

Volume of provisions in banking sector decreased nearly by SKK 650 mil. in 2007. At the sector level, a significantly dissolution of provisions in comparison to their creation happened.

When looking at various banks we can see an inverse tendency, when in most banks the volume of provisions increased in 2007 and the sector decrease was caused by significant decrease in one institution (due to significant write off of defaulted loans and the consecutive decrease of provisions).

Development of provisions volume is influenced by write off and sale of receivables. In both cases, expenses from write off or sale increased and consecutively, there was dissolution of provisions. Banking sector wrote off bigger volume of clients' loans in 2007 than in 2006. In majority of banks also net expenses for sale of customers` receivables increased year-on-year.

Total income of banking sector from writing off and selling-off receivables and net provisions were negative and reached a loss of SKK 3.8 billion at the end of 2007. In other words, this is a credit loss from loan portfolio of the banking sector.

Operating expenses

Efficiency of operation, measured with indicator *cost -to-income ratio*, deteriorated year-on-year by the end of 2007 in banking sector when the value of indicator rose from 55% to 59%. The indicator value decreased in several banks. Those were mostly branches of foreign banks which have increased their gross income significantly. Larger banks recorded only slight changes, they fluctuated within the range of 50% to 60%.

Operating expenses have alone increased in sector by 12%. The biggest share on growth was taken by purchased performance, mainly for administration and maintenance of informational technologies and expenses related to euro acceptance.

1.6 Capital adequacy

During 2007 the capital adequacy in all banks stood over the minimum level of 8%. The trend of gradual average value decrease in capital adequacy (average weighted by size of risk weighted assets) slowed in 2007. This value decreased from 13.0% to 12.4% year-on-year. But it went under 9% in some banks. Many banks increased the amount of own funds in a form of drawing subordinated debt or from profit generated in 2006. After implementation of Basel II we can expect further decline of capital adequacy by about 1 p. p. The reason is mainly the implementation of capital requirement to cover operational risk. As of December 31, 2007, three banks reported, according to Basel II, capital adequacy between 8% and 9%.

During 2007, the gradual decline trend in capital adequacy moderated – this tendency could have been noticed in 2005 and 2006 (Chart 51). Average value od capital adequacy (weighted by size of risk weighted assets) decreased from 13.0% to 12.4% year-on-year. The rise in capital amount contributed to slowing down the rate of capital adequacy decrease, which was rather stable in previous years. This volume, which stood at around SKK 80 billion in 2005 and 2006, increased by SKK 15.5 billion in 2007. Growth rate of risk weighted assets rose slightly (they increased by 16% in 2006 year-on-year and by 25% in 2007).

Capital amount increased mainly during the first half of 2007. In most banks the capital increase was made of retained profit generated in 2006.

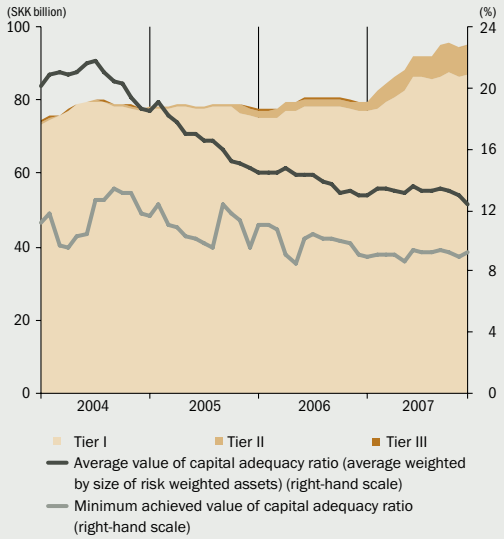
The quality of capital remains high, and that despite of increase in additional capital (Tier II) on total capital from 3.0% to 9.8% year-on-year.

All banks accomplished the prescribed limit of capital adequacy in 2007 (8%).

As mentioned above, the growth tendency of risk-weighted assets from previous years continued also in 2007. The growth was caused by increase of bank loan activity.

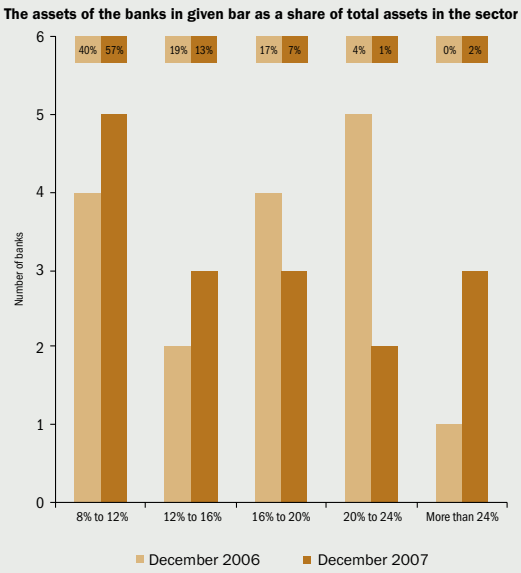
In period starting April 1 to December 31, 2007 the banks could calculate their requirement for capital either according to the legislation valid in the past (Basel I), or according to new legislation[13] (Basel II). All

Chart 51 **Development of capital adequacy in banking sector**



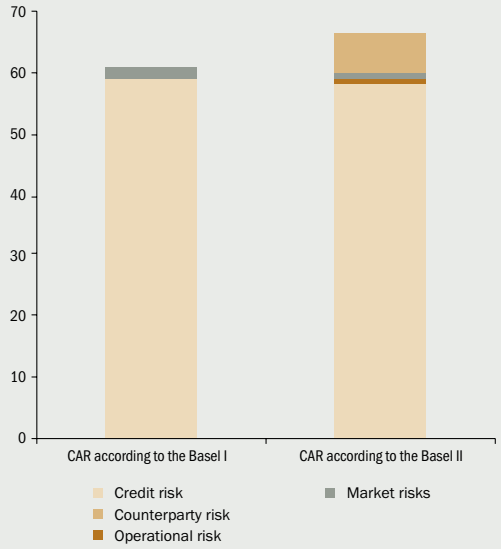
Source: NBS.
Note: The average in this case means the average weighted by RWAs.

Chart 52 **Distribution of capital adequacy ratio in the banking sector**



Source: NBS.

Chart 53 **Structure of capital requirements according to Basel I and Basel II (in SKK billion)**



Source: NBS.

banks, expect for one, utilized the option to calculate capital requirement according to Basel I. As of December 31, 2007 data based on both approaches are available. Hence, it is possible to assess the impact of the new legislation on bank capital adequacy.

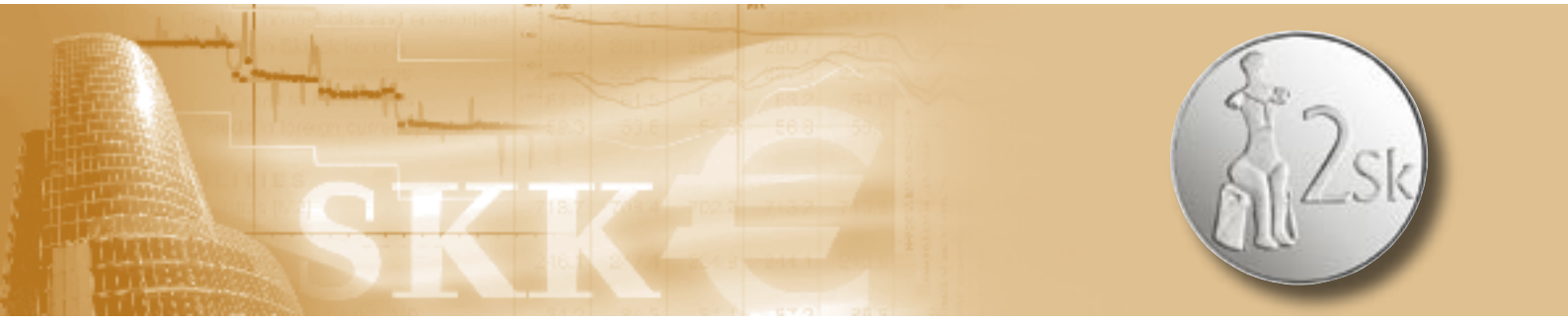
This comparison shows that while according to Basel I the value of capital adequacy (weighted by volume of risk weighted assets) stood at 12.4%, according to Basel II, it stood at 11.4%. Requirement for own assets increased in almost all banks. Reason for this increase is mainly the implementation of additional capital requirement for operating risk, which was not implemented in Basel I. This requirement for credit risk, which represents the largest proportion of capital requirements, changed by 10% the most in majority of banks.[14]

Also by calculating capital requirement according to Basel II, all banks fulfilled the prescribed limit. Three banks had a lower value of capital adequacy than 9%.

13 *Directive 2006/48/EC relating to the taking up and pursuit of the business of credit institutions and Directive 2006/49/EC on the capital adequacy of investment firms and credit institutions, which were implemented into Slovak legislation mainly by means of Act No. 483/2001 Coll. On banks and amendment of several acts as amended, and the Decree of the NBS No. 4/2007 on banks' own funds of financing and banks' capital requirements and on securities dealers' own funds of financing and securities dealers' capital requirements.*

14 *Capital requirements for credit risk were calculated by all banks according to standardized approach. To calculate requirement for operational risk, six banks used the approach of basic indicator, 10 banks calculated this requirement according to the standardized approach.*

Insurance sector



2 Insurance sector

In 2007 the premium written amounted to SKK 54.1 billion, out of which life insurance accounted for SKK 25.3 billion and non-life insurance for SKK 28.5 billion. Technical premium written including also investment contracts reported within the meaning of IFRS, amounted to SKK 28.5 billion in life insurance. In 2007 was the smallest difference between the technical premium written in life and non-life insurance in the history of Slovakia. If the faster growth of technical premium written in life insurance compared to non-life insurance continues, we can expect that in the year 2008 technical premium written in life insurance shall reach higher value than the technical premium written in non-life insurance. Claims incurred rose by 13% in comparison with 2006 to stand at SKK 24 billion. The profits of insurance companies rose by 2% to the value of SKK 5.6 billion as a consequence of higher rise in technical yields compared to technical expenses. Return on assets and equity grew slightly. The investment of technical provisions remained substantially unchanged and they continue to be placed in low-risk assets.

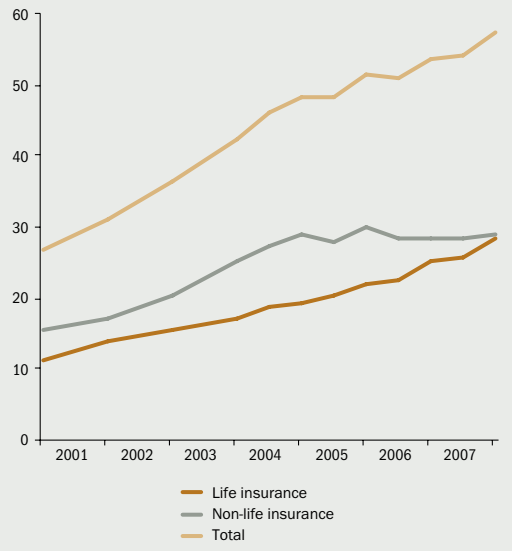
Premium written and technical premium written

Gross premium written amounted to SKK 54.1 billion in 2007, which is equivalent to a rise of 5.5%. Year-on-year the premium written increased both in life insurance and non-life insurance. The premium written in life insurance amounted to SKK 25.3 billion, which is equivalent to a growth by 9.7%, while the premium written in non-life insurance grew only by 2.2% to the value of SKK 28.8 billion.

Because premium written were reported in accordance with Slovak accounting standards up to the end of 2005, and not in accordance with the international accounting standards for financial reporting IAS/IFRS, the NBS analysed technical premium written, which may be defined as the price agreed in individual insurance contracts without regard to the method of their financial reporting.

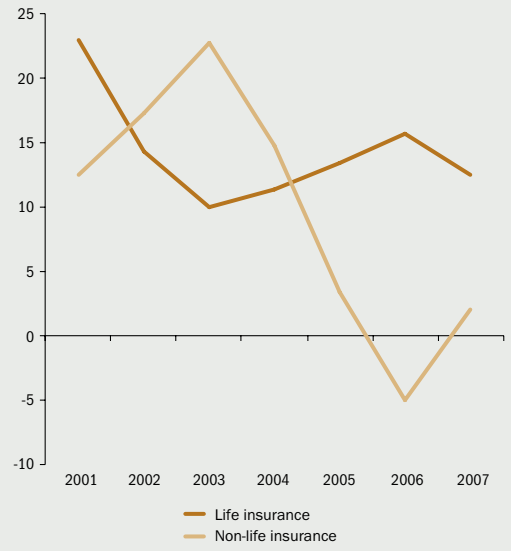
Technical premium written came to SKK 57.4 billion in 2007, of which life insurance accounted for SKK 28.5 billion and non-life insurance accounted for SKK 28.9 billion. The difference in technical premium written in life and non-life insurance has thus decreased to SKK 0.4 billion, which represents the smallest difference in history. Under the continuous development

Chart 54 **Technical premium written (in SKK billion)**



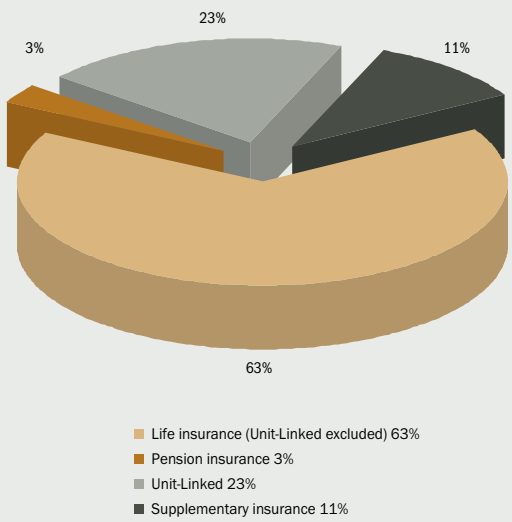
Source: NBS.

Chart 55 **Rate of increase in life and non-life premium written (in %)**



Source: NBS.

Chart 56 **Life insurance broken down by amount of technical premium written as of December 31, 2007 (in %)**



Source: NBS.

it is expected that in 2008, the technical premium written in life insurance shall reach higher value than the non-life.

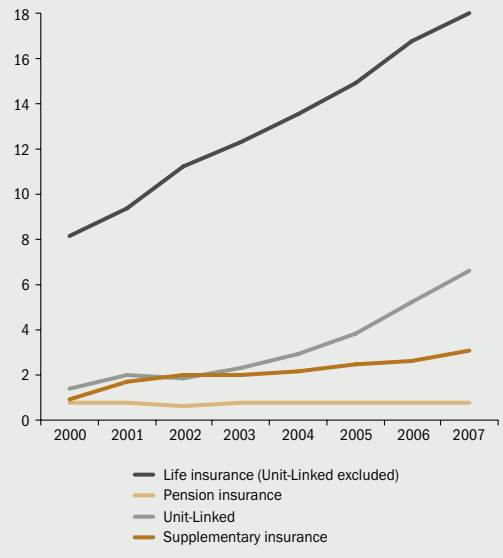
The trend of strong growth in technical premiums written in life insurance continues, under the stagnation in non-life insurance, monitored since 2005. The number of insurance contracts does not decrease in non-life insurance, but it is rather the cheaper insurance coverage. The technical premium in life insurance grew in 2007 by 12.4%, compared to the growth in non-life insurance being only 2.15%.

Insurance intermediaries and reinsurance intermediaries belong to the most significant distribution channels. In compliance with the Act No. 340/2005 Coll. on Insurance Mediation and Reinsurance Mediation and on the Amendment and Supplementation of Certain Acts as amended, there are five main categories of insurance intermediaries and reinsurance intermediaries in the Register of insurance intermediaries and reinsurance intermediaries. As of December 31, 2007, 475 insurance agents, 24 insurance brokers, 16 076 exclusive insurance intermediaries, 22 025 subordinate insurance intermediaries and 4 reinsurance intermediaries were registered. The register contains also insurance intermediaries from other member states, their number being 8328 as of December 31, 2007.

Insurance groups

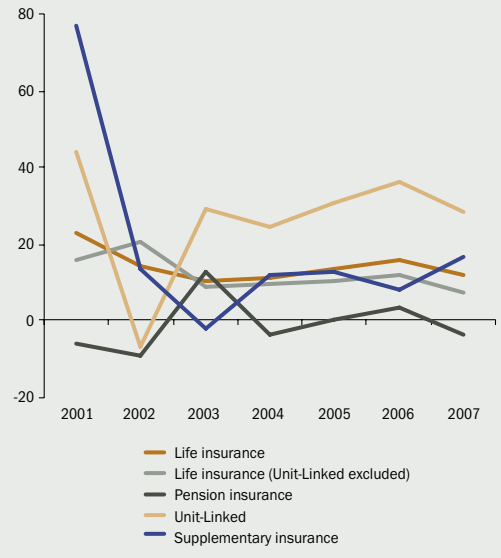
The largest share of technical premium written in life insurance is accounted for by the insurance group Life insurance other than Unit-Linked (i.e. life insurance linked to an investment fund), which includes such products as assurance on death, assurance on survival to a stipulated age, combinations of assurance on death and assurance on survival to a stipulated age, and various endowment policies. Technical premium written in this group for the year 2007 amounted SKK 18 billion, which represents 63% of total technical premium written in life insurance. This share decreased from 66% in 2006, on

Chart 57 **Technical premium written in life insurance (in SKK billion)**



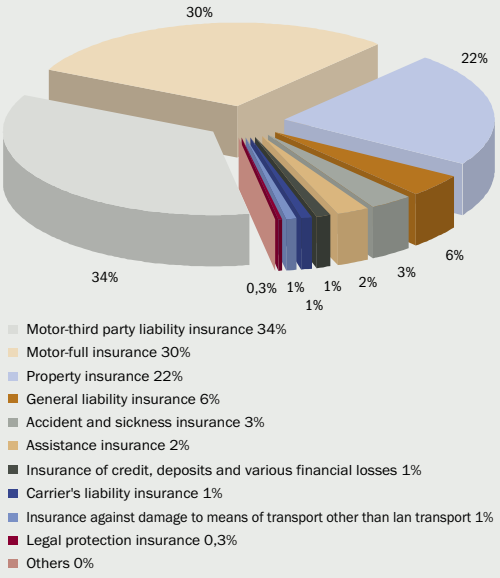
Source: NBS.

Chart 58 **Rate of increase in technical premium written in life insurance (in %)**



Source: NBS.

Chart 59 **Non-life insurance groups broken down by amount of technical premium written as of December 31, 2007 (in %)**



Source: NBS.

the other hand the second most important group obtained Unit-Linked insurance, the share of which grew from 20% in 2006 to 23% in 2007.

Pension insurance continues to report low share in technical premium (only 3% of total technical premium written in life insurance) and after a slight growth in 2006 and 2005, it noted again a year-on-year drop by almost 4%.

After a drop in 2006, the non-life insurance noted a repeated growth of technical premium. A fast fall in technical premium written in compulsory third party liability insurance was stopped and for the remaining group the technical premium written was growing.

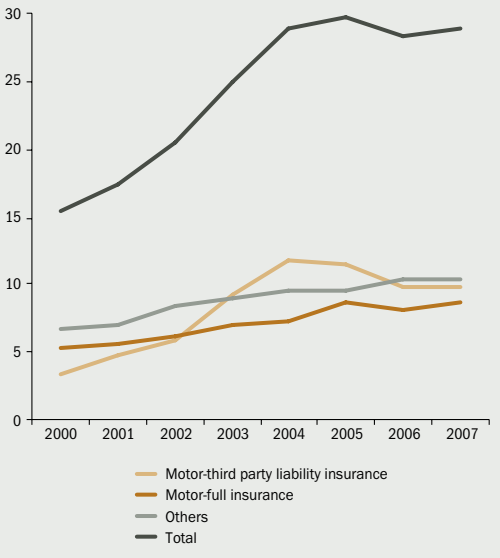
Technical premium written in compulsory third party liability insurance decreased in comparison to the year 2006 by SKK 50 million and reached the value of SKK 9.7 billion, which represents a drop of only 0.5% (drop in 2006 was almost 16%). Compulsory third party liability insurance therefore remained the largest component of non-life insurance with a 34% share on technical premium written and together with motor insurance it represents up to 64% of technical premium written in non-life insurance. Technical premium written in motor insurance returned to the growing tendency which was interrupted in 2006 and it grew by 7% in 2007.

Technical premium written in insurance groups other than motor insurance grew by 0.8%. Property insurance accounts for the largest part, increasing by almost 2%.

Reinsurance

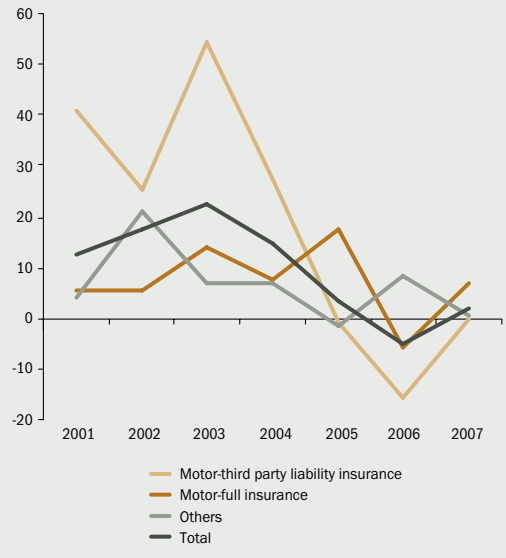
The premium written in 2007 in the amount of SKK 9.7 billion was ceded to the reinsurance companies, which represents a decrease in comparison to 2006 by 5.2%. As a result, the decline in share of premium written ceded to the reinsurance companies for the year 2006 declined. There was a decline in premium written in both life and non-life insurance ceded to

Chart 60 **Technical premium written on non-life insurance (in SKK billion)**



Source: NBS.

Chart 61 **Rate of increase in technical premium written in non-life insurance (in %)**



Source: NBS.

Table 7 **Ceding of technical premium written to reinsurers** **(in SKK billion)**

	2007	2006	Change	Share of premium written
Total	9.7	10.2	-5.2%	16.9%
Life insurance	1.3	1.4	-8.1%	4.4%
Non-life insurance	8.4	8.9	-4.7%	29.3%

Source: NBS.

the reinsurance companies. Of the total technical premium written, 16.9% were ceded premium.

Up to 87% of the cede premium written represents the non-life insurance, of which 29% of technical premium was ceded. In the area of life insurance 4.4% of technical premium were ceded.

Market concentration

The share of three biggest insurance companies in technical premium declined again after a grow in the first half-year of 2007 and for the whole year 2007 it reached 61.3%, which represents only a very slightly lower value than for the year 2006.

A gradual decline of market concentration is caused by mainly a drop in market concentration in non-life insurance where the proportion of three biggest insurance companies declined by 7 p. p. since 2004, while it was only by 1.5 p.p in life insurance. The market concentration in non-life insurance is higher in the long term than in the life insurance.

The market concentration in life insurance declined significantly in 2007 in comparison to 2006 in Unit-Linked insurance, what concerns other life insurance products and non-life insurance, there were only minor changes in market concentration in 2007.

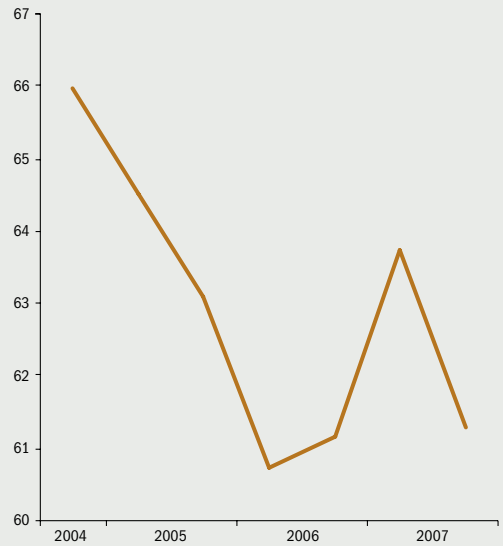
The changes in market shares in non-life insurance were mainly caused by changes in market shares for motor insurance.

Claims incurred

Claims incurred in 2007 amounted to SKK 22.8 billion, including SKK 10.7 billion in life insurance and SKK 12.1 billion in non-life insurance.

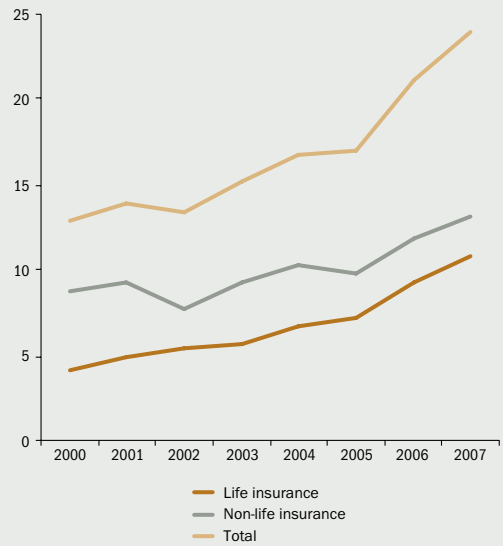
As it did with technical premium written, the NBS, for the purpose of this report, analyzed technical claims incurred (hereinafter the term „claims incurred" shall imply „technical claims incurred"). Claims incurred in life insurance increased in 2007 by 14.5% in comparison with 2006 and amounted to SKK 10.7 billion. In non-life insurance claims incurred rose slightly

Chart 62 **Market share of three biggest insurance companies** **(in %)**



Source: NBS.

Chart 63 **Claims incurred** **(in SKK billion)**



Source: NBS.

Table 8 **Loss ratio, cost ratio and combined ratio of non-life insurance groups** **(in %)**

	Loss ratio	Cost ration	Combined ration
Life insurance – supplementary insurance	22.83	25.55	48.38
Accident and sickness insurance	19.54	48.56	68.10
Motor third party liability insurance	48.50	28.70	77.20
Motor insurance	67.71	26.35	94.06
Other motor insurance	15.75	46.95	62.71
Transport liability insurance	42.20	37.62	79.81
Property insurance	35.85	31.86	67.71
General liability insurance	20.63	31.07	51.71
Insurance of credit, deposits and various financial losses	26.86	38.55	65.41
Legal protection insurance	29.81	28.47	58.28
Assistance insurance	41.79	41.92	83.71
Others	69.67	1.29	70.97
Total	48.47	30.05	78.52

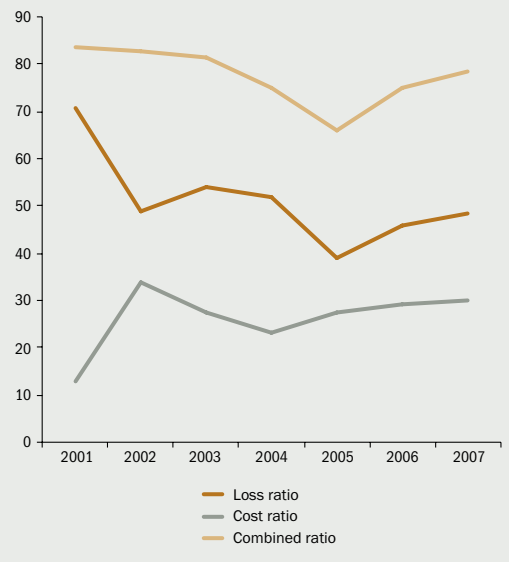
Source: NBS.

slower (the rise compared to 2006 was 11.6%) and amounted to SKK 13.2 billion.

When analysing the development of claims incurred in non-life insurance it is necessary to consider not only the development of this indicator, but also the development of earned premium, i. e. Technical premium amended by the change of unearned premium provisions (RPBO) and trend of net claims technical provision (RPP), which is enabled by the loss ratio which may be calculated as percentage share of the sum of claims incurred not deducted by the share of reinsurer and change of trend of net claims technical provision (RPP) for earned premium.

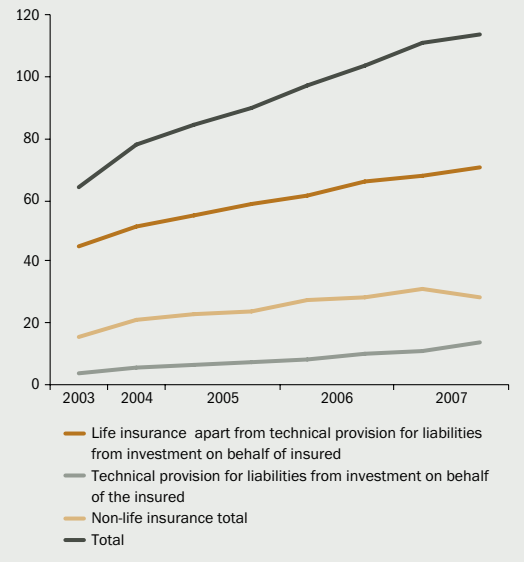
The loss ratio for the whole of non-life insurance in 2007 stood at 48.4 7%, representing an increase by 2.6 p. p. in comparison with 2006. The loss ratio increased in the biggest group of non-life insurance – liability insurance for damage caused by operation of motor vehicle, namely by 10.3 p. p. The increase was caused both by the claims incurred growth and

Chart 64 **Loss ratio, cost ratio and combined ratio** **(in %)**



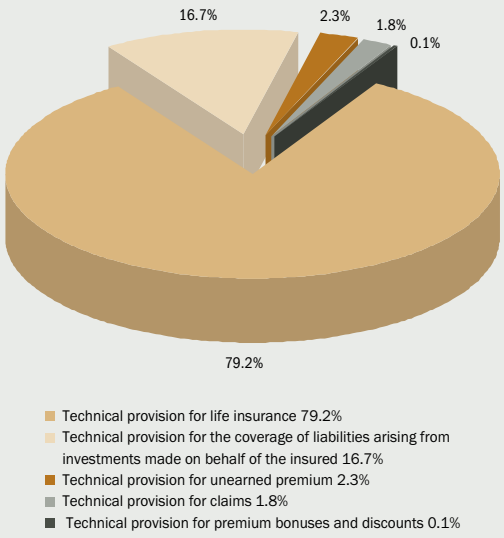
Source: NBS.

Chart 65 **Gross technical provisions** **(in SKK billion)**



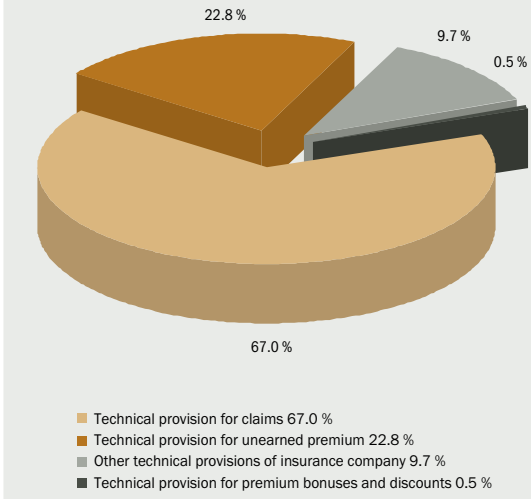
Source: NBS.

Chart 66 **Structure of gross technical provisions in life insurance (v mld. Sk)**



Source: NBS.

Chart 67 **Structure of gross technical provisions in non-life insurance (in %)**



Source: NBS.

decline of earned premium, with year-on-year declining since 2004. The loss rate declined by 4 p. p., or 1.5 p. p. in collision insurance and property insurance due to increase in earned premium at low growth of claims incurred.

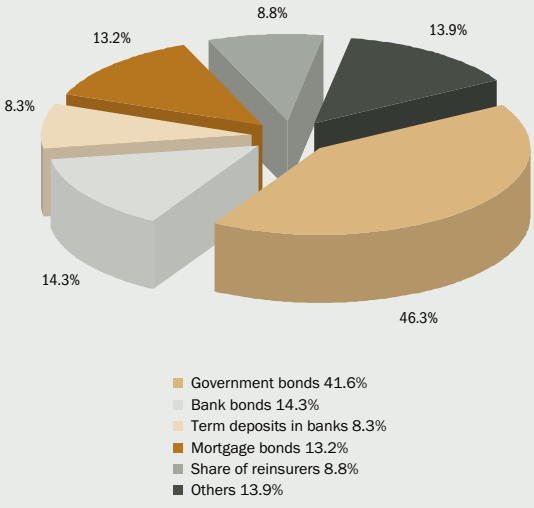
Technical provisions and their investment

The gross technical provisions without considering the reinsurer´s share on technical provisions totalled SKK 113.5 billion as of December 31, 2007, representing a year-on-year increase of by 9.3%. Provisions in life insurance amounted to SKK 84.8 billion, of which provisions for the coverage of liabilities arising from investment on behalf of the insured accounted for SKK 14.2 billion. Provisions in non-life insurance accounted for SKK 28.7 billion. The share of technical provisions in life insurance rose again and amounted to 74.7%.

The largest growth compared to December 31, 2006 was noted by the provision for coverage of liabilities arising from investment made on behalf of the insured, which increased by SKK 4.5 billion, representing a growth of 46.3%. Increase of this provision is in compliance with a high increase of technical premium written in the group of Unit – linked premium. Technical provision on life insurance increased by 7.6% to SKK 67.2 billion. Its share on total provisions in life insurance is declining gradually, although it is still at a high level reaching 79.2% as of the end of 2007 (decline compared to the year 2006 by 3.3 p. p.).

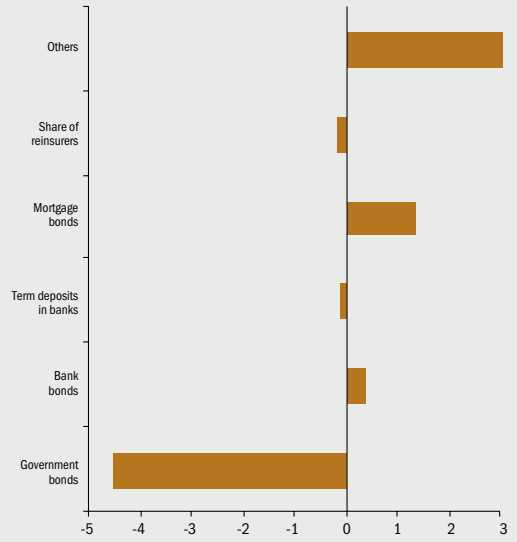
Technical provisions in non-life insurance increased compared to the end of 2006 by 1.1%. This slight increase was caused by mainly the drop in technical provisions for liability against SKP (Slovak Bureau of Insurance companies) by SKK 609 million and a slight growth in technical provisions for unearned premium and technical provisions for claims incurred.

Chart 68 **Investment of technical provisions (in %)**



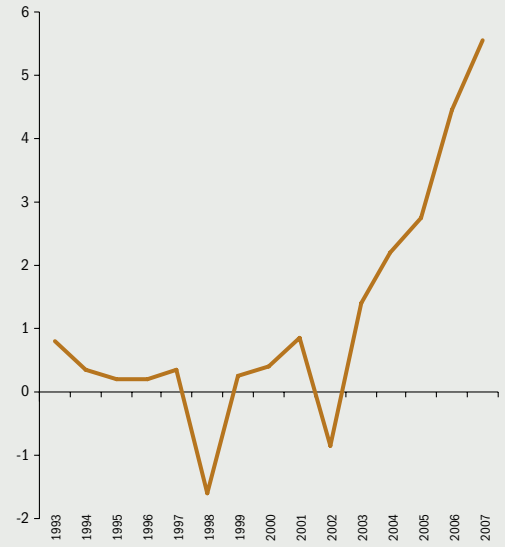
Source: NBS.
Government bonds :these are bonds issued by the Slovak or other EU governments, NBS and other central banks, guaranteed by Slovakia, bonds issued by EIB, EBOR or MBOR.

Chart 69 **Changes in the investment of technical provisions between 2006 and 2007 (in %)**



Source: NBS.

Chart 70 **Total profit of insurance companies (in SKK billion)**



Source: NBS.
Net profit for the calendar year.

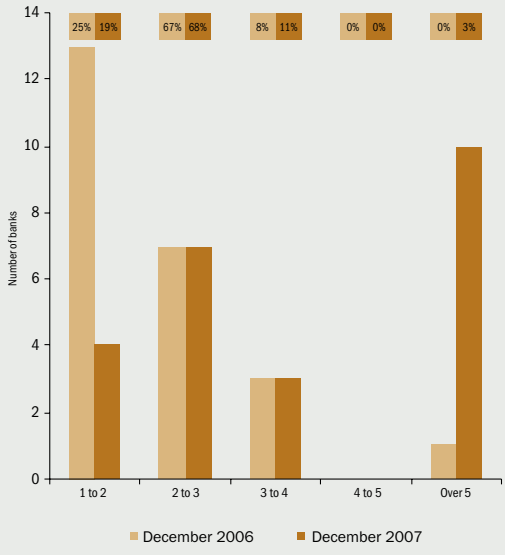
Gross technical provisions less provisions for the coverage of liabilities arising from investment made on behalf of the insured[15] amounted to SKK 99.3 billion as of December 31, 2007. They were covered by assets worth SKK 107.1 billion representing 107.8% of the created technical provisions excluding provisions for covering liability arising from investment on behalf of the insured. The provision investment is becoming more conservative, in low-risk assets. The share of provisions invested in bonds[16] declined by more than 4.5 p. p. to 41.6%, the proportion of mortgage bonds and other bank bonds increased.

Financial position of the insurance sector

The profit of insurance companies increased by 24.8% since 2006 and amounted to SKK 5.6 billion. The period of strong profit growth in the insurance sector has thus continued since 2004. Together with profit growth the ROE and the ROC increased.

In 2007 the loss on technical account of life insurance deepened, increasing by SKK 216 million to SKK 1.3 billion. In majority of insurance companies, lower profit or higher loss on the technical account of life insurance was caused by higher increase in technical costs. Profit from financial operations represented SKK 5.1 billion and increased by SKK 335 million when compared with 2006 which sufficiently covered loss on technical account of life insurance. On the other hand, profit on the technical account of non-

Chart 71 **Division of share in real and required solvency rate**



Source: NBS.
Percentage above the chart's bars represents share of premium written of insurance companies in particular bar on total sector's premium written.

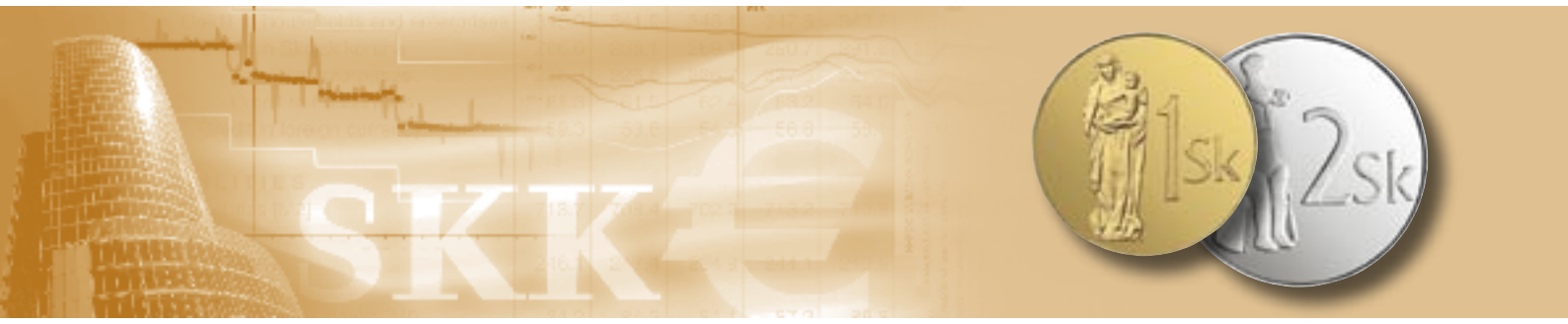
15 *Economic risk of investment in Unit-Linked Premium shall be born by the insured, therefore the investment of technical provision means are monitored after deducting Unit-Linked provisions.*
16 *Government bonds :these are bonds issued by the Slovak or other EU governments, NBS and other central banks, guaranteed by Slovakia, bonds issued by EIB, EBOR or MBOR.*

life insurance increased by SKK 1.1 billion to stand at SKK 3.3 billion mainly due to faster growth of earned premium in comparison with technical expenses not only for the whole insurance sector but individually in most of the insurance companies. Three insurance companies reported a loss in 2007.

The insurance companies solvency

From the point of view of assessing insurance companies solvency it is required that their real rate of solvency (i.e. equity) was higher than the required solvency rate and the level of guarantee fund would be at least the minimum value of guarantee fund. As of December 31, 2007 all insurance companies fulfilled both conditions. The share of total real solvency rate compared to the required solvency rate was 2.8 (2.9 in life insurance and 2.7 in non-life insurance). The value of this share increase by 0.2 year-on-year. The reason was mainly the increase of capital from the profit obtained in 2006. In all insurance companies the value of guarantee fund at the level of its minimum value in non-life insurance and in most insurance companies (with the exception of four) it was the same for life insurance.

Securities dealers



3 Securities dealers

Amount of customer transactions in securities made through securities dealers (hereinafter referred to as SD) has not changed, however, there have been changes in structure of traded instruments. Amount of bond transactions declined by more than a half, in contrast, derivative instruments transaction increased. Amount of customer assets under management increased by 7% year-on-year to SKK 30 billion. The capital adequacy ratio of Slovak securities dealers met the prescribed minimum level by a sufficient margin.

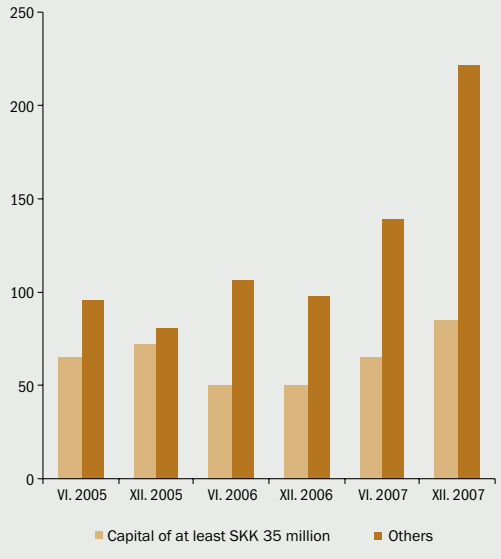
Capital adequacy

During 2007, the capital adequacy ratio of all non-bank securities dealers fluctuated above the statutory minimum required level of 8% for all subjects (for securities dealers with capital of at least SKK 35 million[17] the lowest ratio was 16% as of December 31, 2007, for other SD it was at least 83%).

Investment services and asset management

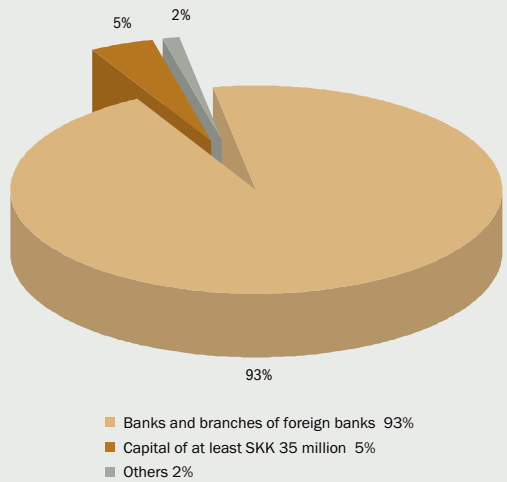
Total amount of customer transactions made under investment services IS-1 to IS-3[18] stood at SKK 1 793 billion for 2007, whereas up to 93% of these transactions were performed through banks. Compared with 2006, this amount changed only slightly, the transactions were then made in the total volume of SKK 1 810 billion.

Chart 72 **Average capital adequacy ratio of non-bank securities dealers** **(in %)**



Source: NBS.

Chart 73 **Types of securities dealers by share of customer transactions for the first half of the year 2007** **(in %)**

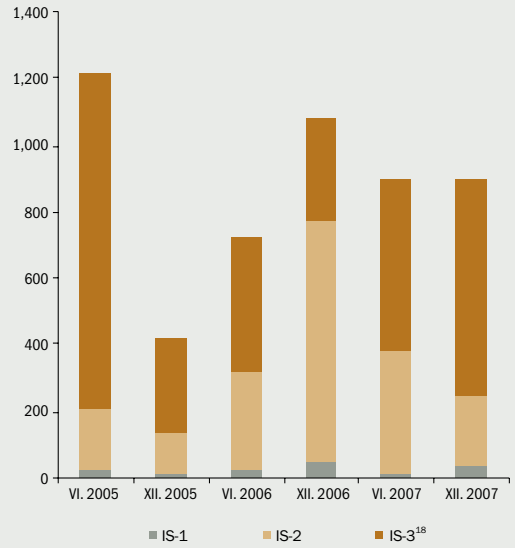


Source: NBS.

17 *Non-bank securities dealers having capital of less than SKK 35 million have no license for performing investment service IS-3 (see below).*

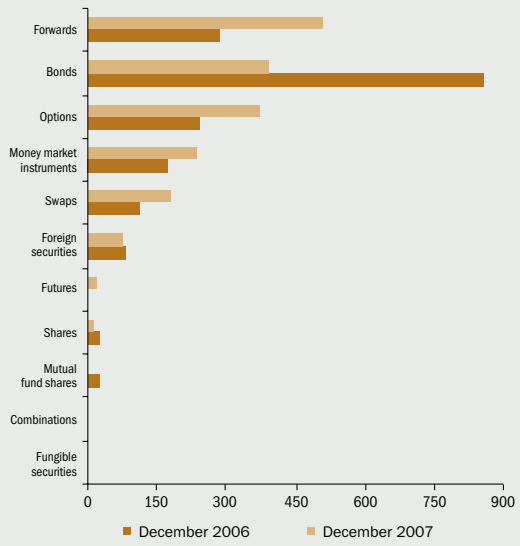
18 *IS-1= investment service as defined by Article 6 (2) (a) of the Securities Act, i.e. acceptance of customer´s instruction to buy, sell or otherwise use investment instruments and the subsequent forwarding of the customer´s instruction for the purpose of its execution.*
IS-2 = investment service as defined by Article 6 (2) (b) of the Securities Act, i.e. acceptance of customer´s instruction to buy or sell an investment instrument and its execution for an account other than the account of the service provider.
IS-3 = investment service as defined by Article 6 (2) (c) of the Securities Act, i.e. acceptance of customer´s instruction to buy or sell an investment instrument and its execution for own account.

Chart 74 **Amount and structure of customer transactions by type of investment service (in SKK billion)**



Source: NBS.

Chart 75 **Structure of transactions by investment instruments (in SKK billion)**



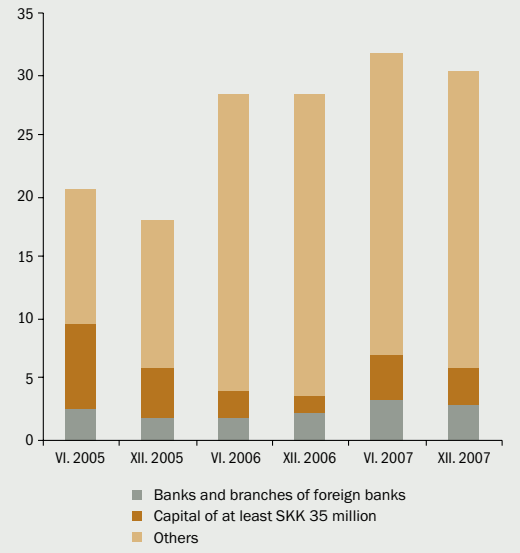
Source: NBS.

The transaction structure within individual types of investment services has changed year-on-year. Proportion of transactions made for the account of the investment service provider (under IS-3) rose from 39% in 2006 to 65% in 2007, on the other hand, the proportion of transactions made for the customer's account (under IS-2) declined from 57% to 32%.

The structure of traded instruments also changed. In 2006, the bonds transactions made up to 47% of all transactions, however in 2007, it was only 2%. A significant increase was recorded in derivative instruments transaction, in particular the forward contracts, options, swaps and futures. Proportion of these instrument transactions increased from 36% to 60% year-on-year.

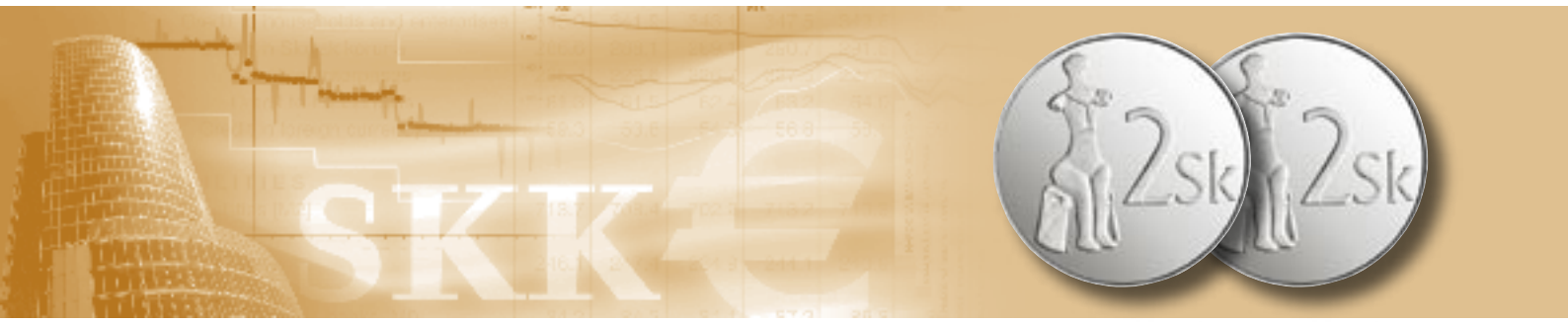
The amount of customer assets managed by securities dealers (including banks) rose by 7% year-on-year (from SKK 28 billion to SKK 30 billion).

Chart 76 **Amount of customer assets managed by securities dealers (in SKK billion)**



Source: NBS.

Collective investment



4 Collective investment

The net asset value managed by open-end funds after a moderate stagnation in 2006 increased by 25% in 2007. The investment of residential subjects into mutual funds grew, as well as the net asset value managed by domestic asset management companies. The capital was being moved from equity and bond funds into the money market funds, mixed funds and others, mainly the so-called secured funds. Stagnation of world finance markets caused lower average performance of equity funds and similar funds. Compared to 2006, higher profits/yield was brought by funds investing mainly into bond securities.

Assets in open-end mutual funds

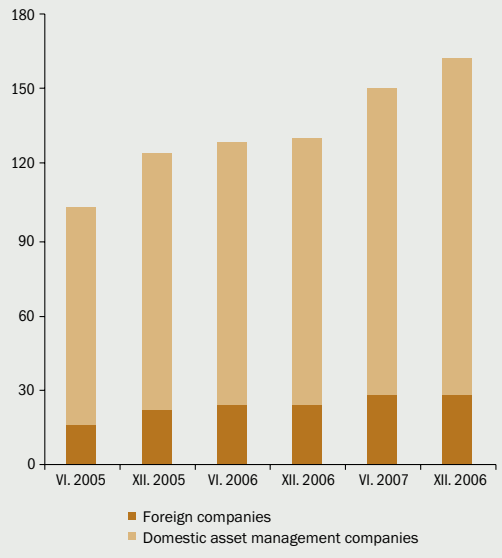
The total net asset value of domestic open-end funds and foreign collective investment subjects publically offered in the territory of the Slovak Republic and pertaining to sales to investors in the Slovak Republic increased in 2007 by SKK 32 billion, or by 25% to SKK 162 billion, of which by SKK 28 billion in domestic funds and by SKK 4 billion in foreign funds.

Most of the invested capital, up to 42%, was invested into money market funds. Investment into these funds, as well as in bond funds, mixed funds and funds of funds were managed mainly domestic asset management companies. On the other hand, the instruments in equity funds were managed mainly by foreign companies. The newly created specialized real estate funds contained 2% of net asset value invested by mutual funds as of the end of 2007.

Most of shares invested in domestic mutual funds, up to 87% as of December 31, 2007, were owned by residential households, which represent a slight increase compared to 82% as of December 2006. The non-residential share increased slightly from 0.7% to 1.3%, however it remains negligible.

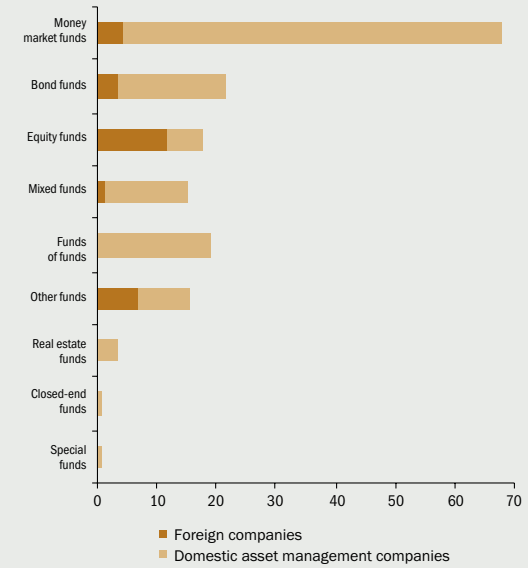
After a slow-down in 2006, the growth in resources invested into mutual funds continues in 2007. The net sales for 2007 amounted to SKK 26.5 billion, this value being negative in 2006.

Chart 77 **Amount invested in open-end mutual funds sold in Slovakia**
(in SKK billion)



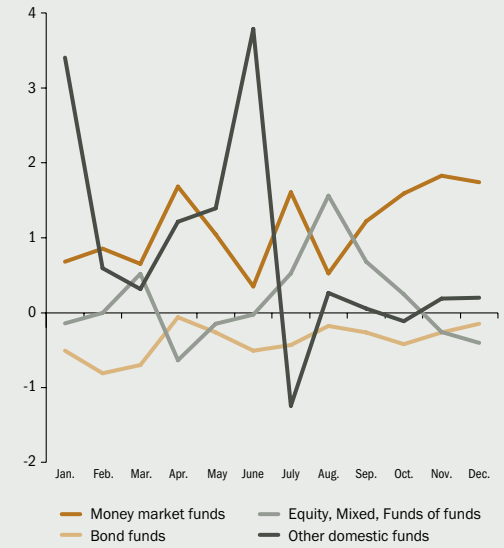
Source: NBS.
Since 2006 the figures include also closed-end and special funds.

Chart 78 **The asset value in individual funds as of December 31, 2007**
(in SKK billion)



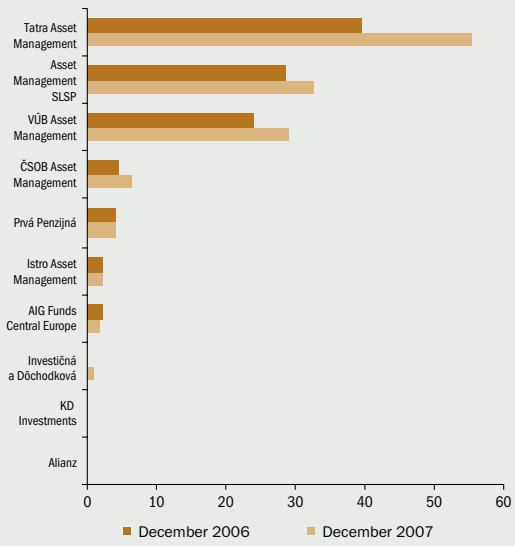
Source: SASS.

Chart 79 **Monthly net sales of open-end mutual funds in Slovakia (in SKK billion)**



Source: NBS.

Chart 80 **Net asset value of mutual funds managed by domestic asset management companies (in SKK billion)**



Source: NBS.

The equity funds were redeemed the most, the investors taking out from them SKK 6.2 billion in 2007, also the bond funds redemptions continued in the amount of SKK 4.5 billion. This money as well as new capital were transferred by the investors during the year mainly into money funds (net sales in the amount of SKK 14 billion), to other, mainly the so-called secured funds (SKK 9 billion) and mixed funds (SKK 8 billion). The amount of SKK 3.3 billion was invested into the newly created special real estate funds.

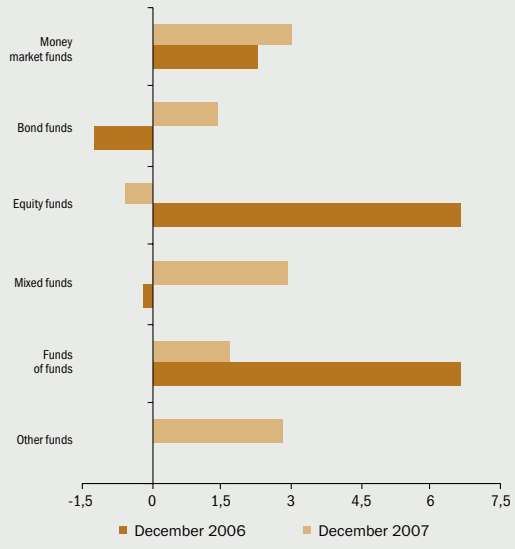
The distribution of net sales among individual domestic asset management companies was rather unequal in 2007. Tatra Asset Management maintained its leading position (net fund sales in the amount of SKK 13.5 billion), the positions of the other three asset management companies of big banks strengthened (sales in the amount of SKK 2 to 4 billion).

Performance of domestic open-end mutual funds

As of the end of 2007 the open-end mutual funds reported a lower year-on-year performance compared with December 2006. It was subdued by a slight increase in interest rates, world equity markets stagnation and Slovak koruna strengthening. This development of market factors was profitable only for money and mixed funds, which marked higher performance than in the previous year.

Gross return on money market mutual funds was comparable with interbank rate (3M BRIBOR), while the net return[19] typically exceeded the term deposit return.

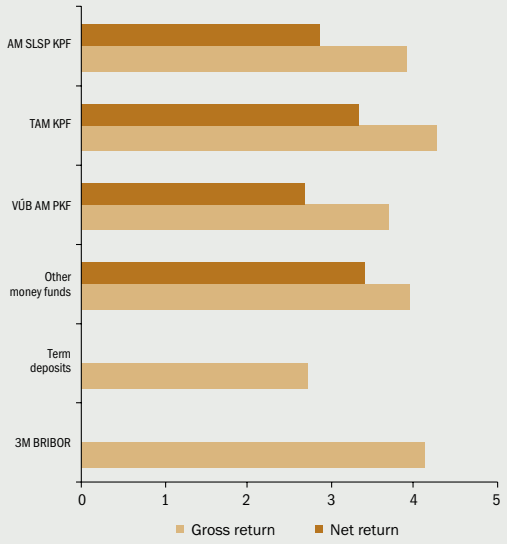
Chart 81 **Comparison of average annual performances of open-end mutual funds according to fund type (in % per year)**



Source: NBS, AAMC.
Funds are weighted by net asset value.

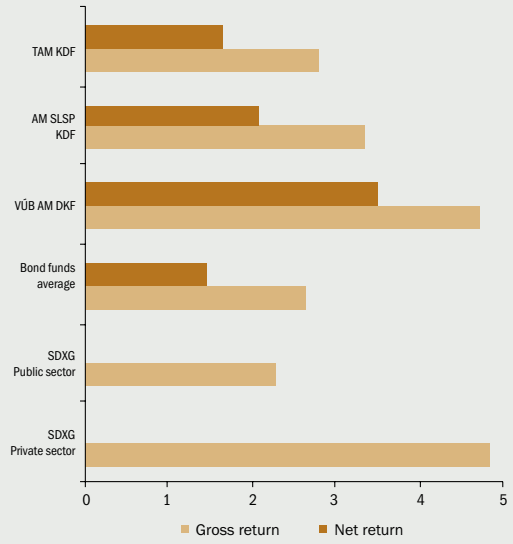
19 *Net profit is calculated by subtracting fees and costs from gross profit.*

Chart 82 **Comparison of one-year returns on the three biggest money market funds in Slovak koruna, the interbank rate and term deposits** **(in % per year)**



Source: NBS, AAMC.
Rate on term deposits is the average rate for the past 12 months calculated from the newly provided deposits. Other funds are weighted by amount of assets pertaining to sales in Slovakia.

Chart 83 **Comparison of one-year return on three biggest bond funds in Slovak koruna and Slovak bond indexes** **(in % per year)**

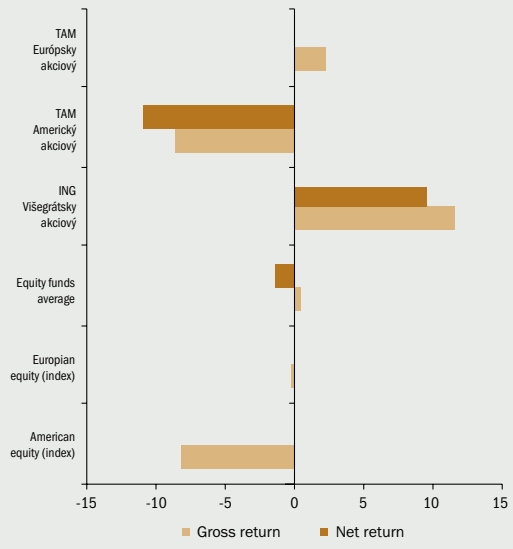


Source: NBS, AAMC.

Similarly, gross return of bond funds denominated in Slovak koruna amounted to values within the range determined by the development of bond indexes of private and public sectors of Slovakia.

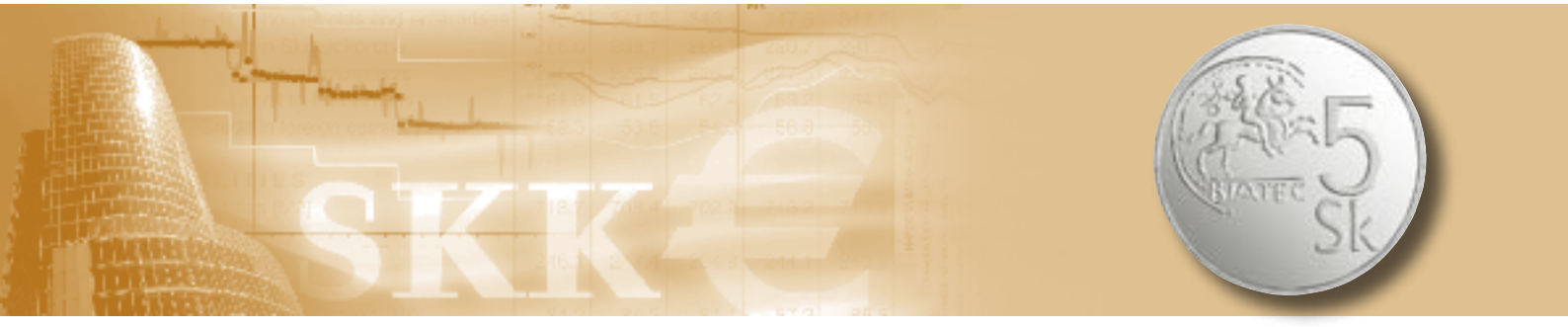
The development of equity funds was influenced mainly by stagnation on the European and American equity markets and the development of Slovak koruna exchange rate which strengthened its position against euro during 2007 by 2.8% and against the US dollar by up to 12.9%. Relative performance among the big funds was maintained only by funds focusing on equity investment in the regions of Central and Eastern Europe.

Chart 84 **Comparison of one-year returns on three biggest equity funds and the development of market indexes** **(in % per year)**



Source: NBS, AAMC.
Return on European equities is determined according to DJ Euro Stoxx 50 TR index and the return on American equity according to S&P 500 TR index.
Funds are weighted by amount of NAV.

Pension savings



5 Pension savings

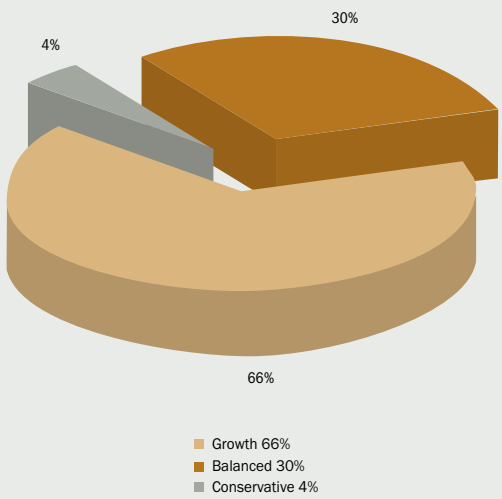
The year 2007 was, for the second pillar of pension savings, the first complete calendar year, in which the system was closed for voluntary joining and the new savers were joining it only on the basis of fixed rules related to age. The volume of assets in funds of pension fund management companies has almost doubled within a year. Also the third pillar of pension savings was growing dynamically from the point of view of increase in net asset value. In both pillars, within the monitored period, the structure of aggregate portfolio was changing. In the second pillar funds, the change was towards the slightly riskier assets, in the system of supplementary pension savings reversely. Compared to the previous year, the balanced and growth pension funds of pension fund management companies indicated a decrease in annual performance to the level 3.8%, or 3.6% and reached the level under the performance of conservative funds, with 4.1%[20] appreciations of assets for 2007.

Second pillar

The number of newly-registered savers in the second pillar pension savings increased by only 20 thousand in 2007 and reached the number of 1 558 650 as of December 31, 2007. Relatively slight accrual of savers in comparison to the previous years was related to the fact that the system was closed for voluntary joining during the entire year.

Net asset value (NAV) accumulated in funds in the pension savings second pillar reached, to the end of the year 2007, more than SKK 51 billion. Compared to the status of the previous year ultimo, it represents the accrual of 84%. Such significant percentage change is mainly a consequence of low basic value for the year 2006, which was a result of short period when the contributions of savers could have been accrued. Division of number of savers and relevant net asset value into one of three fund types, stipulated by an act, has changed only to a minimum degree year-on-year.

Chart 85 **Pension fund asstes by share of each fund type (in %)**



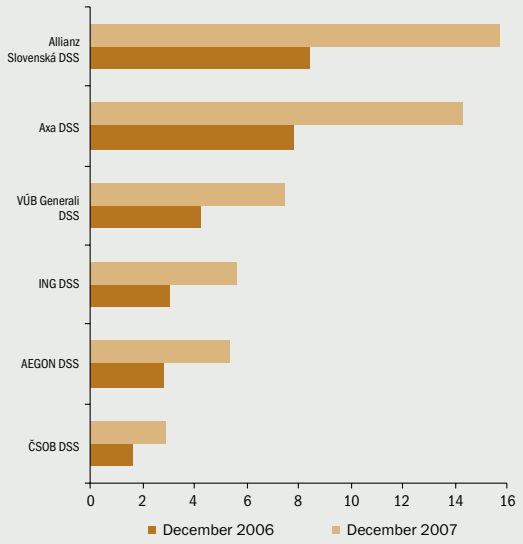
Source: NBS.

20 *Average annual return rate of pension funds was calculated as weighted average of percentage year-on-year changes of daily values of pension units in related pension funds. Year-on-year percentage change of daily values of pension units is calculated as of December 31, 2007 ($PMZDHDJ_{31.12.2007}$) as follows:*

$$PMZDHDJ_{31.12.2007} = \left(\frac{DJ_{31.12.2007}}{DJ_{29.12.2006}} - 1 \right) * 100\%$$

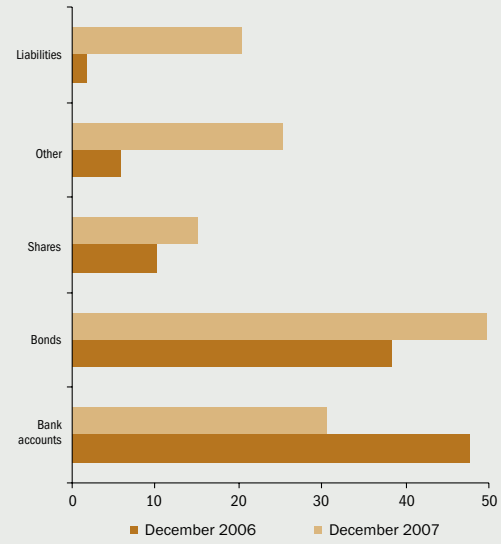
where DJ represents a value of pension unit for the corresponding day.
If the weighted average is stated, the weight was a share of net asset value (NAV) of the relevant fund in the sum of NAV funds of the same type. Stated return rate is nominal, which means that the inflation has not been deducted from it. When determining the return rate of various investment types, the nominal return rate is usually stated, whereas the standard legal methodology has been used for this calculation. Stated return rate is however not the return of the saver in their own personal pension account, which is individual for each person. Input data were the values of pension units of individual pension funds, which were submitted to the National Bank of Slovakia by the pension fund management companies for the day of December 29, 2006 (the last working day of 2006) and December 31, 2007, which are also mentioned on the website of the National Bank of Slovakia.

Chart 86 **Net asset value of pension funds for individual pension fund management companies (in SKK billion)**



Source: NBS.

Chart 87 **Share of individual types of investments in total volume of assets under management (in %)**



Source: NBS.

Despite a slight decrease of the share by a few tenths of a p. p, almost two thirds of all funds are still allocated in the growth funds. On the contrary, the share of balanced funds slightly increased to 30.4%. Conservative funds with 4.1% remained in a minor position. This typical classification reflects, in principal, the initial status of the system´s operation, when all the savers are in the initial phase of the saving cycle and they are expecting the highest appreciation of their contributions in the growth or balanced funds in the long-term perspective.

Concentration in the market of pension fund management companies is relatively high, since two biggest companies control up to 58% of the net asset value in the system. Market shares of individual pension fund management companies according to the volume of assets under administration remained unchanged in 2007.

The aggregate structure of portfolio in the second pillar changed significantly in 2007. The share of funds in pension funds which are deposited in current or term deposit accounts, which made up almost a half of the net value of assets at the end of 2006, decreased to 30.5% within a year. On the other hand, the share of bonds increased by 11 percentage points to 49.6% in December, and therefore the bonds became the aggregate in the portfolio with the highest volume. The percentage of assets held in equities increased from 10% to 15%. The last important part in the portfolio is represented by the FX contracts, which only have a minor impact on the net asset value and play a hedging role related to the foreign exchange risk. Majority of changes in the structure, which were described above, occurred already in the first half year of 2007. Share of equities, as at 30. 6. 2007, reached 18.3% and in the second half year decreased slightly. Such situation could have likely been related to the increasing concerns of pension fund management companies about the development in the stock markets due to the mortgage crisis in the USA, which started to manifest itself more significantly in August 2007. In any case, it might be stated that the aggregate structure of the pension funds' portfolio has slightly moved towards the potentially more profitable, but also more volatile assets.

Structure of the portfolio in growth and balanced funds is very similar to aggregate structure of the portfolio. Balanced funds have, in comparison with total portfolio, a higher share of bank deposits and bonds by 1-2 percentage points, and lower equity element by approximately 1.5 percentage points. The statement for growth funds is true reversely. The share of equities in any of these funds did not exceed 27%, which is; in case of both types of funds, deep below the maximum accepted limit (50% for balanced funds, 80% for growth funds). Conservative funds consist solely of deposits and bonds with approximately one to one rate.

Similarity of balanced and growth funds does not stop at the level of main aggregates. High degree of correlation between these two types of funds is also related to proportional representation and share of individual purchased securities (stocks and bonds). Correlation[21] of bonds reaches the level of 94%, the

level of stocks is a little lower – 90%. Of all the facts already mentioned, it can be definitely stated, that the pension fund management companies are yet using the almost identical investment strategies for balanced and growth funds.

The currency structure of held tools has also been gradually changing. The share of bonds denominated in a foreign currency increased to 9% for 2007. Approximately 10% share of total volume of funds in accounts in the banks was allocated in foreign exchange accounts as of December 31, 2007. However, at the end of the previous year, their proportional representation was, in principle, at zero level. In both cases, it mainly concerns the assets in Euros. Risks occurring from possible non-beneficial movements of the exchange rates in the funds are hedged by the above-mentioned forward contracts.

The biggest part of bonds in funds in the second pillar is made up of bank bonds, with 31%. A little smaller part is made up of mortgage bonds (28%) and government bonds (27%). The overall structure also includes the corporate bonds with 14%. Further, as at December 2007, the following could be confirmed: from conservative funds, through balanced funds and to growth funds, the share of state, bank and corporate bonds was increasing and the relative share of mortgage bonds was decreasing.

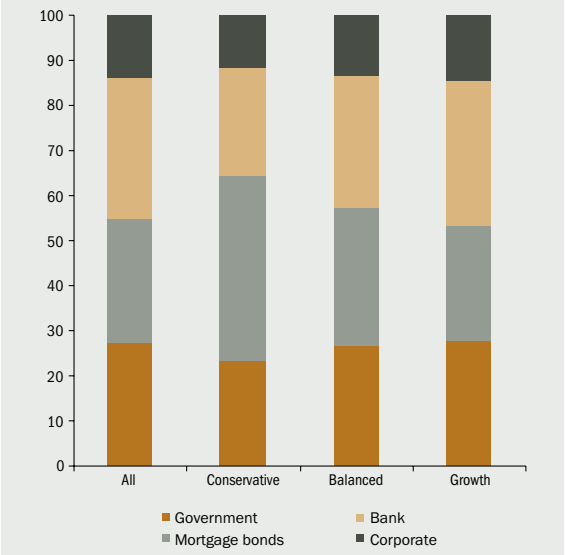
Debt securities with floating coupon have a dominant position (around 70%) in the bond portfolio from the point of view of coupon option. Around 20% of bonds have a fixed coupon level. The remaining part is made up of zero coupon bonds. The structure, from this aspect, is very similar for all three types of funds. The dominance of bonds with floating coupon contributes to low average duration of individual funds. In fifteen funds, the duration was under the level 2 during the entire year 2007. Only the funds under the management of one pension fund management company, where the duration exceeded the level 4 in some period, were an exception to the rule.

Table 9 **Annual return rate of pension funds as of December 31, 2007 (in %)**

Fund types	Arithmetical average	Weighted average
Conservative funds	4.0	4.1
Balanced funds	3.6	3.8
Growth funds	3.5	3.6

Source: NBS.
Detailed methodology to the table is in the footnote on page 75.

Chart 88 **Structure of bond portfolio in individual types of funds**



Source: NBS.

It means that the exposure of bond portfolios against individual risks (credit, interest and foreign exchange) is relatively at the low level.

The course of annual performance of funds during 2007 was influenced by two factors in particular. The first was the above-described change in the structure of fund investments in the first half year of 2007, related to the stock market growth, which brought the increase of performance in all funds. In particular, the improvement was observed in balanced and growth funds, in which the performance was between 5% – 8% to June 30, 2007. In the second half year, the negative development in the markets, related to the mortgage crisis in the USA, decreased the performance in these two types of funds, in majority of pension fund management companies, below the level from the end of 2006.

To the last day of December 2007, the performance of balanced funds was in the range between 2% to 4.3% and the performance of growth funds, between 2.1% to 4.3%. The performance of conservative funds was between 3.7% to 4.5%, while in all six funds, a better value was reached than at the end of 2006.

When assessing the current performance, one must remember that the performance itself does not show the total appreciation of assets of the saver. For the saver, the average appreciation for the entire period

21 *In this case, the term correlation means the value of correlation coefficient between the percentage representations of individual issues in the aggregate portfolio of all balanced funds and growth funds.*

of their participation in the second pillar to the day of going in retirement is important. Therefore, the performance of funds must be assessed in the long-term horizon. Due to this, when investing, funds opt for long-term strategies, which cannot be significantly influenced by any short-term fluctuations in the market.

The year 2007 was, for the pension fund management companies, a little better than the previous one, mainly concerning their operations. Except one, all the other companies reduced their loss significantly. Two companies completed their accounting year with a profit. These are the first positive results since the beginning of the system operation. The positive movement in the operations is related mainly to cost-cutting for commissions and advertising.

Box 3 Factors influencing the development of profitability of pension funds

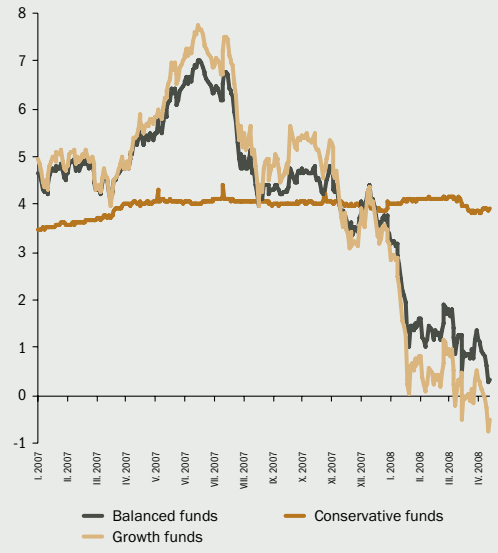
In this part, we shall analyze the facts which had the most significant influence on return rate of the pension funds in 2007. Course of annual return rate is shown in Chart 89. The return rate of conservative funds was, since April, at the level of approximately 4%. Return rate of these funds was not significantly influenced by any turbulence in the foreign financial markets in the second half year of 2007. The reason for stable return rate of these funds is mainly the stable level of domestic interest rates since April 2007. On the other hand, the return rate of balanced and growth funds was negatively influenced by foreign development in the second half year of 2007 and that mainly by development in the stock markets. This may confirm the fact that the daily changes of return rate of balanced and growth funds were, to a high degree, influenced by development in the European stock market (Chart 90). The scope of changes in funds is lower, compared to changes in the stock markets, since the stocks make up only one fifth of the total portfolio. Correlation of daily changes of funds return rate and stocks index Euro Stoxx 50 was 60% to 70% in individual funds.

The influence of other factors was examined via linear regression of daily changes of pension unit value in pension funds on daily changes of market factors (stocks indices S&P 500 and Euro Stoxx 50, 3-month and 5-month domestic discount rate and exchange rates SKK/EUR and SKK/USD)[22]. Factors, which were indicated as significant for pension funds, are shown in the Table 10. Results prove that changes of pension unit value

Chart 89 **Comparison of annual return rate of individual types of funds**

Source: NBS.
Median of annual return rate of funds of the relevant type is shown on the vertical axis.

Chart 90 **Comparison of return rate of pension funds and stocks index Euro Stoxx 50**



Source: NBS.
The vertical axis shows the course of return rate from 1. January 2007.

22 *Except that, one or two autocorrelation elements were added into equations, due to the presence of autocorrelation in residuals of equations, without including these elements. When testing the importance of individual factors, White´s estimates of covariant matrix of parameters were used in order to consider the possible presence of heteroscedasticity. In pension funds, stock indices and exchange rates, the relative changes of value were calculated, absolute changes in interest rates.*

Table 10 **Influence of daily changes of market factors on daily changes of pension funds return rate** **(in %)**

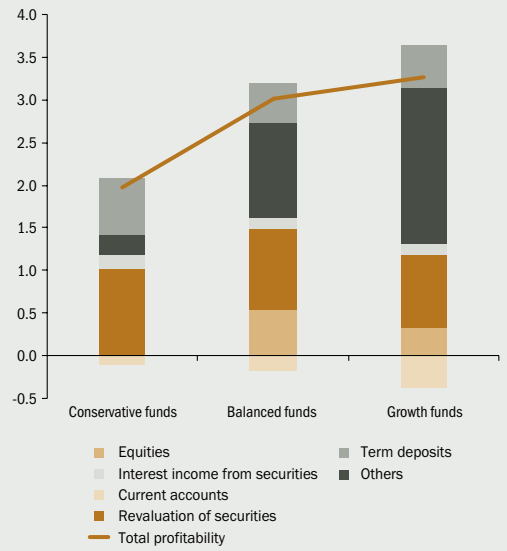
Fund	Constant	S&P 500	Euro Stoxx	5-year discount rate	Modified R^2
Balanced funds	0,016	4,3	8,4	1,3	65
Growth funds	0,010	5,4	10,6	1,8	66

Source: NBS, own calculations.
The chart states the values of coefficients of linear regression of daily changes of pension fund return rate on daily changes of market factors, or value of modified R^2 for these regressions.
All coefficients mentioned in the chart are different from zero at the confidence level of 5%.

in individual funds could be explained, in a high degree, by changes in stock indices, or by changes in the long-term discount rate. Neither changes of exchange rates nor the short-term discount rate can significantly influence the changes of funds return rate. It means that funds are not exposed to exchange rates movements, however, the changes in the stock markets, in particular in the European stock market, may have a relatively significant influence on them. The influence of stock markets is slightly higher in the growth funds, since the share of the portfolio equity element in these funds is, in comparison to balanced funds, higher. Coefficient values show that the change of value of e.g. stock index Euro Stoxx 50 by 1% would cause a change of pension unit value in balanced and growth funds by approximately 0.08%, or 0.11%.

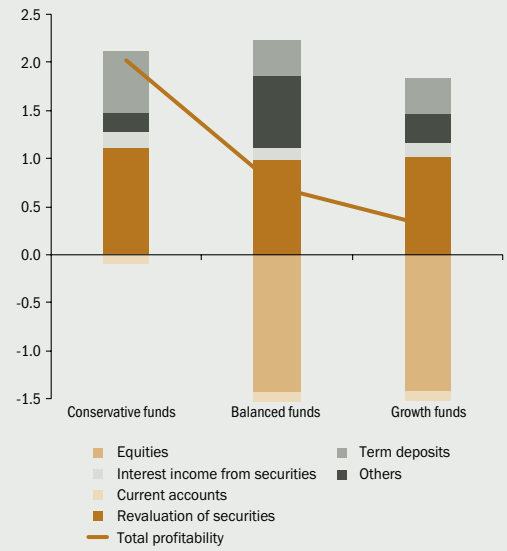
While the structure of conservative fund profits was approximately the same during the first half year of 2007 and the second half year of 2007, there was a relatively significant difference in this structure in balanced and growth funds between the two individual half years (compare Chart 91 and Chart 92). Stock investments contributed to the performance growth during the first half year of 2007, and that even after the exchange rate influence is taken into account. (This return rate was further increased by return rate from revaluation of currency forwards that were used by funds to secure the foreign exchange positions from the stock investments). On the other hand, during the second half year of 2007, the stock investments contributed to return rate fall.

Chart 91 **Structure of pension funds return rate in the first half year of 2007**



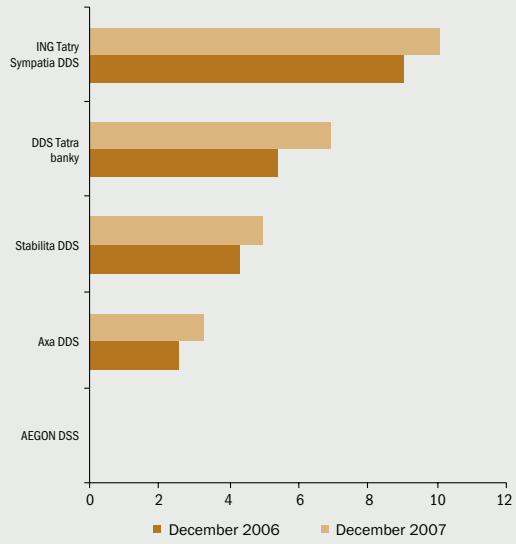
Source: NBS, BLOOMBERG, REUTERS, own calculations.
The return rate for the period from 1. January 2007 to 30. June 2007 is shown on the vertical axis. Other return rates include mainly the return rates of currency derivatives, which hedge the foreign exchange positions resulting from investments in foreign equities.

Chart 92 **Structure of pension funds return rate in the second half year of 2007**



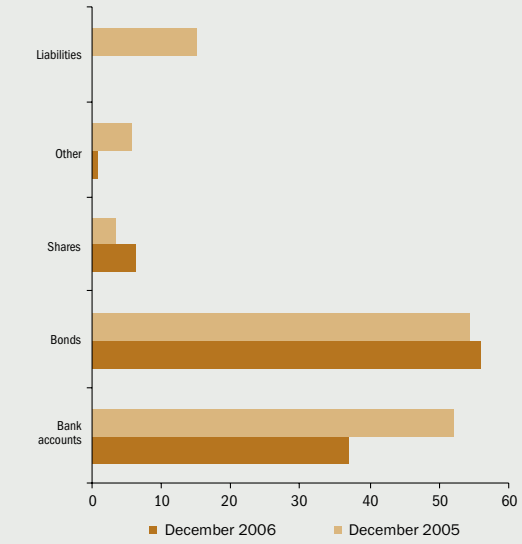
Source: NBS, BLOOMBERG, REUTERS, own calculations.
The return rate for the period from 1. July 2007 to 31. December 2007 is shown on the vertical axis. Other return rates include mainly the return rates of currency derivates, which secure the foreign exchange positions resulting from investments in foreign equities.

Chart 93 **Net asset value of pension funds for individual pension fund management companies (in SKK billion)**



Source: NBS.

Chart 94 **Share of individual types of investments in total volume of assets under management (in %)**



Source: NBS.

III. Pillar

In total, at the end of December 2007, 792- thousand savers were saving for their pension in the pension scheme of five companies in the third voluntary pillar, of these 763-thousand in the contribution funds.

Net asset value for all these funds increased by 19% in 2007 and at the end of the year, it reached the level of SKK 25.3 billion.[23] Majority of this increase and the volume itself (97%) is related to contribution funds.

The portfolio structure of the third pillar was considerably conservative at the end of 2007, since almost entire accrued funds were invested in banks in the form of accounts or bonds. The volume of funds in accounts and bonds in banks, at the end of December 2007, was in both cases approximately SKK 13.5. billion. Only a 3% of net asset value was invested in shares. As in the second pillar, there was a structural change of assets structure in the funds of pension fund management companies during 2007. This change was, in principle, of opposite type as in the second pillar. It means that from the point of view of volume, the relative meaning of funds held in accounts in banks was increasing and the share of bonds decreased. During 2007, the volume of bonds increased by only SKK 4 billion, compared to the increase of funds volume in current and time deposit accounts in banks by almost SKK 7 billion. The volume of assets in equities was decreasing year-on-year not only in relative (decrease of share by 3 p.p.), but also in absolute numbers (fall in equity investments from SKK 1 060 million to SKK 800 million). It is necessary to mention that decrease in equity element cannot be considered as a sector trend, since there is only one fund behind its decrease. In this fund, the entire equity portfolio, with the volume of almost SKK 700 million, was sold off in October and November 2007. In other five funds (all contribution), which had equities and mutual fund certificates in the portfolio, their volume was stagnating or even increasing in the course of the year.

Annual performance of contribution funds in the third pillar, reached the level from 0.1% to 5.4%[24] to 31.12.2007. Weighted average of net asset value funds was however at the relatively low level 1.0%, which, with regard to the rate of year-on-year inflation 2.5%, means that the savings of citizens partially depreciated. Similar statement is also valid for the payout funds, since these earned nominally from 1.4% to 2.3% in 2007. The most likely reason for the lower performance of funds in the third pillar (minimally compared to the second pillar) is the fee policy of pension fund management companies. The average level

23 *Net asset value for December 2006, incoming in the calculation of year-on-year increase, also includes the net asset value of former supplementary pension insurance company Stabilita, even though this value is only approximate, since no exact data are available.*

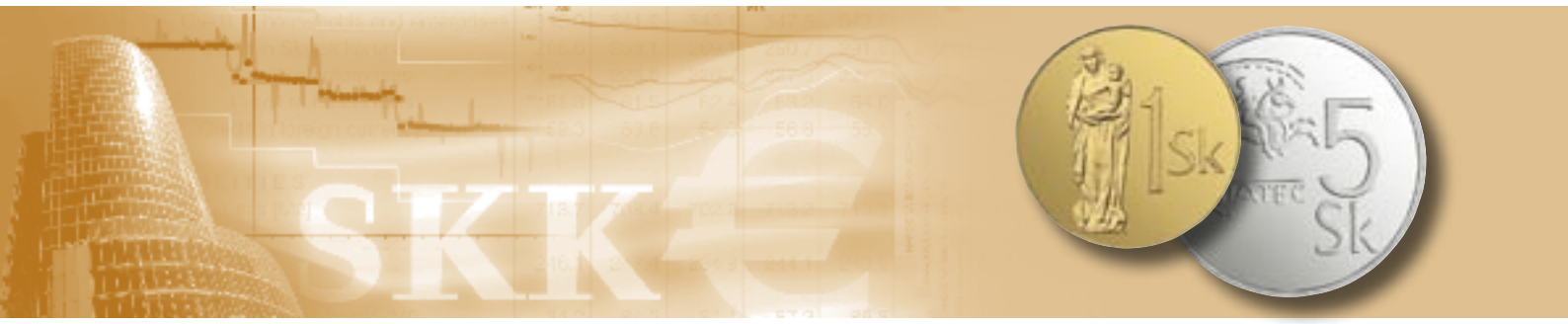
24 *In this case, it concerns the annual performances provided by the pension fund management companies, while the methods used for their calculations are different in each individual company.*

of the payments reached up to 2,4%[25] of net asset value in the fund at the end of 2007. In three funds, this rate was determined at the highest limit level, permitted by an Act, which is 3%. The average level of payments for the funds management, weighted by funds' net asset value, reaches the level of 2.6%, which means that the bigger funds have relatively higher fees for their management. This implies that the resulting annual performance of the fund for a saver was, on average, lower by 2.6 p. p., in comparison with the situation, if the payments for the management were zero. Moreover, in the third pillar, other costs such as taxes, payments to depository, fees for compensations of transactions from securities and other may lower the participants' performance. These costs are, different to the second pillar where they are covered by the pension fund management company itself, paid from the fund's assets.

Three out of five pension fund management companies completed their operations with positive results for 2007.

25 Simple arithmetic average for all funds.

Risks
in the financial sector



6 Risks in the financial sector

Development of risks in the financial sector in 2007 was influenced by a few trends, or events. The riskiness of the financial sector was partially influenced by the negative development in the world financial markets. Direct exposure of the financial sector by means of the ownership of securities against US subprime loans or generally structured products was only minimal. The question remains about the credit quality, liquidity and pricing of the financial instruments.

The overall growth of volatility and uncertainty on capital markets increased an equity risk. The risk went up especially in some funds of pension management companies, supplementary pension companies and mutual funds. The overall decrease of liquidity that accompanies the current development on financial markets did not significantly touch the domestic financial sector. Banking sector that is generally the most sensitive sector to the state of liquidity, showed a sufficient amount of primary sources.

In the domestic sector a high increase of loans to households continued in 2007, whereby the exposure of banks against the credit risk of these loans went up. The credit risk is given by the possible inability of households to pay back the credits to banks. This inability is most frequently related to excessive debt by repayment in proportion to their income, or by the sensitivity of households to various risk factors.

Indebtedness of the household sector on the macro level achieved a low level in 2007. It is related especially to the fact that a relatively small number of households have loans from banks. It is proved by a regional concentration, as the biggest proportion of loans were granted in Bratislava region. On the other hand, households that already have a credit get a higher degree of debt. In 2007 it was mainly the growth of real estates prices that influenced the level of the debt burden. Households were forced to finance the purchase of real estates with a higher credit volume, which manifested itself in higher installments. Mitigating factors were longer maturity of loans and lower interest rates. Generally, the debt burden of households rose, whereby from the view of credit risk, the household's sensitivity especially to the decrease of income went up.

Banks, as a result of the rise in the prices of real estates on one hand and an effort to keep the market share, acceded to ease credit standards. In 2007 the volume of loans with LTV over 100% increased significantly in several banks. The risk of loans to households thus becomes more sensitive to the changes in the prices of real estates. By the increase of LTV, a moral hazard rises, as well, as banks acquire clients that participate in financing the investment to a smaller degree. From the view of the credit risk of households, in 2007 banks showed a high proportion of new housing loans with a short-term fixation of interest rates, as well.

Banks achieved a high increase of loans also in relation to a corporate sector. There was a significant increase especially in the exposure against the real estates sector. In case of some banks these loans formed a significant proportion of total loans to corporates. The riskiness of commercial real estates loans is directly related to the development of prices for real estates rental as well as to their occupation. In the second half of 2007 rental prices went slightly down. The occupation depends on the economic cycle phase to a high degree. In the second half of the year, changes in the approach of banks to these loans were recorded. Banks, also as a result of current crisis on financial markets, rather chose a more careful approach and made standards for these credits stricter. As for corporates, high sensitivity to the change of the exchange rate remains, as a big part of credits was denominated in foreign currencies.

The banking sector as a whole during the year 2007 wasn't exposed to a more significant foreign exchange risk. Banks closed an open foreign exchange position in a on balance sheet, formed especially by foreign exchange deposits of foreign banks, by derivatives. Generally, the total foreign exchange position was thus practically closed. That's valid not only for the aggregate values of foreign exchange position for the whole banking sector, but in most banks the total open foreign exchange position during the year 2007 did not exceed 3% of the balance sheet amount either. In most banks the VaR to the end of none of the months during the year 2007 exceeded 2% of their own funds.

In 2007 the interest rate risk of the banking sector did not change significantly. Most banks have their positions almost closed in the trading book, with the exception of the positions in the shortest maturity zones. However, a low open position in the trading book relates in the first place with relatively low volumes of the trading book in comparison with a banking book. Banks showed open positions in the banking book, especially in the zones with a longer maturity and they were formed almost exclusively by positions in securities. At the end of the year 2007 the VaR in the banking sector ranged at the level of 0.4 p. b. from the median of the banking sector's capital adequacy.

From the view of liquidity, the situation in 2007 was characterized by a high proportion of funds sterilized in NBS, as well as other liquid assets. From a short-term view of the liquidity, more significant changes did not occur in the banking sector as a whole. The proportion of liquid assets to liabilities within 7 days and 3 months did not change significantly. In the second half of the year some banks recorded partial deterioration. From a long-term view of the liquidity, it was valid in 2007, as well that in most banks the credit activities were financed from the clients' deposits or issuance of long-term securities and not from short-term funds from the inter-bank market.

The most significant kind of risks that insurance companies are exposed to, are insured risks. Apart from that, they are also exposed to market risks that can cause unexpected decrease of the value of the assets covering technical reserves. The most significant market risk is an interest rate risk. The reason is a relatively big proportion of debt securities on the assets covering the technical reserves of insurance companies and their high duration. At the end of the year 2007 the interest rate risk's VaR ranged at the level 2.3% of assets covering the reserves in life insurance and 0.7% in non-life insurance.

The insurance market as a whole was exposed to a relatively low equity risk. Similarly, also the direct foreign exchange risk of the assets covering the technical provisions was in 2007 in most insurance companies negligible.

The pension management companies' funds are exposed mainly to market risks. Conservative funds are exposed to an interest rate risk only, as they do not have any open stock or foreign exchange positions. Even this risk is relatively low, as the funds hold mostly bonds with a relatively short duration. In regard to similar structure of the assets of growth and balanced funds, there usually is not a big difference in their exposure to market risks within individual pension management companies. The balanced and growth funds are exposed especially to a equity risk. At the end of the first half year 2007 the riskiness of stock portfolios increased because of the volatility growth on stock markets. In comparison with this risk, the foreign exchange and interest rate risk is relatively insignificant.

Like the pension management companies' funds, also the supplementary pension companies' funds are exposed especially to market risks. Most contribution funds are exposed to stock and interest rate rate risks, as well, although in a different rate. The funds are exposed to a foreign exchange risk especially as a result of an unsecured long position arisen from investments in securities denominated in foreign currencies. Within SPC funds, growth contribution funds investing in a larger extent in stocks are the riskiest.

Mutual funds are exposed to especially foreign exchange and equity risk. The exposure to an interest rate risk is relatively low. The foreign exchange risk presents a relatively significant risk for mutual funds. The reason is that several mutual funds have shares and debt securities denominated in foreign currencies in their funds. During the second half of 2007, the equity risk in mutual funds went up due to the rising volatility of stock markets. Following the development in 2007, it can be predicted that with the probability of 99%, the value of the mutual funds should not decrease by more than 10%, which is a relatively high value.

Banks

Credit risk of households

Household indebtedness

A significant credit activity of banks in 2007 contributed to the growth of the houdehold indebtedness. The proportion of loans that banks gave to households to GDP achieved the level of almost 16% at the end of 2007. In comparison with other EU countries, this number is still relatively low.

Another macro indicator sounds relatively favorable in comparison with other countries[26] – the loan instalments[27] to disposable income. In spite of the continuing growth of this indicator, in December 2007 its value reached the level of 5.3%[28].

Debt grew also in proportion to financial assets of households that can also be understood on an aggregated level as a certain rescue cushion in case of the loss of income. In 2006 this proportion was on the level of 63%, whereas the year before the proportion was 40% only.

The structure of financial assets changed, as well, as the proportion of more liquid assets was gradually decreasing (cash, deposits in banks) and the proportion of less liquid assets was increasing (shares funds, life insurance, stocks).

An important perspective at evaluating the indebtedness of households is also so-called micro perspective[29]. Even though this data is relatively hardly accessible and in some cases its quality is

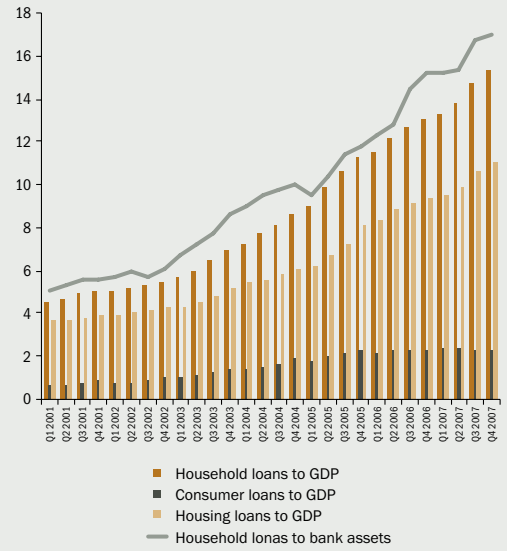
26 *The selected countries data for the year 2005 – UK 11%, France 31%, Hungary 9%, Portuguese 5%, Germany 4%.*

27 *Loan instalments include the payments of bank loans only. The proportion of bank loans in the total liabilities of households was approximately 65% in 2006.*

28 *When interpreting this indicator it needs to be taken into account that in the numerator there are credit instalments of households that have credits only, whereas in the denominator there is disposable income of all households.*

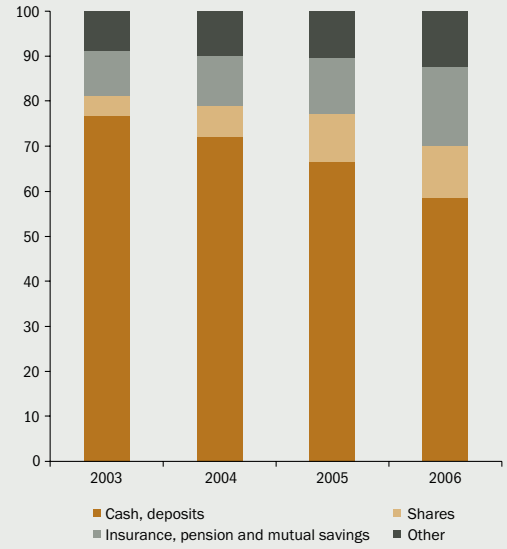
29 *Data drawn from the findings of EU SILC ŠU SR.*

Chart 95 **Households loans to GDP and banks' assets** **(in %)**



Source: NBS, Statistical Office of SR.
The percentage represents the proportion of household credits to GDP in common prices.

Chart 96 **Structure of financial assets of households** **(in %)**



Source: NBS, Statistical Office of SR.

questionable, it offers us a view on the indebtedness of individual households. The last available data from the year 2006 mention relatively high indebtedness of individual households. After deducting common expenses from the disposable income, loan instalments formed approximately 24% (median) of the remaining income. On year-to-year basis this proportion rose by 3 p. b. In the most encumbered households (the third quantile of the distribution) the indicator reached the value of 41%. The number of households with payments higher than their disposable income reduced by their common expenses was also relatively high. According to the survey data, in 2006 it represented 7.3% of the total number of households. These households were granted 8.1% of the total volume of the credit balance.

Table 11 **Share of defaulted loans to the total household loans** **(in %)**

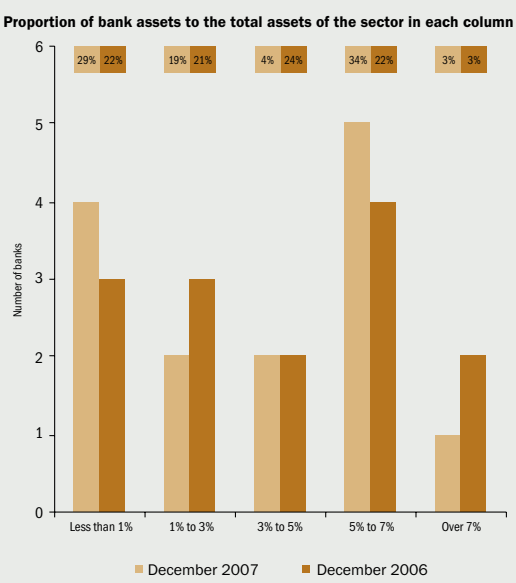
	XII. 2007	XII. 2006
Household loans	3.5	3,1
Mortgage loans	1,4	1,3
Building loans	1,5	1,6
Intermediary loans	3,8	4,3
Consumer loans	8,3	6,0
Credit cards	6,4	1,9
Other housing loans	2,5	1,8

Source: NBS.

Quality of loans to households

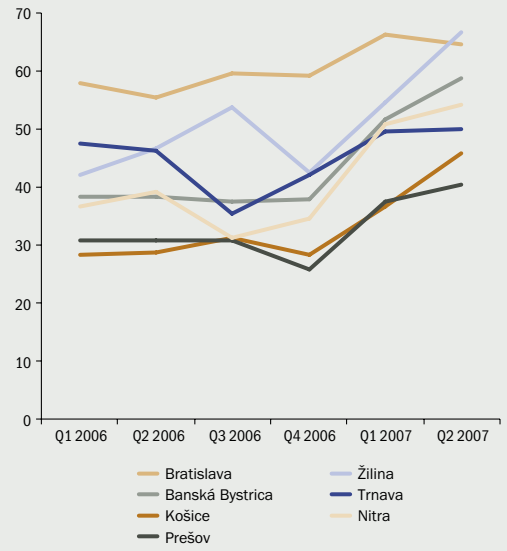
The quality of the portfolio of household loans, measured by the proportion of defaulted loans to the total loans, did not significantly change in the banking sector in 2007. The proportion of defaulted loans rose only slightly from 3.1% to 3.5%. However, this proportion went down in several banks, especially in those that achieved the highest values in 2006.

Chart 97 **Distribution of defaulted loans to total loans to households** **(in %)**



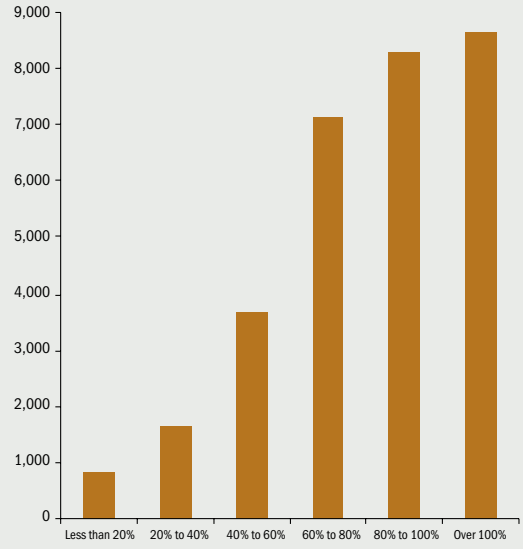
Source: NBS, Statistical Office of SR.

Chart 98 **Housing loans payments to the gross income of households**



Source: Price map of real estates, Statistical office, own calculations.
Debt is calculated for purchase of an average 3-room apartment financed by a credit for 20 years with 80% LTV and an average interest rate.

Chart 99 **Proportion of the volume of granted real estates credits in the second half of 2007 to the value of impawn real estates**



Source: NBS.

It became a tradition already that consumer loans show the worst quality. The proportion of defaulted loans in the sector went up from 6% to 8,3%.

Within building saving, intermediary loans show the biggest proportion of defaulted loans. In all three building societies the quality of the portfolio of intermediary loans improved on year-to-year basis.

Housing loans, whether mortgage loans, other housing laons or building loans show a low proportion of defaulted loans.

Risk of household loans

When evaluating the riskiness of loans from the banks' perspective, several factors need to be taken into account. It is especially the level of indebtedness of households and level of credit standards in banks. In a certain sense the current quality, measured by the proportion of defaulted loans, is also an indicator of riskiness. However, it is a so-called backward looking indicator that only partially indicates what the risk of the credits portfolio is.

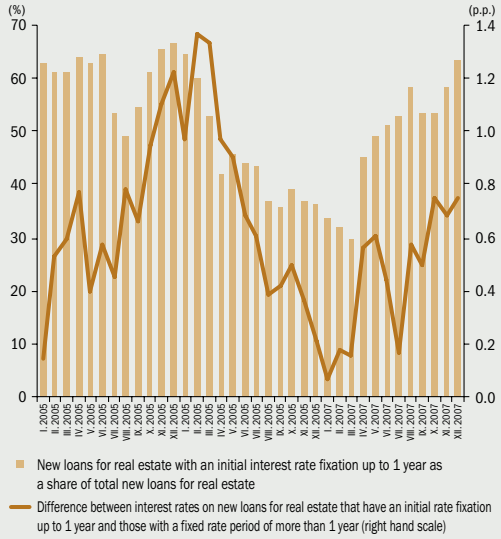
In the previous part of the text a level of indebtedness was evaluated. Whereas at the evaluation of macroeconomic data the indebtedness is relatively low, the indebtedness of households with loans achieves relatively high values[30]. This unbalance is caused by a regional concentration of the granted loans, whereas most loans were granted in Bratislava region. This is also a region where households are encumbered with loanspayments to the highest degree.

The growth of real estates prices and a related bigger volume of loans that households borrow contribute significantly to the growth of the indebtedness of the households by loan payments. Especially since the beginning of 2007 the growth of the real estates prices has increased the debt burden of households by loan instalments[31]. Significant increase of the debt burden in 2007 is mainly in cities with the fastest growth of real estate prices. What is more important than the values of debt burden in chart is the trend that indicates higher debt burden of households as a result of the increase of the real estate prices.

30 *Imperfections of data gained in the survey are given in the Report on the results of the Slovak financial sector analysis – June 2006.*

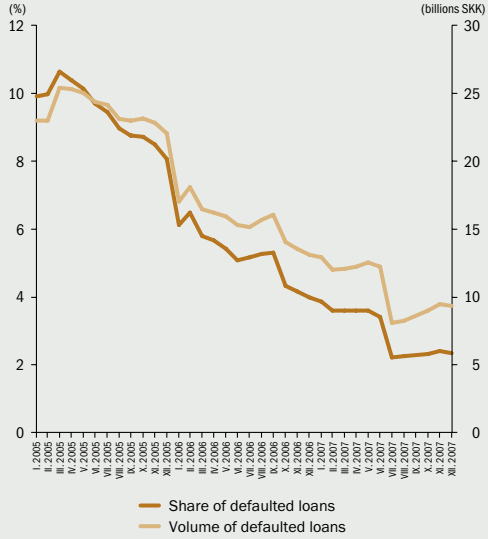
31 *Data on the real estates prices by cities and average gross monthly earnings were used to calculate the indebtedness of households by housing loan payments. We assumed that households had 3-room apartments. We used average prices of 3-room apartments in every regional capital for our calculations. We also assumed that a household in every town participates in financing the apartment by 20%, i.e. LTV is 80% and the bank granted a 20- year housing loans for an average interest rate for the given type of loan. The resulting indicator for every citi is a share of monthly payments of such a loan to average gross earnings in the given cities.*

Chart 100 **New loans granted to households by the period of interest rate fixation**



Source: NBS.
On the left vertical axis there is a proportion of new credits granted for real estates with the fixation within 1 year.

Chart 101 **Development of the volume and proportion of corporate defaulted loans**



Source: NBS.

To find out the level of credit standards in banks is very demanding, especially in consideration of the complexity of approaches and models that banks use when granting loans. According to the findings of the Lending survey (Questionnaire on the development of credit standards), the credit standards in banks have been moderated in the last years. The reason was most frequently the competition pressure, a positive macro economic development and a related growth of income and decrease of unemployment and lately also the development on the real estates market. The easing of credit standards most frequently manifested itself in moderating the limits on maturity and amount of lonas, in the decrease of margins and fees and in easing of requirements on collateral. Whereas the first mentioned forms of moderating standards did not increase the credit riskiness to a large degree, moderating requirements on collateral caused increase of the share of volume of the granted loans to the value of collateral (so-called LTV – Loan to Value). In other words, involvement of households in financing their real estate decreases. Banks thus gain clients that have smaller motives to pay back the loans, as they do not participate in the investment by their own means, or they participate only minimally.

The reason of such behavior of banks is the growth of real estates prices that pushed banks to participate in financing real estates in a larger degree. A certain spiral arises here, as well, when banks create space for further growth of real estates prices by moderating the standards oncollateral. Together with the effort of banks to gain a new market share, growing real estate prices will press on lowering standards.

During the year 2007, as well, it was proved that when choosing the length of interest rate fixation, households follow the current level of the interest rate and they take into account the risk of the interest rates growth to a minimum degree only. At the increase of the difference between long-term rates and rates with the fixation within 1 year in the second half of 2007, the proportion of loans with the fixation within 1 year went up, especially in case of new loans granted in the given period.

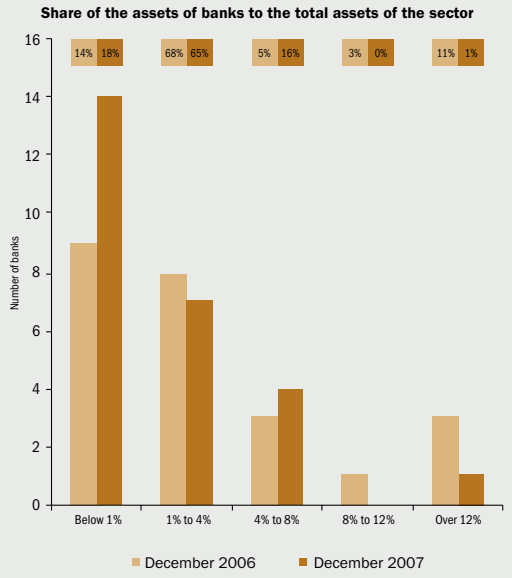
Corporate credit risk

As of December 31st 2007, corporate loans reached SKK 400.7 billion and inter-yearly they rose by 22%. During the year 2007 their proportion to the total credits to clients gradually decreased by 1 p. b. to 48%.

Quality of the corporate loans portfolio

In 2007 the trend of improving the quality of the corporate loans portfolio continued. In December 2007 the proportion of thecorporate defaulted loans to total loans reached 2.9%, inter-yearly it thus went down by 1.1 p. b. Since December 2006 the volume of the defaulted loans has fallen, as well, totally by

Chart 102 **Distribution of the quality of company portfolio in the banking sector**



Source: NBS.
On the horizontal axis there are a share of defaulted loans to the total corporate loans divided into 5 intervals.

1.7 billion SKK to the value of 11.5 billion SKK in December 2007.

Decrease of the proportion of defaulted loans is shown on Chart 102, as well. What is significant in comparison to December 2006, is especially the decrease of the proportion of defaulted loans in banks, in which this proportion exceeded 8%. A higher number of banks with the proportion of defaulted loans below 1% was caused by the establishment of new branches of foreign banks, as well, in which the volume of loans and defaulted loans is so far low.

A significant move in defaulted loans was caused by a bank that deducted defaulted loans to companies in the amount of SKK 1,9 billion in July 2007. In the rest of the banking sector, the defaulted loans went slightly up by SKK 235 million to SKK 9 billion. However, their proportion to the total corporate loans went down by 0.5 p. b. to 2.5%. Situation in individual banks was varied. In five banks the proportion and the volume of defaulted loans increased.

As many as 11 banks didnot record any defaulted corporate loans by the end of the year 2007. In other banks the fall of the proportion of defaulted loans caused the decrease of the defaulted loans volume as well as a fast growth of loans granted to companies.

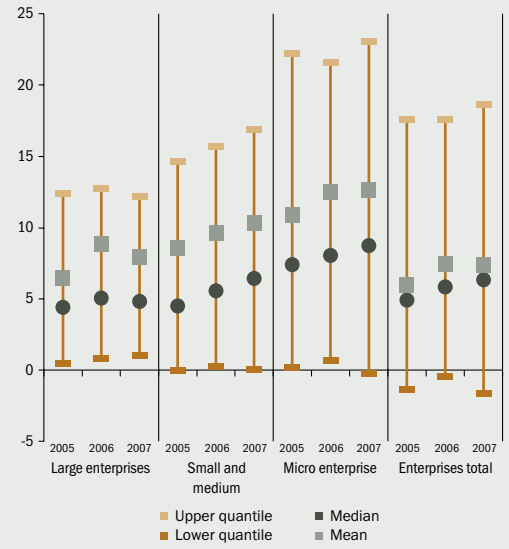
During the year 2007 the proportion of defaulted loans decreased in most branches, compared to the end of the year 2006. Increase was recorded only in the areas of real estates, land and pipe transport, motor vehicles and motorcycles and minor auxiliary activities in transport. In the first two branches with the highest proportion in corporate loans, during the year 2007 the proportion of defaulted loans in the

Table 12 **Quality of corporate loans by individual branches as of December 31st 2007** **(in %)**

Branch	Proportion of the branch in the total corporate loans		Proportion of defaulted loans in the loans of the branch	
	XII. 2007	XII. 2006	XII. 2007	XII. 2006
Industrial production	24.5	25.2	4.0	6.8
Wholesale and mediation of business except for motor vehicles	17.7	17.2	4.5	5.7
Activities in the area of real assets	13.5	10.2	1.5	1.4
Retail except for motor vehicles	7.6	7.5	2.0	2.3
Production and distribution of electricity, gas and water	6.2	7.5	0.1	0.8
Building industry	5.6	5.7	3.5	3.9
Land and pipe transport	4.6	6.3	0.7	0.5
Motor vehicles and motorcycles	2.7	2.2	3.2	3.1
Minor auxiliary activities in transport	2.6	3.0	1.6	0.4
Agriculture, hunting	2.3	2.8	7.2	8.6
Hotels and restaurants	1.6	1.6	5.8	8.1
Post and telecommunications	1.5	1.1	1.2	2.0
Other branches	8.7	9.6	2.0	3.6

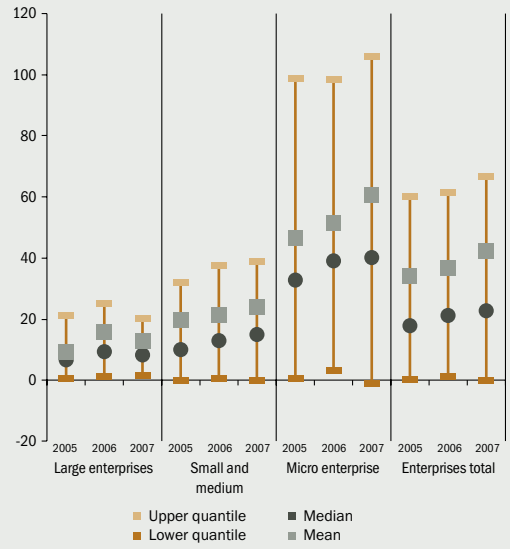
Source: NBS.
Other branches include: forestry, fishing, mineral resources mining., water transport, air transport, rental of machines and goods of personal consumption, computer activities and research and development and other business services.

Chart 103 **Profitability of corporate assets according to size**



Source: Statistical Office of SR, own calculations.
Extreme values of ROA were adjusted to the quantile value with the probability of 0.1%.

Chart 104 **Profitability of companies' own property by their sizes**



Source: Statistical office of SR, own calculations.
Extreme values of ROE were adapted to the quantile with the probability of 0.5%.

area of industrial production fell by 2,8 p. b. and in the area of wholesale and business mediation, except for motor vehicles, it fell by 1,3 p. b.

Banks do not have a high proportion of defaulted loans in branches that have a higher proportion in corporate loans in the given bank.

Financial situation of companies

Financial situation will be analyzed in terms of the size[32] of companies and comparisons of the years 2006 and 2007. We will focus predominantly on their profitability, capitalization and debt, efficiency and liquidity. All differences mentioned in this part are proved by the statistical tests in the significance level of 5%. Individual charts thus need to be interpreted cautiously, considering that the differences shown in the charts do not need to be statistically significant. In the analysis more important statistical results are mentioned in the text.

Profitability

Like in 2006, also in 2007 the median value of the profitability of assets was the same in big, small and medium-sized companies. However, it was lower than in micro companies. In an inter-yearly comparison no significant changes were recorded in the amount of the achieved ROA value in comparison with the year 2006. Concerning volatility, in comparison with 2006, there were changes in big, small and medium-sized companies, namely a decrease. An opposite change occurred also in micro companies, which recorded the increase of volatility. In comparison with 2005, there was a change in small and medium-sized companies only, namely the increase of median value of the profitability of assets. However, the volatility in the whole business sector was increased.

In case of profitability of their own property, the median value was the same in big, small and medium-sized companies, but lower than the profitability value of their own property of micro companies. In comparison with 2006 the profitability values of their own property did not significantly change. However, the volatility went up in the whole sector. Regarding the year 2005, the profitability values of their own property are on the same level.

In 2007 the median values of profitability in all three categories of companies were positive, as well. It means that there were more companies that showed profit at the end of the year than those that showed loss.

The profitability dispersion is a significant indicator of the riskiness in the sector. In 2007, as well, there is the biggest dispersion in the case of micro companies, and the smallest in the case of big companies. Thus an indirect relation between the size of a company and the dispersion of its profitability continues.

32 *Statistical sample of 6000 companies was divided into three groups by the volume of sales (t): big companies: t ≥ 1 billion Skk, small and medium-sized companies: 30 mil. Skk ≤ t < 1 billion Sk, micro companies: t < 30 mil. Skk.*

Table 13 **Profitability of companies by their sizes** **(in %)**

Companies	Median ROE		Average ROE		ROE[1)]		Median ROA		Average ROA		ROA[1)]	
	2006	2007	2006	2007	2006	2007	2006	2007	2006	2007	2006	2007
Big	9.50	8.30	15.66	12.86	0.27	0.22	5.50	4.81	8.9	7.89	0.14	0.13
SM[2)]	13.08	14.99	21.48	24.24	0.62	0.78	5.55	6.44	9.59	10.31	0.21	0.22
Micro	39.18	40.27	51.51	60.78	2.07	2.90	8.09	8.67	11.92	12.09	0.39	0.43
Together	21.14	22.74	36.54	42.51	1.54	2.15	5.86	6.35	7.43	7.34	0.40	0.45

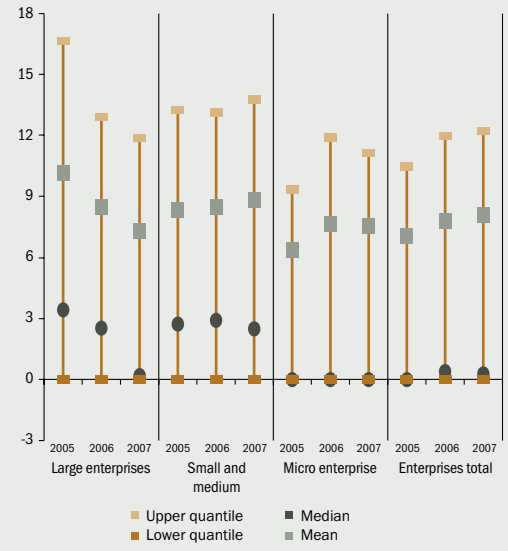
Source: Statistical office of SR, own calculations.
1) Standard deviation.
2) Small and medium companies.

Debt and capitalization

In capitalization (the proportion of companies' own property in the balance amount)[33] big companies reached the biggest values, small and medium-sized companies show smaller values of capitalization. As well as in 2006, micro companies show the smallest values. There weren't any significant changes in the capitalization of companies, nor in their dispersion in an inter-yearly comparison, concerning the year 2006. There wasn't any significant change in comparison with the year 2005, either.

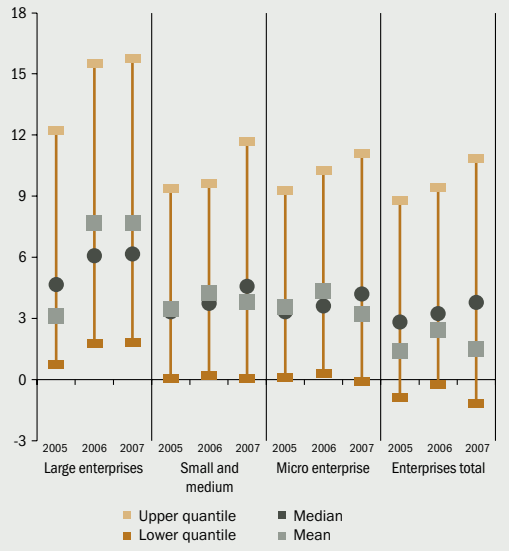
Small median values in all categories of companies were recorded, when analyzing their debt, measured by means of the proportion of credits to the companies' assets. It means that there is very little or minimal debt of companies by bank credits. In micro companies the median value is even at the level of 0%, which means that there are more companies on the market that have no credits at al than those that have some. Small and medium-sized companies have the biggest median value (an average value, as well) of credits in assets. It is caused by the fact that big companies have more possibilities of financing (bond issue, sources from their parent companies, etc.). The proportion of credits in assets did not change significantly during the year and remained on the same value as in years 2006 and 2005.

Chart 105 **Proportion of bank loans in assets**



Source: Statistical office of SR, own calculations.
The chart contains a complete statistical sample of companies, including those that have no bank credits. If a company recorded negative value of its own property, the proportion of bank credits in its own property was considered to be 150%. The values of balance sheet items per year were calculated as arithmetic average of the corresponding quarterly values.

Chart 106 **Proportion of profit in sales by companies' sizes – efficiency**



Source: Statistical office of SR, own calculations.
Data for the year 2007 was annualized from the data for the first 3 quarters of 2007. Extreme values were adapted to the quantile with the probability of 0.5%.

33 *Reference values of capitalization: proportion of companies' own sources in the balance amount more than 40% can be considered to be very good capitalization, the proportion value less than 10% is insufficient.*

Table 14 **Capitalization and debt of companies by their sizes** **(in %)**

Companies	VI/Assets median		VI/Assets average		VI/Assets st. deviation		Credits/Assets median		Credits/Assets average		Credits/Assets st. deviation	
	2006	2007	2006	2007	2006	2007	2006	2007	2006	2007	2006	2007
Big	63.74	66.54	63.00	63.16	0.21	0.21	2.52	0.19	8.49	7.32	0.12	0.12
SM	50.19	48.75	51.44	49.95	0.23	0.23	2.91	2.47	8.48	8.80	0.12	0.12
Micro	23.01	23.29	28.22	28.28	0.22	0.22	0	0	7.59	7.54	0.13	0.13
Total	32.70	32.54	35.70	35.90	0.27	0.27	0.39	0.27	7.81	8.09	0.12	0.13

Source: Statistical office of SR, own calculations.
The table contains a complete statistical sample of companies, including those that have no bank credits.
VI – companies' own property.

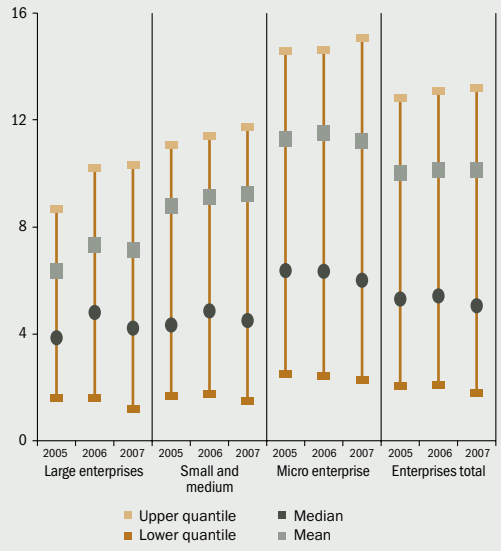
It can be stated that as in the previous year, smaller companies are characterized by smaller debt and lower capitalization, which could mean higher business obligations.

Efficiency

The efficiency of companies is measured as the proportion of a current period profit in current period sales. Micro companies that have the lowest median and average values show the lowest values of efficiency. On the contrary, the highest median value was recorded in big companies.

There weren't any significant changes in the inter-yearly comparison of 2005 and 2006. However, there were some significant changes when comparing 2006 and 2007. In the case of big companies, their median and average values did not change significantly. However, their dispersion changed, namely, it got bigger. Efficiency increased in small and medium-sized companies, which is proved by a higher value of median, as well. However, volatility increased, as well. The rise in volatility was recorded in micro companies, as well. The median value of efficiency did not change significantly during the year though.

Chart 107 **Proportion of financial assets in the total assets of companies by their sizes – liquidity**



Source: Statistical office of SR, own calculations.
The values of balance sheet items for the corresponding year were calculated as arithmetic average of the corresponding quarterly values.

Liquidity

The liquidity indicator (the proportion of financial assets in the total assets) in the sector remains. Big companies are characterized by a smaller degree of liquidity and a lower value of dispersion. On the contrary, micro companies show the highest values in the liquidity indicator as well as in its dispersion. It is because big companies can afford bigger flexibility in repaying their obligations.

From the time perspective, the liquidity development did not change significantly. There was a slight decrease in the median value in micro companies concerning the year 2005. A change in the case of micro companies occurred at the dispersion, as well, where the dispersion increase was recorded between 2005 and 2006. In 2007 a slight decrease followed. However, its value is higher than its value in 2005. In comparison with 2006, a small increase in volatility was recorded in small and medium-sized companies, as well.

Quality of credit portfolio in other sectors

Credits to financial institutions, apart from banks, public administration and non-profit organizations retained their high quality in 2007, as well. However, their proportion in total assets continues to have a descending trend.

In 2007 the proportion of defaulted loans decreased in credits to small businesses and non-residents to 5.6%, or rather to 1.5%.

Table 15 **Quality of credit portfolio in other sectors** **(in %)**

	Proportion of defaulted loans in the sector's credits		Proportion in credits to clients	
	XII. 2006	XII. 2007	I. 2006	XII. 2007
Credits to small businesses	6.5	5.6	2.3	2.2
Credits to non-profit organizations	0.3	0	0.4	0.5
Credits to financial institutions, apart from banks	0.1	0	9.5	8.1
Credits to public administration	0	0	2.8	2.8
Credits to nonresidents	4	1.5	2.7	3.8

Source: NBS.

The proportion of credits to non-residents in the total credits increased as per December 2007 compared to 2006; at the same time their quality got better. Almost all banks record very good quality of credits to non-residents. Improvement of the quality of credits to non-residents was caused by the decrease of the defaulted loans volume, as well as by the high increase of granted credits in several banks.

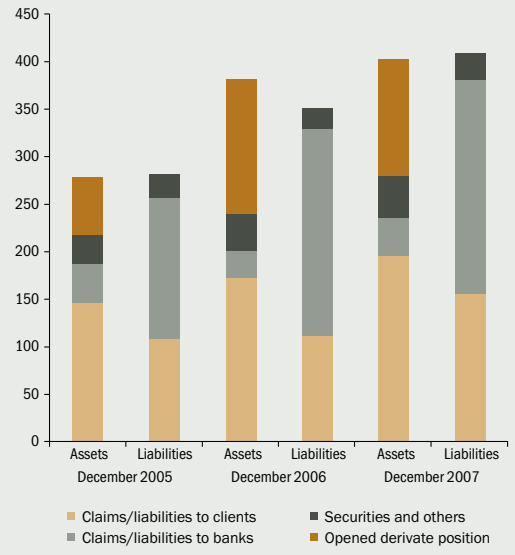
Foreign exchange risk

During the year 2007, the banking sector as a whole was not exposed to a significant foreign exchange risk. That is, almost all banks closed their generraly short foreign exchange position in the balance sheet by foreign exchange derivates in the off-balance sheet. The short open foreign exchange position in the balance sheet was caused mainly by a high volume of foreign currency deposits of foreign banks. The banks invested a big part of these deposits in a domestic currency into reverse repo transactions within the NBS. However, during the year 2007 the volume of foreign currency loans increased significantly, as well (by 34%). Especially foreign currency loans to corporates recorded a relatively high increase in terms of volume (annual increase by SKK 27 billion). However, these were almost exclusively loans denominated in EUR. At the same time the volume of foreign currency deposits increased only slightly.

Arisen foreign exchange balance sheet position was at the level of 8% of the balance sheet amount.

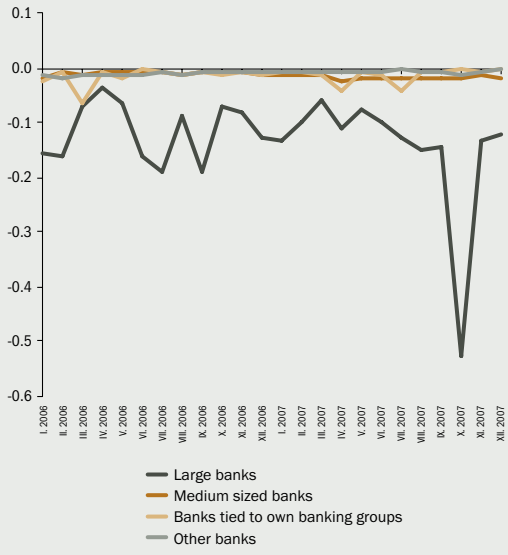
Banks closed open foreign exchange positions in balance sheets by derivate transactions. Generally, the

Chart 108 **Structure of assets and liabilities in a foreign currency** **(in billion SKK)**



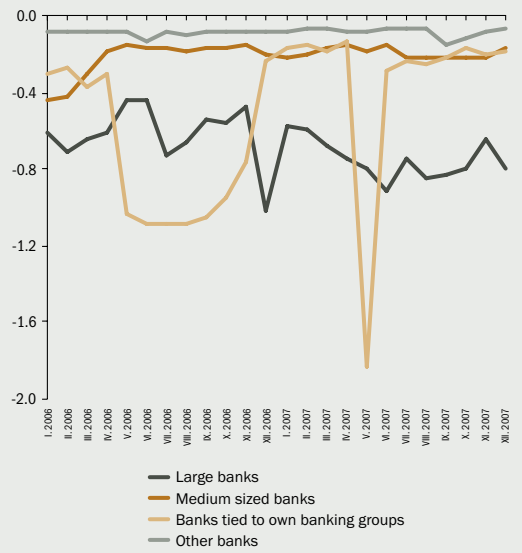
Source: NBS.
Liabilities to banks include also liabilities to the Ministry of Finance of SR deposited in banks by means of DLMA, as they have a similar character as the deposits of banks.

Chart 109 **Development of a 10-day VaR (99%) in individual bank groups** **(in billion SKK)**



Source: NBS, own calculations.
The values of VaR for branches of foreign banks are not shown in the chart. Other banks include also building societies.

Chart 110 **Time development of VaR when taking into consideration credit commitmens and guarantees (in billion SKK)**



Source: NBS, own calculations.
The values of VaR for branches of foreign banks are not shown in the chart. Other banks include also building societies.

foreign exchange position was thus practically closed. That is valid not only for the aggregated value of the foreign exchange position for the whole banking sector. During the year 2007 the open foreign exchange position in most banks did not exceed three per cent of the balance sheet amount. The exceptions were only some branches of foreign banks, where however, the open position can be closed at the level of a banking group.

More detailed view of the foreign exchange risk that individual banks are exposed to, can be obtained by means of VaR *(Value-at-Risk)*. This value indicated a loss that should not be exceeded, with 99% probability. At the same time it is assumed that the distribution of future changes in exchange rates can be simulated by distribution of the changes during the previous year (250 working days), and that portfolio remains invariable during 10 days[34]. The calculated values of VaR are shown in Chart 109. In most banks the value of VaR did not exceed 2% of their own funds by the end of neither month of 2007. However, it needs to be noted that this analysis does not take into account the time concordance of individual tools closing foreign exchange positions and thus it does not take into account the risk of various movements of domestic and foreign interest rate either.

Calculation of a foreign exchange position includes positions from currency options, as well. It is assumed that every option will be executed. However, the validity of this assumption cannot be verified because of the lack of detailed data on individual option transactions. On the other hand, during the first half of 2007 foreign exchange positions resulting from option foundation tools were practically closed in most banks.

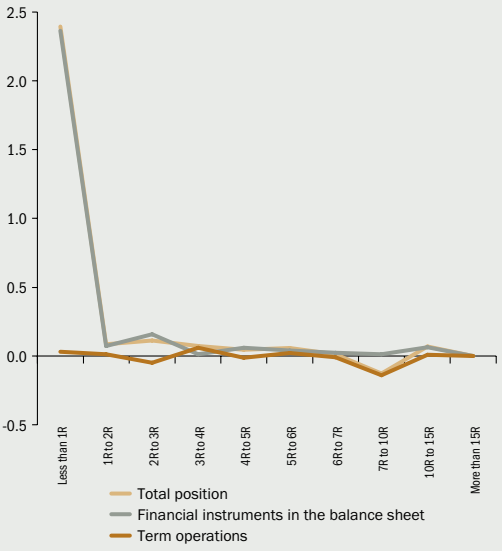
The analysis shown before left out three types of tools that banks have in their off-balance sheets: commitments to extend or provide loans, guarantees issued or received, and assets accepted into safe custody. The reason is that at the change of exchange rates the positions in these instruments do not influence a directly shown profit or loss from foreign exchange positions. That is why banks usually did not hedge the foreign exchange risk in these positions. VaR after taking into consideration credit commitments and guarantees is shown in Chart 110. This value is significantly higher than the one that does not take into consideration these instruments.

Interest rate risk

Bank exposure to a interest rate risk depends on the sensitivity of individual financial tools in their portfolios to the changes in interest rates.

Most banks have almost closed positions in their trading books, with the exception of the positions in the

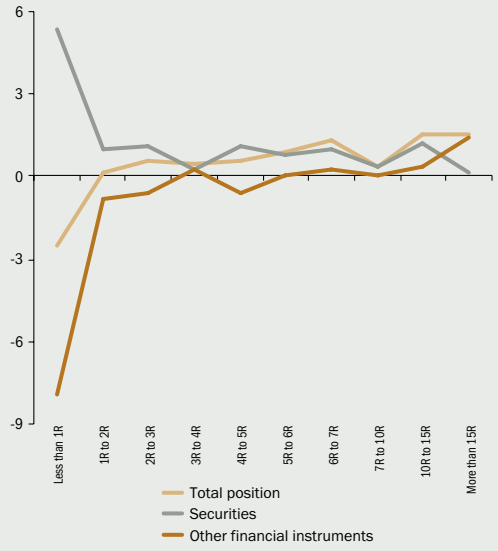
Chart 111 **Interest rate positions in the trading book**



Source: NBS, own calculations.
On the horizontal axis there are periods of the balance fixation of interest rates, or balance maturity. On the vertical axis, there are proportions of open positions in the total balance amount. The chart does not include the data of foreign banks branches.

34 *When calculating VaR, only one-day losses were simulated and the obtained value was subsequently re-multiplied by .*

Chart 112 **Interest positions in the banking book**



Source: NBS, own calculations.
On the horizontal axis there are periods of the balance fixation of interest rates, or balance maturity. On the vertical axis, there are proportions of open positions in the total balance amount. The chart does not include the data of foreign banks branches.

shortest time zones within 1 year. These positions are formed especially by short-term, inter-bank deposits and credits recorded in the trading book. The open positions in these zones does not cause significant sensitivity to the change of interest rates though. However, a low open position in the trading book is mainly related to relatively low volumes of the trading book in comparison with the banking book. In banks that have their open position in the trading book more significant, these open positions are formed by interest rate derivates, especially in zones with a longer period of fixation of interest rates, or maturity (Chart 111). The reason is that several banks hedge the interest rate risk of securities that are in the banking book, but are revaluated to their actual value (in portfolios other financial tools are revaulated to their actual value and financial tools for sale) by interest rate derivates.[35]

Positions in the banking book are higher compared to the positions in the trading book. As shown in the Chart 112, these positions are especially in the zones with a longer period of fixation (from 3 to 10 years) formed almost exclusively by the positions in securities. Positions in other financial tools recorded in the banking book (credits, deposits, interest rate derivates) are little significant compared to the position in securities. As assets predominate over liabilities in the zones with a longer period of balance fixation, the increase in interest rates, especially in the longer time zones would have a negative impact on banks (expressed by the decline in the net economic value).

However, it needs to be noted that although the classification into a banking book and a trading book is important in terms of the calculation of capital requirement for the interest rate risk (or the risk of debt financial instruments), this classification does not entirely comply with the classification of those financial tools that would have a direct impact on a profit, or on the value of equity at the change of interest rates. This discord concerns especially purchased securities. That is, banks include in the trading book only those securities, revaluated to their actual value against profit and loss, which are designed for trading. Other securities revaluated to their actual value against profit, securities for sale and those held to maturity, are included in the banking book.

The size of an interest rate risk expressed through a net economic value can be evaluated by means of VaR. Similarly, as in the case of a foreign exchange risk, this value was calculated as the biggest loss that banks should not exceed, as far as the assumption of the possession of the unchanged portfolio with 99% probability is concerned, during 10 days. When this loss is taken into consideration, the median value of the capital adequacy of the banking sector decreased to 15.8% (i.e. by 0.3 p. b.). The biggest VaR is shown especially by the banks with a higher proportion of government bonds in the balance amount.

Liquidity risk

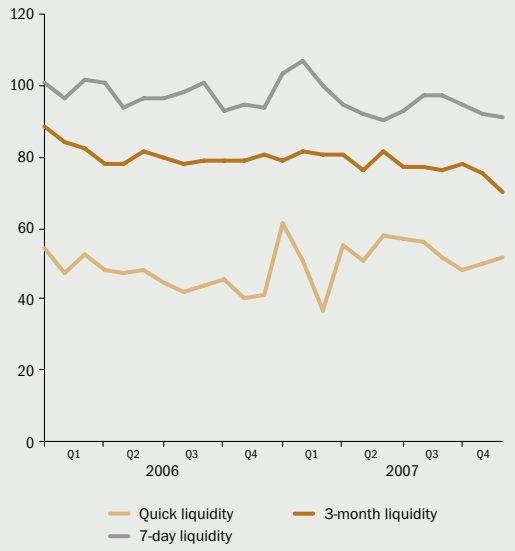
At present the situation in the banking sector in terms of liquidity is characterized by a high proportion of means sterilized within the NBS, as well as other liquid assets (especially government bonds) in the balance amount. On the other hand, the high speed of the growth of especially long-term loans pose a question whether this growth does not aggravate the liquid position in individual banks. The following analysis thus focuses on two items:

- Appraisal whether in a short term individual banks have sufficient volume of quick liquid assets, concerning the volume of the liabilities with a short balance maturity period,
- Appraisal whether credit activities of banks are bound to the sources from an inter-banking market or they are financed by the client deposits.

From a short-term view of liquidity, there were not any significant changes in the banking sector as a whole. During the first half of 2007, the median of the proportion of liquid assets[36] and other assets, from

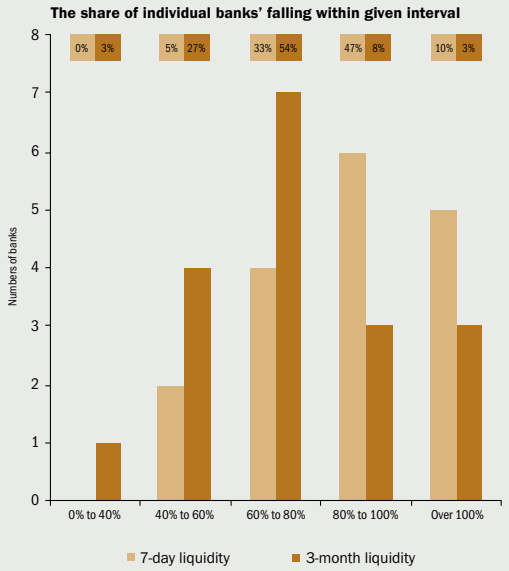
35 *More details in the section of Stress testing of interest rate risk.*

Chart 113 **Development of the median values of liquidity indicators**



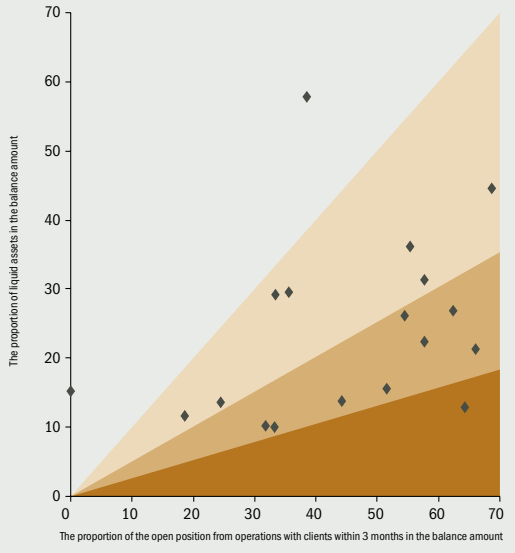
Source: NBS.
The chart does not include branches of foreign banks with the market share smaller than 2% out of the total assets of the sector.

Chart 114 **Distribution of the liquidity indicators within 7 days and within 3 months**



Source: NBS.
The chart does not include branches of foreign banks with the market share smaller than 2% out of the total assets of the sector.

Chart 115 **Comparison of the liquid cushion and the open position from operations with clients within 3 months**



Source: NBS.
The chart does not include branches of foreign banks with the market share smaller than 2% out of the total assets of the sector. The horizontal axis shows the proportion of the open position from operations with clients within 3 months in the balance amount. The vertical axis shows the proportion of liquid assets in the balance amount

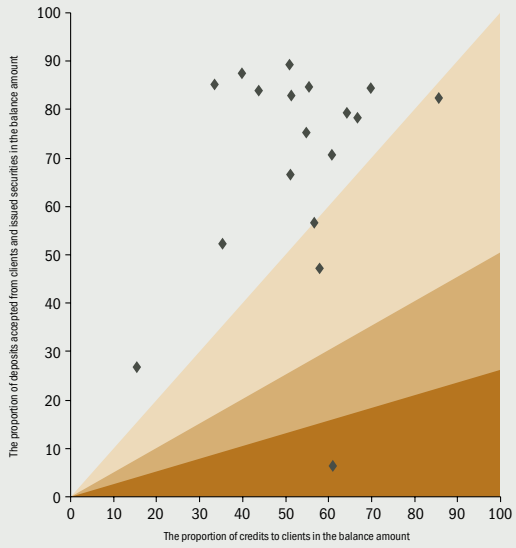
which a cash flow can be expected within 7 days to the liabilities with the balance maturity within 7 days, was quite stable on the level of 90 – 100%. An analogous conclusion about the development without any significant changes in most banks can be also said about the median of the proportion of liquid assets within 3 months to the liabilities with the balance maturity within 3 months. Lower values of this indicator in some banks mean that a good liquid situation of these banks is more based on the condition of a stable core deposits.

Although it is true for the banking sector as a whole that from a short-term view the liquidity situation did not change significantly, some banks recorded during the second half of 2007 its partial deterioration. The reason was mostly the increased number of non-term deposits and at the same time liquid assets did not increase to the same degree.

As indicated in the Chart 114, in most banks that want to keep a good liquid position in the time horizon within 3 months, it is necessary that a part of the deposits is held in the bank for a longer period than their actual maturity. However, as the comparison of the liquid cushion[37] and the open position within 3 months[38] show on the balance amount (Chart 115), the significance of this condition is different in individual banks.

36 *Liquid assets are considered to be all purchased treasury bills, government bonds and NBS bills accepted in reversed repo transactions that were not granted as collateral.*

Chart 116 **Comparison of the proportion of loans in the balance amount and the proportion of deposits and issued securities in the balance**



Source: NBS.
The chart does not include branches of foreign banks with the market share smaller than 2% out of the total assets of the sector. The horizontal axis shows the proportion of credits to clients in the balance amount. The vertical axis shows the proportion of deposits accepted from clients and issued securities in the balance amount.

From the long-term view of liquidity, concerning sustainability of credit activities, it is necessary that in most banks these activities are financed by the client deposits or issues of long-term securities, not by short-term deposits from inter-bank market (Chart 116). However, in several banks the proportion of loans on deposits and issued securities is increasing. Within the whole banking sector its value increased inter-yearly from 6% to 69%.

Insurance companies

The most significant kind of risks that insurance companies are exposed to, are insured risks. Apart from that, insurance companies are exposed to market risks that can cause unexpected decrease of the value of assets covering technical provisions. As no sufficient data is available for a detailed analysis of insurance companies' exposure to insurance risks, in this analysis we will deal with the impact of market risks only. The second restriction is that the mentioned analysis relates only to the assets covering technical provisions, at which the risk is borne by the insurance company. The assets that do not cover technical provisions and the assets invested on behalf of the insured are not taken into account.[39]

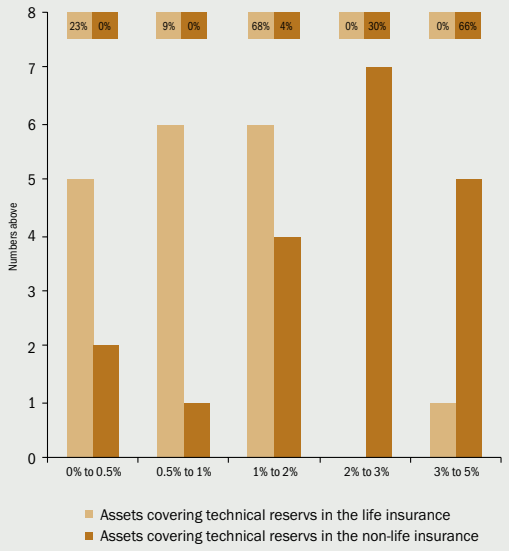
The most significant market risk, which can influence the value of assets covering the technical provisions of insurance companies, is the interest rate risk. Insurance companies would be exposed to a negative effect mainly at the increase of interest rates. During 10 days, in insurance companies the values of assets covering the technical provisions, can decrease with 1% probability by o 2.3% in life insurance and by 0.7% in general insurance (median values). The reason is a relatively big proportion of debt securities in the assets covering the technical provisions of insurance companies (77%) and their high duration, especially in some insurance companies. On the other hand, only a small part of the portfolios of debt securities is priced in its fair value against a profit and loss. The interest rate risk thus does not manifest itself immediately after a possible change of the interest rates in the profitability of insurance companies. The impact will be only gradual, by means of the interest income decrease.

Insurance companies invested mostly in domestic debt securities, especially in Slovak government bonds (49% of all debt securities covering technical provisions). The debt securities issued by other domestic subjects formed 14% of the total volume of debt securities. In terms of a rating evaluation, 6% of all debt securities had AAA rating, 6% had AA rating, 59% had A rating (all government bonds of SR belonged to this category),% had BBB rating, and 27% had no rating, out of the total volume of debt securities.[40]

However, it needs to be noted that the mentioned conclusions about the exposure of the assets covering technical provisions to risks, do not take into account the fact that in case of some products of life insurance, a payment of finances to clients with a fixed interest rate, or with a longer period of the interest rate re-pricing can be arranged. This fact reduces the estimated exposure to the interest rate risk.

37 *Liquid cushion is the sum of balance in cash, government bonds, treasury bills, NBS bilss, deposits within the NBS and current accounts in other banks, after deducting obligations to foreign banks (except for long-term ones) and DLMA and assets granted as collateral.*
38 *Open position within 3 months is the difference of the sum of obligations to clients and issued securities with a balance maturity within 3 months and the sum of claims to clients and debit securities issued by banks with a balance maturity within 3 months.*
39 *Data for taking into consideration the risks of these activities will be available from the first half of 2008.*
40 *Source: REUTERS.*

Chart 117 **Distribution of the proportion of VaR in the volume of assets covering technical provisions**



Source: NBS, REUTERS, BLOOMBERG, own calculations.
Numbers above the chart represent the proportion of individual insurance companies falling under the given interval in the total volume of technical provisions.

Insurance market as a whole was exposed to a relatively low equity risk (Table 16). The reason is that the volume of investments in equities and shares of mutual funds formed only 3% out of the total volume of assets covering technical provisions. These investments were used to cover their technical provisions by nine insurance companies only, mostly in life insurance. At the same time, the insurance companies invested mainly in equities and shares of foreign mutual funds or in shares of domestic bond, money market and special mutual funds. However, it needs to be noted that this way the insurance companies may be exposed to additional influence of a foreign exchange and interest rate risk, which cannot be estimated more accurately, even in spite of the specified limits of the foreign exchange risk. A relatively strong variability of riskiness of these portfolios among individual insurance companies results from the given various types of equities or shares of mutual funds.

In most insurance companies the direct foreign exchange risk of assets covering technical provisions is insignificant. In any of the insurance companies, VaR for the foreign exchange risk does not exceed 0.6% of the total value of the technical provisions. This position is long in the insurance companies that have an open foreign exchange position, as the insurance companies' obligations are mostly denominated in a domestic currency. Out of the whole open position, 63% is formed by the position in Euros and 14% by the position in American dollars.

Funds of pension management companies

Funds of pension management companies are exposed especially to market risks.

Conservative funds are exposed to the interest rate risk only, as they do not have any open equity or foreign exchange positions. As VaR calculations indicate, this risk is relatively low. The funds mostly hold bonds with

Table 16 **Exposure of assets covering technical provisions of insurance companies to risks** **(in %)**

	Assets covering technical provisions of general insurance			Assets covering technical provisions of life insurance		
	Minimum	Median	Maximum	Minimum	Median	Maximum
1 Equity risk	0.0	0.0	1.5	0.0	0.0	1.5
2 Foreign exchange risk	0.0	0.0	1.1	0.0	0.0	0.6
3 Interest rate risk	0.1	0.7	3.4	0.1	2.3	4.1
4 Total risk	0.1	0.8	3.4	0.1	2.3	4.3
5 Equity risk to the portfolio of equities	0.4	1.9	7.2	0.4	6.5	10.0
6 Interest rate risk to the portfolio of debt securities	0.1	1.2	4.6	0.2	3.0	4.3

Source: NBS, REUTERS, BLOOMBERG, own calculations.
Values in the table give VaR (on the significance level of 99%, at the assumption of a 10-day possession of unchanged portfolio) in the value of assets covering technical provisions (lines 1 to 4), or in the portfolio of equities (line 5) or debt securities (line 6), which cover technical provisions. The calculations do not include assets that do not cover technical provisions, nor assets invested on behalf of the insured, nor assets corresponding to the proportion of providers for the technical provisions. What is not taken into consideration at the interest rate risk are deposits in bank accounts, nor the bounds of interest rates to liabilities; in addition, it is assumed that all deposit securities are re-priced to their actual value.

Table 17 **Exposure of pension funds to risks** **(in %)**

	Conservative funds			Balanced funds			Growth funds		
	Minimum	Median	Maximum	Minimum	Median	Maximum	Minimum	Median	Maximum
1 Equity risk	0.0	0.0	0.0	0.8	1.0	1.7	0.9	1.3	2.0
2 Interest rate risk	0.1	0.1	0.2	0.0%	0.1	0.2	0.1	0.2	0.2
3 Foreign exchange risk	0.0	0.0	0.0	0.0	0.1	0.3	0.0	0.2	0.3
4 Total risk	0.1	0.1	0.2	0.7	1.0	1.9	0.8	1.3	2.2
5 Equity risk to the portfolio of equities				4.4	5.7	7.8	4.4	5.8	7.7
6 Interest rate risk to the portfolio of debt securities	0.1	0.2	0.6	0.1	0.3	0.9	0.2	0.3	0.9

Source: NBS, REUTERS, BLOOMBERG, own calculations.
Values in the table give VaR (on the significance level of 99% , at the assumption of a 10-day possession of unchanged portfolio) in NAV (lines 1 to 4), or in the portfolio of stocks (line 5) or in debt securities (line 6). What is not taken into consideration at the interest rate risk is the interest rate risk resulting from the liability of term deposits.

a relatively short duration, denominated in Slovak koruna. Generally, it can be said that during 10 days the profitability of the conservative funds should not decrease by more than 0.2 p. b, with 99% probability.

In most cases, there is not a big difference in the exposure of balanced and growth funds to market risks, within individual pension management companies. The reason is that the differences in the composition of portfolios are within one company mostly slight only. A more significant difference is only in a lower proportion of the equity part of the portfolio in balanced funds, in comparison with the growth funds.

The most significant risk that these funds are exposed to, is the equity risk. In comparison with this risk, foreign exchange and interest rate risks are relatively insignificant. By the end of 2007, the proportion of the portfolio stock component in the whole portfolio was at the level of 16% to 22% in individual balanced funds, and 21% to 26% in growth funds. Within one company, a significant difference is not between the composition and riskiness of the portfolio equity part, but in its proportion in the whole portfolio. In comparison with the period at the end of the first half of 2007, the riskiness of equity portfolios increased because of the volatility growth in stock markets. A maximum 10-day loss that should not be exceeded, with 99% probability, was only at the level of 3.5% to 5.6% of the stocks value in balanced and growth funds, as of June 30 2007.

Proportion of VaR for the interest rate risk in NAV is comparable with conservative funds. The interest rate risk is thus at a relatively low level. In most balanced and growth funds the duration of the bond part of portfolio does not exceed 1.5 year either. Moreover, at funds with a higher duration, the proportion of the bond part of the portfolio is lower, which mitigates the total exposure to the interest rate risk.

Balanced and growth funds would not be significantly influenced by the change of exchange rates either. Their foreign exchange positions arising mainly as a result of investments in foreign stocks and shares of mutual funds are to a big extent closed. The VaR value for the foreign exchange risk in NAV did not exceed 0.3%.

Funds of pension supplementary companies

Like the funds of pension management companies, the funds of pension supplementary companies are exposed mainly to market risks, as well. However, unlike the funds of pension management companies, the investment strategy of these funds is mutually relatively different.

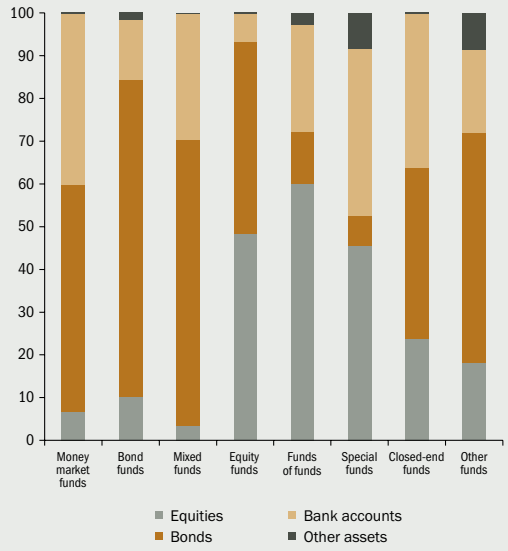
Majority of contribution funds are exposed to stock and interest rate risk, as well, although to a different extent.

The funds are exposed to a foreign exchange risk especially as a result of unsecured long positions arisen from investments in securities denominated in foreign currencies. The funds have open positions especially in Euros and American dollars, only exceptionally in other currencies (Hungarian forint, Czech crown). Some funds use FX derivates to reduce or close foreign exchange positions. However, other funds are not exposed to a foreign exchange risk to a significant extent, either.

Payment funds keep almost all their assets in current accounts or term deposits, or in bonds with a low duration.

Generally thus, the growth contribution funds investing to a bigger degree in stocks and allotment certificates, seem to be the riskiest out of the pension supplementary companies funds. Because of higher volatility of stock markets, the riskiness of these funds increased during the second half of 2007. However, their market share is relatively low.

Chart 118 **Proportion of individual tools in the investments of shares funds**



Source: NBS.

Collective investment

Shares funds are exposed mainly to foreign exchange and equity risks. Their exposure to an interest rate risk is relatively low, also in funds with a higher proportion of bond component. The interest rate risk VaR in almost all mutual funds does not exceed the value of 1% of NAV. Most funds thus would not record a significant impact on the actual value of securities, in case of an unexpected change of interest rates. However, at the decrease of interest rates, their profitability would gradually decrease.

A foreign exchange risk represents a relatively significant risk for the mutual funds. The reason is that several mutual funds have equity and debt securities denominated in foreign currencies in their funds. Only funds of funds have a relatively low VaR. However, they can be exposed to a foreign exchange risk indirectly, by the influence of the foreign exchange risk on the value of the allotment certificates that they keep in their portfolios. In none of the funds the VaR for the foreign exchange risk exceeded the value of 7% of the fund net asset value.

The equity risk was calculated from the positions of funds in stocks and allotment certificates of other mutual funds. This risk can significantly influence the value of investments, especially in stock mutual funds. During the second half of 2007 the level of this risk increased, because of the increasing volatility of stock markets. Following the development in 2007, it can be assumed that with 99% probability the value of the allotment certificates of stock mutual funds should not decrease by more than 10% on average, which is a relatively high value.

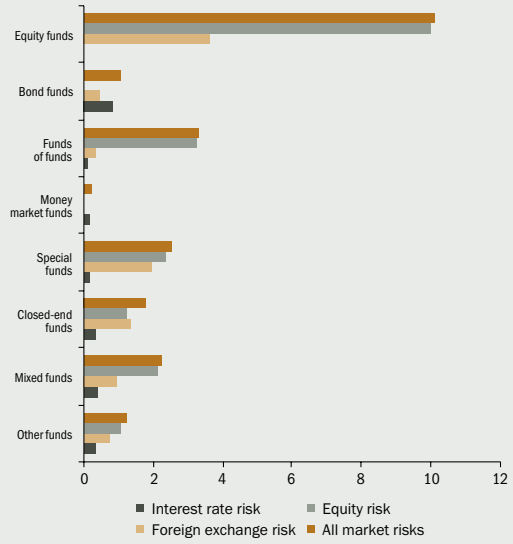
It also results from the analysis that VaR at the level of up to 1% of NAV has most of the mutual funds total assets, as many as 64%, which means that the

Table 18 **Exposure of mutual funds to risks** **(in %)**

The type of funds	VaR (0%-1% of NAV)	VaR (1%-3% of NAV)	VaR (3%-6% of NAV)	VaR (6%-8% of NAV)	VaR (8%-15% of NAV)	Proportion of the type of fund in the total assets
Equity	0	0	1	10	89	5
Bond	65	32	3	0	0	13
Money market	100	0	0	0	0	47
Fund of funds	5	46	49	0	0	11
Mixed	33	46	12	10	0	10
Closed	0	100	0	0	0	1
Special	27	14	59	0	0	4
Other	29	64	7	0	0	8
Total	64	21	10	1	4	
Total June 2007	57	30	6	7	0	

Source: NBS, REUTERS, BLOOMBERG, own calculations.
Proportions of NAV of mutual funds with the corresponding VaR value in the total NAV of the given group of funds.

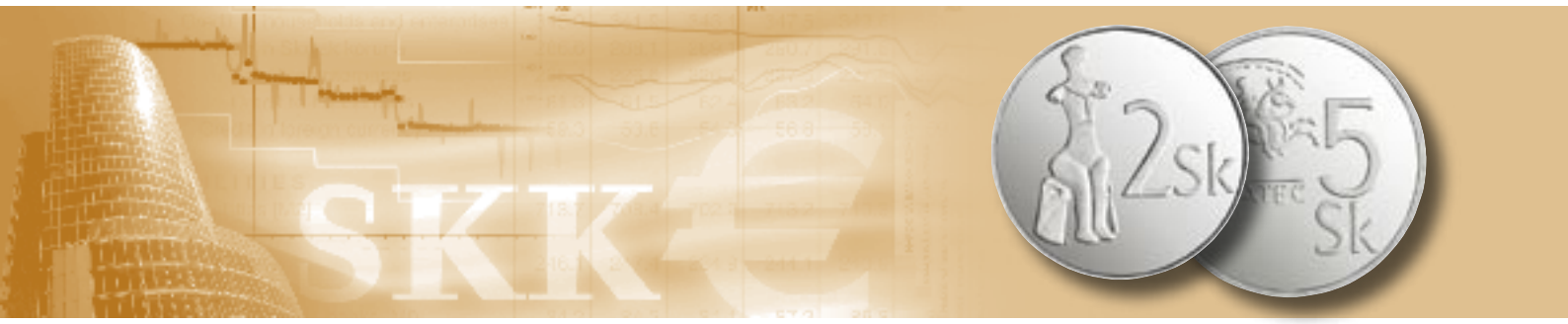
Chart 119 **Distribution of VaR proportion in the net value of mutual funds' property**



Source: NBS, REUTERS, BLOOMBERG, own calculations.

majority of mutual funds assets are invested in little risky assets. The reason is that almost half of the assets are accumulated in money market funds whose VaR ranges in the interval of up to 1% of NAV. Equity funds whose proportion in the total values of NAV is 5%, have the biggest riskiness.

Stress testing



7 Stress testing

When interpreting conclusions of stress scenarios, it is necessary to consider that estimates of the impact (e.g. with regard to capital adequacy) can be interpreted as to be informative only since all considered scenarios contain essential simplifications in comparison with reality. It is more purposeful to analyze test results according to mutual sensitivity comparison of these values on shocks in external stress parameters. Moreover, several scenarios, the effect of which was considered independently, would be implemented together with other scenarios, and this way their impact could be enhanced more significantly. Detailed specification of a stress testing methodology is in the document Annex to Report on Slovak Financial Sector Analysis Results in part 1.

7.1 Credit risk in banks

Even though bank sector stability should not be threatened by a credit risk, a sensitivity of certain banks to this risk increased during the second half of 2007. However, the reason is primarily a fall of the capital adequacy. A rise of the credit portfolio risk appears to be a less significant factor. The company default rate together with a failed credit growth rate were lower than in the first half of the year. A potential double increase of default rate would cause a fall of the capital adequacy below 8% within one year in two banks.
From the retail credits risk point of view, most of the banks are neither exposed to considerable quality deterioration, nor real estates prices decrease. The reason is that banks secured a large part of these credits by real estates the value of which exceeded the credit values. The sensitivity to a decline of real-estates prices can be increased in provisioning of credits exceeding real estates values.
Stress testing further showed that due to a relatively low share of interbank deposits and credits on bank assets and their a relatively high diversification, a direct effect of some bank bankruptcy by means of an inter-bank claims default on other banks would be relatively low. Results show that by the end of respective months in 2007, there were maximum four banks, to which in case of default in payment of obligation from other bank, the capital adequacy could drop below 8%.

Credit risk in a credit portfolio to clients

Stress testing of credit risk was performed with four scenarios:
1. credit crunch,
2. provision of credits with a higher default rate,
3. price decline of real estates securing credit,
4. increase of unemployment combined with a real estates price decline.

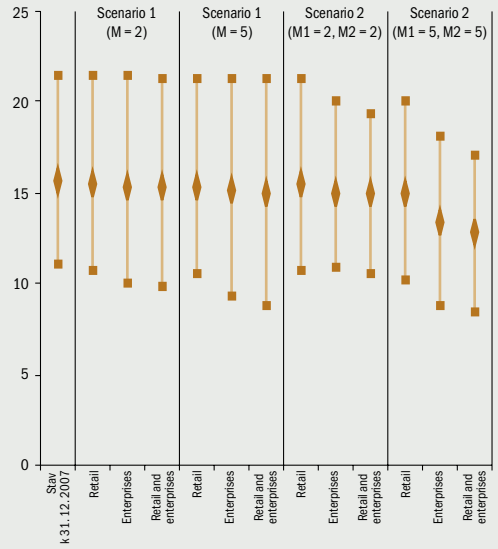
Moreover, each of scenarios 1 and 2 was implemented in two variants. A more detailed description of all respective scenarios may be found in Annex to Report on Results of Slovak Financial Sector Analysis in part 1.

In conditions of a high economic growth, which can be observed in Slovakia, a credits increase has been putting forward the question for several years whether banks are not in a danger of excessive loss resulting from incautious credits which can be potentially provided in higher rate in good times or from the future unfavorable macroeconomic development. The very stress testing of a credit risk allows us to respond partly to this question. In general, based on the whole sector results, the sector would not be threatened by credit risk loss in medium-term horizon. An effect of all scenarios in their more moderate shape would be considerably limited in positive meaning in overwhelming majority of cases. Only extreme shapes of individual scenarios led to outcomes which would mean partial complications, namely in some banks.

The first scenario simulates an old credits failing increase combined with suspending a bank credit activity. Deterioration of a credit portfolio quality is derived from either the biggest incremental of defaulted credits in a history in a respective bank (variant 1), or from existing default rates received from the Register of Credits and Guarantees[41] (variant 2), while respective values are even stressed by factor M. The significance of a multiplier is different according to respective variants. Whereas in variant 1, it is possible to perceive M to be a number of months, in

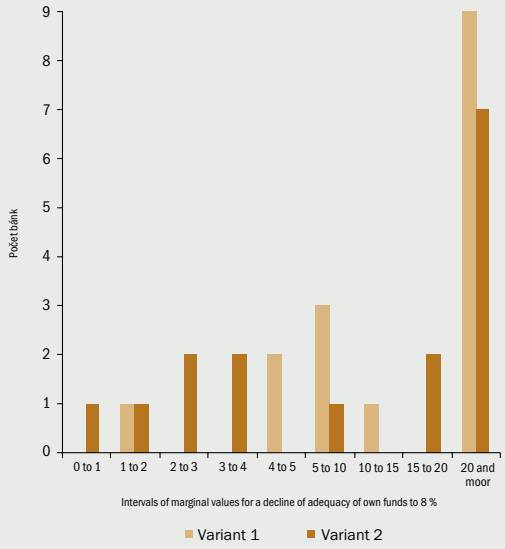
41 *RBUZ – Register úverov a záruk = Register of Credits and Guarantiees.*

Chart 120 **Comparison of the effects of the first variant of scenarios 1 and 2 on the distribution of capital adequacy in the banking sector**



Source: NBS, own calculation.
Chart shows a lower quartile, median and upper quartile of the distribution of estimated capital adequacy ratios in the sector after application of the first variant of scenarios 1 and 2.

Chart 121 **Distribution of both scenario 1 variants marginal values in a sector for a decline of capital adequacy to 8%**



Source: NBS, own calculation.

which it would come to a biggest increase recurrence, in the second variant it is necessary to interpret it as a factor of a default rate increase. While evaluating effect of both first scenario versions, it is based primarily on the results acquired for multiplier choice M=2 or M=5. Whereas a lower value of parameter represents moderate as well as enough probable deterioration of portfolio quality, the other one should affect the situation in case of extremely unfavorable bank development.

Among a pair of variants considered in scenario 1, the second variant stressing the credit for business default rate in respective banks appeared to be more risky. The effect of scenario 1 in this shape can be evaluated to be the most significant also with respect to comparison with all other scenarios simulated in terms of a credit risk stress testing. A median value of adequacy of own funds would be lowered in case of its implementation by 1.1%, which itself does not cause a significant threat, particularly when respective number refers to a multiplier choice M=5. If we look at the first quartile value of capital adequacy, which would decrease from its real (December) value 11.1% to stress 6.1%, then it is obvious that impact of such scenario cannot be considered to be insignificant. Considerably different changes of median and the first quartile refer to the effect on respective banks in sector which would be unequal. It is due to the fact that this scenario works with a credit risk of companies only. Therefore, these banks focusing mostly on retail banking, appear not to be trouble in the scenario. This means that whereas more than a half of the banks would be affected in a moderate way, the remaining part of the sector would suffer rather significant losses. The fall of adequacy of own funds under regulatory limit 8% would be the impact for most of these banks. As many as 6 banks would have problems with fulfilling the capital requirement. The above-mentioned fact that only corporate credits are entering the stress scenario even emphasizes a relatively high risk connected with this development. Even if potential deterioration of a retail portfolio credit quality was taken into consideration, such combined loss would be really significant, especially for banks covering both segments concerned (as many as five out of six most suffering banks offer corporate as well as retail credits). On the other hand, it also needs to be said that a simulated sharp fivefold increase of company default rate really represents a rather extreme situation, and the fact it would happen is really unlikely. In case of a default rate doubling, it is a much more real possibility. Nevertheless, under these circumstances, there would be two banks not fulfilling capital requirements.

What concerns an effect of the scenario 1 first variant, it would be, in comparison with the discussed second variant, significantly more moderate, even despite the fact that corporate credits as well as retail credits are regarded in it. It would be, with the exception of

two banks, absolutely minimum in a combination with a multiplier M=2 . Only at significant change of conditions represented by choice of M=5, negative effects would become more evident. Three banks (one of them just really closely) would get below the 8% limit with the capital adequacy. The capital adequacy median decrease would reach approximately 1.5 percentage points.

In scenario 2, a situation is considered when banks trying to gain a larger market share offer a large number of a new credits, even to less reliable entities, which leads immediately to an excessive default of the credits. Also in this case there were two variants implemented. The scenario worked with a pair of multipliers M_1 and M_2. Their significance is common for both variants. M_1 expresses a relationship between a maximum share of defaulted credits on total credits in 2007 and share of defaulted credits from new credits in the future. Multiplier M_2 serves for a simulation of a bank credit activity increase concerning average values of month-on-month relative changes in provided credit amount over the last year. The other interpretation is extension of a period in which the stress scenario remains valid. Analysis of the second scenario is, similarly to the first scenario case, built on two simulations covering more moderate (M_1=2, M_2=2) and more unfavorable (M_1=5, M_2=5) development of credit risk indicators.

In case of evaluating the results from scenario 2 simulation, it is sufficient to focus on its first variant. An impact of variant 2 is basically, with exception of one bank, very limited. The positive thing is that also in case of variant 1, more significant losses would be reached when the development of the situation in banks corresponds to stress parameters with values M_1=M_2=5. Under these circumstances, a median of capital adequacy would drop to 12.7%, i.e. by 3 percentage points. With several exceptions, an effect of the scenario´s first variant would be distributed relatively equally in the whole sector.

Another stress test is aimed at judging the impact of changes in real estates prices. This case is based on detailed microeconomic data. The subject of the research is a potential influence of real estates price decline serving as collateral to additional creation of provisions and a later effect on capital adequacy. Scenario works with an assumption that unsecured parts of credits are covered in respective credit categories (credits without depreciation, undefaulted credits with identified depreciation and defaulted credits) with 0, 10 and 100 percent of provisions in sequence. Price decline on real estate market was determined at a level of 30% or 50% . Results of stress test seem positive. More than two third of banks would be affected by the fall of capital adequacy by less than 1 percentage point also in significant recession at real estate market (price decrease by 50%). Under these circumstances, some more significant reduction of this indicator, 3 p.p. approximately, would be threatening to four banks. The most likely reason of low bank vulnerability in this scenario is a conservative approach of banks concerning the amount of credit provided with regard to the value of the collateral, which was dominant in the past.

The last scenario includes a combination of two entering macroeconomic shocks. It simulates both unemployment increase and a price fall of real estates in the economy. Stress scenario assumes an increase of the unemployment rate by 10 p.p., which would, by means of disposable income of some households, transform into an increase of a defaulted credits share by 5 p. p. This value was gained from simulation results focused on quantification of relationship between the unemployment increase and a change of defaulted credit share implemented within a stress testing in the previous version of this report. Another two assumptions in this scenario are the real estate price fall by 50%, and creating of provisions for defaulted credits in total amount of unsecured value (i.e. 100%).

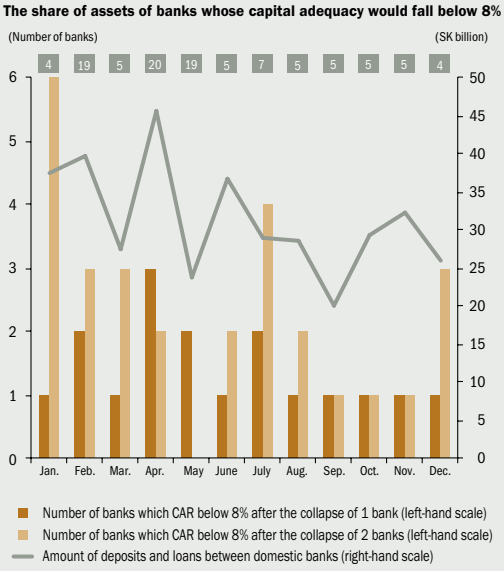
Although a sudden real estate price fall by half in a combination with 10% unemployment growth represents really an extreme scenario, results of the test indicate a good sector resistance to this development. More significant decline of capital adequacy at around 6 p.p. would affect three banks only. Considering a high rate of registered capital in these companies, this decrease does not really mean a serious danger disrupting their financial stability.

Contagion risk of banking sector

In this analysis, a contagion risk denotes the risk, where a collapse of one domestic bank brings about deterioration in the situation, or even a collapse of other banks. Main reasons can be the interconnections among banks by means of deposit and credit transactions on the interbank market. If some of the banks were not be able to repay their liabilities, this would mean a loss connected with a decrease of capital adequacy for other banks. In this respect, the system risk is connected with a credit risk resulting from interbank claims and depends on diversification of claim portfolio on the interbank market.

Chart 122 illustrates number of banks in which the capital adequacy could drop below the regulatory level of 8% in case of one or two banks bankruptcy. According to the data for the end of respective months, the number varied from 1 to 3 in case of one bank bankruptcy during 2007. In the second half of 2007 we can talk about a decrease of the contagion risk in comparison with the first half of 2007. This contagion risk decrease was at the same time connected with

Chart 122 **The effect of stress testing the contagion risk on domestic interbank market**



Source: NBS, own calculation.
CAR – capital adequacy ratio.

a decline of total amount of deposits and credits on the domestic interbank market.

The analysis further shows that even though it may happen that bankruptcy of one bank causes a decrease of capital under a minimum level, further spreading of bankruptcies is unlikely, if some other conditions did not deteriorate. Totally, we can evaluate the contagion risk in the Slovak banking sector to be low.

7.2 Liquidity risk in banks

From the liquidity point of view, there is a positive fact that the bank sector has a sufficiently large volume of liquid assets to cover an unexpected drawing of 20% of customers deposits or 90% of foreign banks deposits. In both cases, a change of liquidity indicators would not mean more than twice as much as an average month-to-month change in most of the banks.

In liquidity risk stress testing, the following two basic scenarios were chosen:

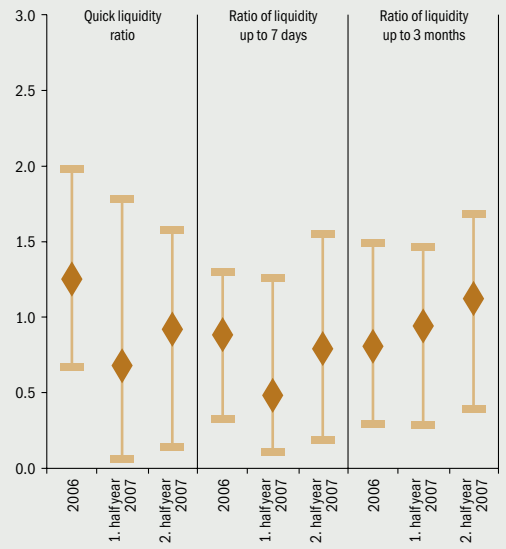
- a 20% decline in the volume of customers' deposits.
- a 90% decline in the volume of foreign banks' deposits.

Analysis of these scenarios impact is based on a sensitivity of three selected liquidity ratios (the quick ratio, 7-day ratio, and 3-month ratio)[42] on these scenarios in respective banks. Each indicator is calculated as a share of the liquid assets and volatile funds in the respective category. Size of a shock is considered with a reference to the average of absolute values of month-to-month changes of respective indicators.

Scenario of drawing 20% of customer deposits would not have a significant impact on liquidity situation in most banks. As the Chart 123 shows, impact of this scenario on respective liquidity indicators would not, at least in half of the banks, exceed their average month-to-month change too much. It is obvious from this chart that the sensitivity of the first two indicators on this scenario went down during the first half of 2007, and rose slightly in the second half of 2007. The main reason was, in the first place, a rise of deposits with a short-term liability without a more significant growth of liquid assets in some banks.

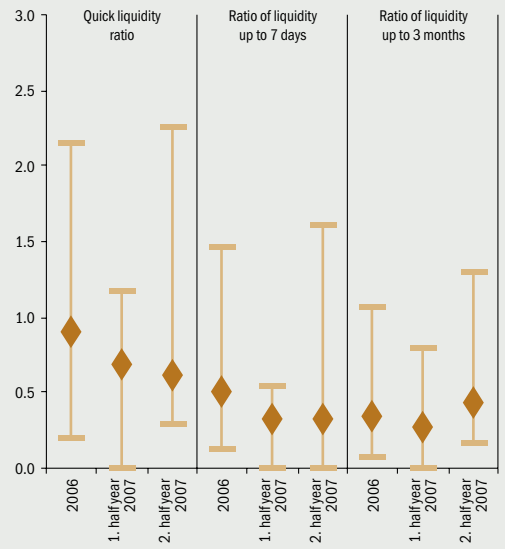
Impact of non-residential banks deposits scenario declined by 90% was not significantly changed during 2007. Results of the scenario indicate at the same time that all banks would be able to cover a 90% non-residential banks deposits decline by assets liquid in 1 month. In most banks, even immediately liquid assets would be enough.

Chart 123 **Impact of decline customers deposits by 20%**



Source: NBS, own calculations.
The chart shows a lower quartile, median and an upper quartile of the changes share distribution after applying the individual scenarios to the average month-on-month changes during last 12 months.

Chart 124 **Impact of decline of foreign banks deposits by 90%**



Source: NBS, own calculations.
The chart shows a lower quartile, median and an upper quartile of the changes share distribution after applying the individual scenarios to the average month-on-month changes during last 12 months.

42 *A definition of the ratios outlined in the Liquidity Risk section.*

7.3 Market risks

In 2007, the equity risk was significant neither in most of the banks nor insurance companies. An impact of extreme change was relatively low also in the 2nd and 3rd pillar´s pension funds. Even if koruna becomes extremely evaluated, the loss in any of 2nd pillar pension fund or most of 3rd pillar funds would not exceed 1.5% of the net asset value. The koruna appreciation would have the most significant negative impact on asset value in mutual funds, especially in funds investing in foreign equities.
In the banking sector as a whole, an impact of unexpected changes of NBS basic interest rate on the profitability would be rather low. The reason is that changes of securities real value revaluated on fair value through profit and loss are secured by interest rate derivatives. An impact on interest income from deposits and credits would also be relatively low. In case of an interest rate increase the banks are exposed to a rather significant decline in economic value of securities held to maturity and for sale. This can negatively affect on sector´s profitability in case of necessity to sell some of these securities before maturity.
The 2nd pillar funds and most of the 3rd pillar funds have a very low exposure against interest rate risk, mainly due to a low duration of a bond part in portfolios of these funds. For the 2nd pillar funds, the more negative impact within one year would have a decline of a basic rate due to a fall of interest income from coupon payments. However, it would not exceed 0.7% of net asset value in any fund at decrease of the NBS basic interest rate by 2 p.p. In the 3rd pillar funds, a growth of the interest rates would have the negative impact, since a change of real value would be more significant than a change of interest income interest within one year. This loss would not exceed 2% of net asset value at increase of the NBS basic interest rate by 2 p.p. On the contrary, securities covering technical provisions in several insurance companies would be exposed to a value decline in case of a rate increase. This change would not likely show more significantly on the reached profit, since the great deal of these securities is held to maturity.
A significant fall of foreign equity markets (by 20%) connected with the koruna appreciation against dollar and Euro and an increase of foreign interest rates would negatively affect particularly on some pension funds and balanced and growth pension funds both in the 2nd and 3rd pillars. Impact on banks and insurance companies was insignificant.

Foreign exchange risk

This part is devoted to the analysis of simulated impacts of the significant appreciation or depreciation of the domestic currency against other currencies on respective parts of financial market. Both scenarios were calculated based on an assumption of 15% shift in the SKK/EUR exchange rate, whereas changes of other exchange rates were calculated by means of an estimation of a correlations in stressed periods, which, in general, are higher than correlations in quiet periods (the difference is twofold in some currencies). A size of the shock is approximately triple in comparison to the most significant changes of exchange rates that happened during a ten-working-day period in recent years. Simulated shifts in exchange rates and their comparison with historical scenarios are showed in Table 19. The more detailed model description, based on which the respective scenario was created can be found in Annex to Report on the Results of the Slovak Financial Sector Analysis in part 1.

Simulations showed that the koruna appreciation, compared to its depreciation, would have a worse impact on most parts of financial market. The reason why is that the insurance companies and funds mostly do not have more significant share of liabilities in foreign currency, therefore their possible open foreign exchange position is mostly long. The only exceptions are banks, which have large part of liabilities in foreign currency. However, their foreign exchange positions are mostly closed, with exception of some foreign banks branches. Table 20 summarizes an impact of the simulated koruna appreciation.

Simulation indicates that the bank sector is exposed to the foreign exchange risk in very low rate only. In most banks and branches of foreign bank, possible loss would not exceed, even in extreme shifts of exchange rates, 0.2% of assets. As Chart 125 shows, the conclusion about an extreme change low impact on bank sector did not apply at the end of 2007 only but also during a period of 2005 – 2007. When simulating extreme changes of foreign exchange rates stated in the Table 19, stress testing of foreign exchange risk by the end of respective months did not disclose any possible decline of capital adequacy under 8%.[43]

Table 19 **Simulated movements in exchange rates obtained by estimating mutual correlations in stressed periods** **(in %)**

Currency	Koruna depreciation simulation	Koruna appreciation simulation	Historical scenario (for comparison only)	
			Obdobie 11. 3. – 29. 3. 2005	Obdobie 6. 3. – 20. 3. 2007
CHF	16	-16	3	-5
CZK	10	-10	1	-3
DKK	15	-15	4	-4
EUR	15	-15	4	-4
GBP	14	-14	4	-5
HUF	6	-7	2	-1
JPY	17	-18	5	-8
PLN	5	-5	-1	-3
SEK	14	-15	3	-4
USD	16	-17	3	-5

Source: NBS, own calculations.

Table 20 **Impact of the koruna appreciation scenario** **(in %)**

	Lower quartile	Median	Upper quartile
Banks and branches of foreign banks	0.0	0.0	0.1
From that: branches of foreign banks	0.0	0.1	0.2
Insurance companies	0.0	0.0	0.0
Pension funds	-0.7	-0.1	0.0
From that: Conservative	0.0	0.0	0.0
Balanced	-0.7	-0.6	-0.2
Growth	-0.8	-0.8	-0.2
Supplementary pension funds	-1.5	-1.2	-0.5
Mutual funds	-6.1	-3.7	0.0
From that: equity	-16.6	-15.3	-14.2
Debt	-6.0	-0.1	0.0
Mixed	-7.6	-4.1	-1.7
Funds of the funds	-11.0	-1.1	-0.1

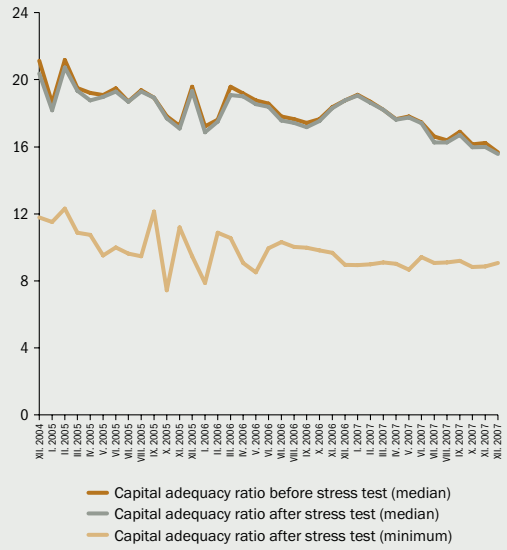
Source: NBS, own calculations.
Table shows quartiles of a profit or a loss share on assets (or technical provisions in insurance companies) as a result of the koruna appreciation. A negative value means a loss.

Significant changes of foreign exchange rates would not have a significant impact on technical provisions of most insurance companies, since size of open foreign exchange positions at technical provisions and assets covering technical provisions is limited by law. With an exception of four insurance companies, an estimated loss would not exceed 0.3% of assets covering technical provisions in a life or non-life insurance.

It is noteworthy, that despite the fact, that the foreign exchange positions of other insurance companies are virtually closed, significant changes in exchange rates may have an indirect negative effect on investments into open-end mutual funds. Despite the fact that shares/units of these funds are denominated in SKK, foreign exchange risk may cause a decline in their value, since foreign exchange positions of mutual funds do not have to be closed. At the same

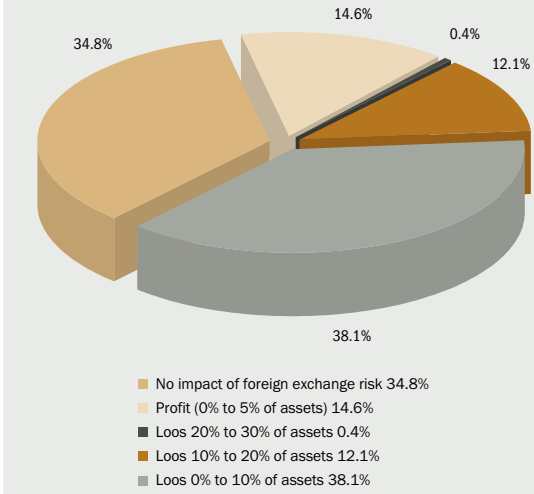
43 As stated before in the Bank Sector Risk section, situation would be different if off-balance sheet claims and liabilities from loan claims and guarantees were included in a calculation of open foreign exchange position.

Chart 125 **Time series of the impact of the exchange rate changes stated in Table 19 on banking sector (in %)**



Source: NBS, own calculations.
For each bank, the change in the capital adequacy ratio was estimated for that exchange rate movement which would have an adverse impact on the bank. The calculation did not cover branches of foreign banks.
CAR – capital adequacy ratio

Chart 126 **Distribution of the significant koruna appreciation impact stated in Table 20 on assets under management in mutual funds (in %)**



Source: NBS, own calculations.
The chart shows a share of respective funds asset on total amount of assets under management in mutual funds.

time, insurance companies may be exposed to foreign exchange risk via assets that are not covered by technical provisions.

The foreign exchange risk is rather insignificant in most 2nd pillar pension funds. This loss would not exceed 1.5% in balanced and growth funds, in conservative funds even 0.1% of net asset value. The foreign exchange risk in 3rd pillar pension funds is slightly higher in comparison with the 2nd pillar. Even in these funds, the loss caused by the extreme koruna appreciation in most funds would not exceed 1.6% of net asset value. Payroll funds are not exposed to the foreign exchange risk.

Regarding mutual funds, it seems that equity funds and funds of funds are exposed the most to simulated appreciation of domestic currency. Several equity funds with a larger share on total assets of mutual funds (approximately 1% to 3%) would suffer a rather significant loss at extreme appreciation of the domestic currency.

Interest rate risk

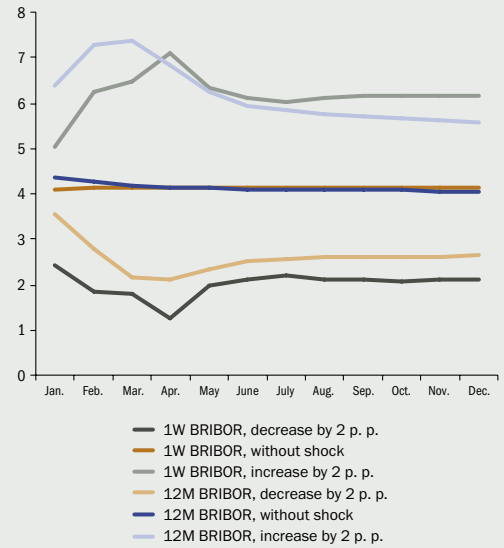
The profit or loss in case of unexpected change of NBS base rate is estimated for stress testing of an interest rate risk in a period from January to December 2008. Therefore, in the first place, it is necessary to estimate what changes of this rate are expected by the financial sector. Two-week rates of the interbank market for one-year period were figured by interpolation from yield curves, and from these rates NBS base rate was estimated by means of EC model. Based on estimations, the financial market did not expect a change of base rate, therefore any change is taken as unexpected and impact of a change as impact of an interest rate risk. Therefore, stress scenario was set as increase/decrease of NBS base rate by 2 percentage points to 1/1/2008, whereas a rate did not change in further period.

When interpreting scenario results, it is necessary to consider that an impact on the net interest income, impact on net profit from debt securities revaluation and interest rate derivates are taken into account only. An impact on a change of other non-interest income (e.g. incomes from fees or from net provisions creation due to an impact on financial positions of clients and their ability to repay loans) are not estimated.

Development of the interbank, discount and client interest rates was estimated by simulation of a decline or an increase of the NBS base rate by 2 p.p. using EC model.

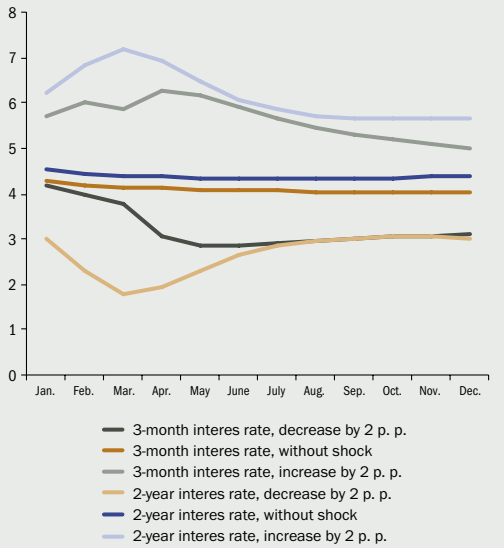
If the NBS base rate did not change, it could be expected that rates on the interbank market remain

Chart 127 **Estimated development of interbank market rates after a NBS base rate change (in %)**



Source: NBS, own calculation.
Data on an increase or decline in the chart legend means a simulated change of the NBS base rate.

Chart 128 **Estimated development of discount rates after a NBS base rate change (in %)**



Source: NBS, own calculation.
Data on an increase or decline in the chart legend means a simulated change of the NBS base rate.

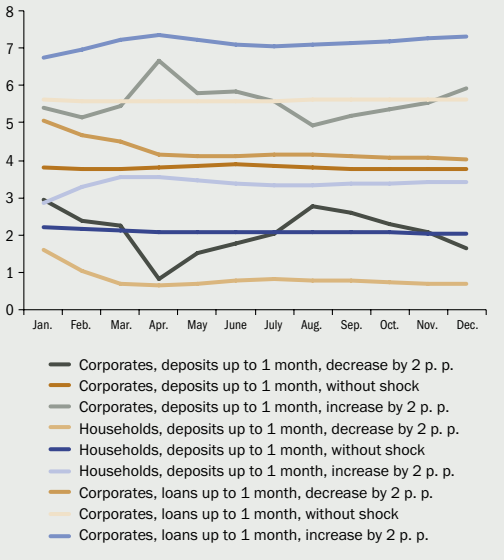
unchanged. In case of a rate change the reaction of rates on interbank market would depend on their maturity.

Reaction of shorter maturity rates would be symmetrical, after an increase during the first four months and a moderate decline, their value would be stabilized, whereas the change of the NBS base rate would not be reflected to the full extent.

Reactions of longer maturity rates (2 months and longer) would be moderately asymmetrical. Reaction would be more dynamic during the first half of the year at the NBS rate increase and it would come to higher changes in this period in comparison to the rate decline. In the second half of the year, it would come to moderation of fluctuation, the change of the NBS base rate would not reflect to the full extend.

The asymmetry is also visible in a development of discount rates, it would express itself in a bigger fluctuation more in case of a NBS base rate increase than in case of a rate decrease during the first six months. During the second six months, the value of rates would become stable, changes would not be reflected to the full extend.

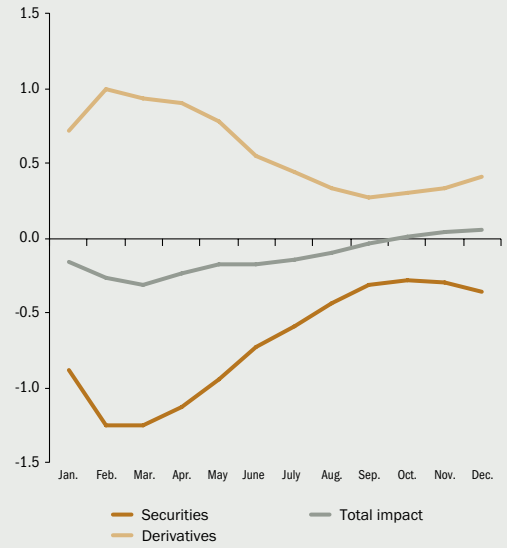
Chart 129 **Estimated development of credits and deposits rates after NBS base rate change (in %)**



Source: NBS, own calculations.
Data on increase or decrease in chart legend means a simulated change of the NBS base rate.

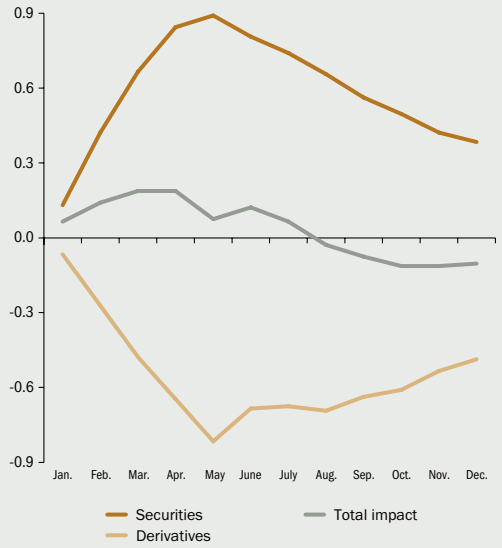
Interest rates of loans and deposits of companies and household show high dependence on interbank rates and the NBS rate, except for household loans and household deposits with maturity longer than 2 years. In case of a NBS rate change, reactions would be symmetric mostly, the biggest changes would happen during the first six months, their values would become stable during the second half of the year, whereas changes would not be reflected to the full extend. In case of household loans, it is possible

Chart 130 **Impact of NBS rate increase on the banking sector, 1st approach (in SKK billion)**



Source: NBS, own calculations.
Note: The horizontal scale shows estimated values for the year 2008.

Chart 131 **Impact of NBS rate decrease on the banking sector, 1st approach (in SKK billion)**



Source: NBS, own calculations.
Note: The horizontal scale shows estimated values for the year 2008.

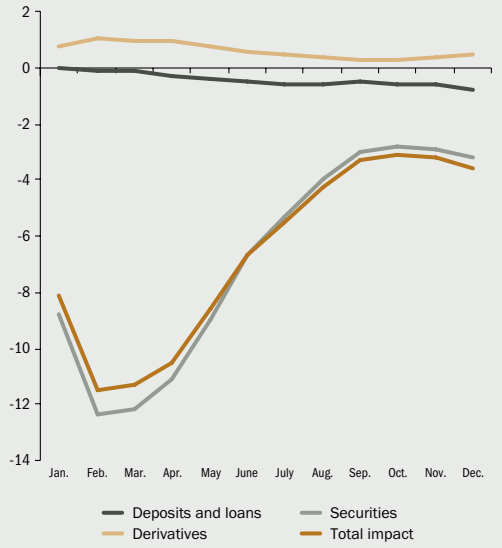
to observe a slight rise during last years, therefore another increase independent from a development of an interbank rate and the NBS rates might be expected.

When performing an interest rate risk stress testing for banking sector, an impact of a NBS base rate change was calculated separately for securities, interest rate derivates portfolio and for the portfolio of loans and deposits[44]. Two approaches were used for the calculation.

In the first approach, the profit or the loss from products which are reported in fair value and revaluated through the profit and the loss, was calculated. Regarding securities, these are instruments bought to Fair Value portfolio (hereinafter referred to as FV portfolio) and Trade portfolio. It was assumed interest rate derivates not to be used to hedge securities which are not reported in a real value therefore they were considered to the full extent in this approach, whereas it was assumed with loans and deposits to occur in the banking book.

In case of an NBS base rate increase, the value of a securities portfolio would decline cumulatively during the first three months, after this period, the impact of the shock would become moderate and a portfolio value would go up. This increase is affected both by the fact that incomes from interest would exceed a loss from evaluation and for reducing of shock influence on bond rates.

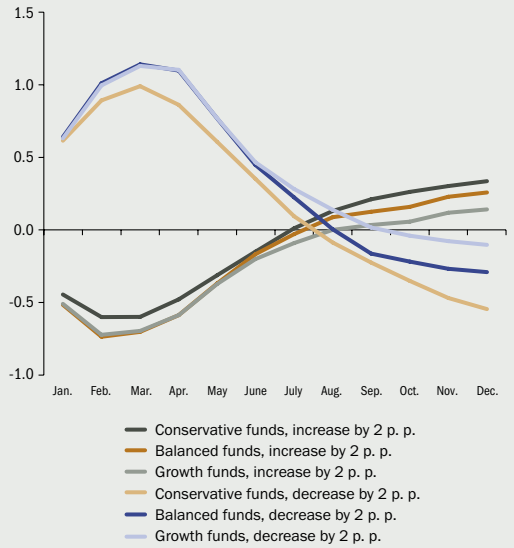
Chart 132 **Impact of the NBS rate increase on bank sector, 2nd approach (in SKK billion)**



Source: NBS, own calculations.
Note: The horizontal scale shows estimated values for the year 2008.

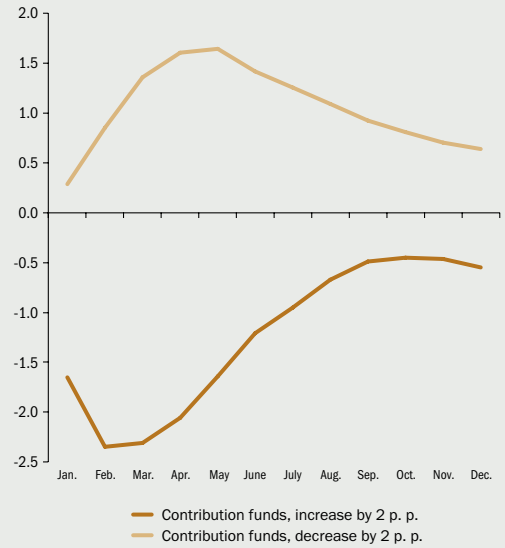
44 *Foreign banks branches were not included in stress testing.*

Chart 133 **Estimated impact of the NBS base rate change on pension funds**



Source: NBS, own calculations.
Median of a share of estimated profit/loss from revaluation and interest income change in portfolio of debt securities on NAV is on a vertical axis (calculated cumulative from the start of period). Data on increase or decrease in the chart legend means a simulated change of the NBS base rate.

Chart 134 **Estimated impact of the NBS base rate change on a supplementary pension saving fund**



Source: NBS, own calculations.
Median of a share of estimated profit/loss from evaluation and interest income change in portfolio of debt securities on NAV is on vertical axis (calculated cumulative from the start of period). Data on increase or decrease in the chart legend means a simulated change of NBS base rate.

Interest rate derivatives would respond to the shock the opposite way, which reflects the fact that these instruments serve to hedge a security portfolio against a loss. Their value would decline after increase in the first months. Total impact of the shock on the banking sector would be moderate, negative during the first nine months, whereas the sector would show moderate profit against baseline scenario at the end of the period.

A decline of NBS base rates would have a negative impact on banking sector when losses in an interest derivatives portfolio would exceed profit from securities portfolio by the end of the monitored period.

The second approach is based on the fact that banks can, where appropriate, sell even instruments that are not evaluated against profit and loss. These instruments are securities in the Avaliable For Sale portfolio (hereinafter referred to as AFS portfolio) and Held To Maturity portfolio (hereinafter reffered to as HTM portfolio) and loans and deposits. In this approach, increase of NBS base rate has an unambiguous, negative impact.

The only value to increase would be the value of interest rate derivates, which is enough only to hedge securities in the FV and AFS portfolios.

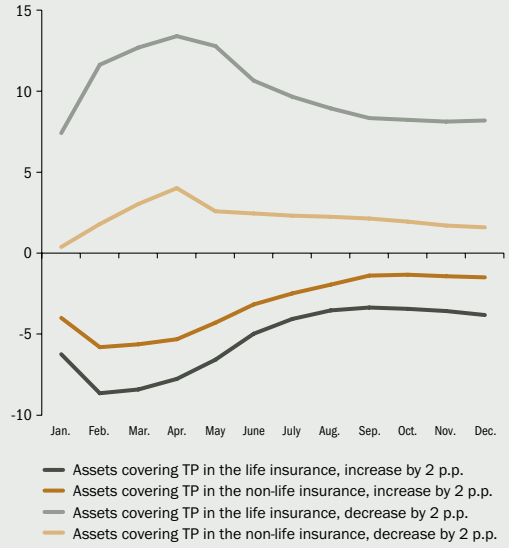
The securities portfolio value would, the same way as in the first approach, gradually decrease during the first three months, the impact of the shock would become moderate during next period, but still overcome the profit from derivates.

A deposit and loans portfolio value would be decreasing during the whole monitored period and this way cumulating the total loss of the banking sector.

Interest rate risk stress testing in funds of pension funds management companies confirms conclusions of an analysis stated in section Risks in the Financial Sector: these funds are not exposed to a significant impact of interest rate risk. A potential increase of interest rates would have a negative impact in conservative funds at approximately 0.6% of net asset value[45] within one up to two months, or 0.7% of net asset value in balanced and growth funds. This impact would become moderate due to a debt portfolios short duration (1.3 year in average, where the share of debt securities on a net asset value is 49%) in most of

45 *Data on net asset value change in this whole part express a change of net asset value affected by the NBS base rate change against the situation if this change does not come into being. In other words, an effect of a market interest rates simulated development compares without a change of NBS base rate and with considering this change.*

Chart 135 **Estimated impact of the NBS base rate change on assets covering technical provisions of insurance companies**



Source: NBS, own calculations.
Median of a share of an estimated profit/loss from revaluation and an interest income change in a debt securities portfolio on NAV is on a vertical axis (calculated cumulative from the start of a period). Data on increase or decrease in chart legend means a simulated change of the NBS base rate.
TP – technical provisions.

pension funds in rather short time due to an interest income increase from coupon debt securities. Within one year, impact of the NBS rates increase would be zero or even slightly positive (from -0.1% to 0.5% of net asset value).

Opposite impact can be expected for interest rates decrease, increase of net asset value within one up to three months and later its gradual decline in comparison with situation without a change of the NBS base rate. Within one year the impact of a shock on net asset value of pension funds would be within a range from -0.8% to 0.4%.

Investments in supplementary pension funds are exposed to a higher interest rate risk due to a higher duration of these funds (2.7 year in average) at approximately the same share of a debt securities amount on net asset value (54%). Therefore, an impact of a base interest rate change on net asset value would be more significant and take longer while an initial negative impact became moderate. With a base rate increase by 2 p.p., the impact on net asset value would be the highest within two to three months.

A change of the NBS base rate would have a rather significant impact on debt securities portfolio value in the insurance companies sector, mainly in life insurance. The reason is a high duration of debt portfolios (3.8 years in average with debt securities covering provisions in non-life insurance and 7.6 years in life insurance) and a higher share of a debt securities amount on total assets covering technical provisions (73% in non-life insurance and 79% non-life insurance) in comparison with pension funds. A change of interest income would be therefore rather insignificant in comparison with a change of a real value of these portfolios. A simulated development of interest rates increase has a bigger influence on an estimated impact, according to which an impact on long-term interest rates becomes moderate after four months approximately. However, the above-mentioned

Table 21 **Impact of macro stress testing (negative development on foreign financial markets)** **(in %)**

	Lower quartile	Median	Upper quartile
Banks	0	0	0
Insurance companies	-1	0	0
Pension funds	-5	-4	0
of which: Conservative	0	0	0
Balanced	-4	-4	-4
Growth	-5	-5	-5
Supplementary pension funds (contribution)	-3	-2	-1
Mutual funds	-9	-6	-1
of which: Equity	-25	-25	-24
Debt	-3	0	0
Mixed	-13	-7	-3
Funds of funds	-19	-18	-16

Source: NBS, own calculations.
The chart shows quartiles of share of profit or loss on assets (or technical provisions in insurance companies) a negative value means a loss.

Table 22 **VaR Values and the impact of stress scenarios on respective banks**

Capital adequancy indicators	Status to 31. 12. 2007	Share of profit on risk-weighted assets	Foreign exchange risk[1]			Interest rate risk			Market risks together	Credit risk			System risk	Concentr. risk
			VaR[2]	EUR/SKK +15 %[3]	EUR/SKK -15 %[4]	VaR[2]	Decline by 2 p.p. 1st approach[5]	Increase by 2 p.p. 2nd approach[6]	VaR[2]	1st Scenario[7]	2nd Scenario[8]	5th Scenario[9]	Default of 1 bank	Default of 1 client[10]
Lower quartile	11.1	1.2	11.3	11.2	11.1	11.1	10.9	11.1	11.1	9.9	8.5	10.1	9.6	10.3
Median	16.1	1.8	15.6	17.4	15.2	15.8	15.7	15.9	15.4	15.1	12.8	14.1	14.3	16.0
Upper quartile	21.5	2.3	21.5	21.5	21.5	20.8	21.0	21.3	20.8	21.4	17.1	18.8	18.1	21.3

Source: NBS, own calculations.
Explanations to listed values:
1) Only balance assets and liabilities (with exception of positive and negative values of derivates) and nominal values of spot and term and option transactions are entering the foreign currency position calculation
2) Capital adequacy after considering maximum loss that bank will suffer with 99 % probability within 10 working days (calculated based on historic simulation with the use of data for one year)
3) Capital adequacy after considering a revaluation at the koruna simulated depreciation against by 15%; changes of other exchange rates were estimated based on correlation in stress periods and are listed in tab. Table 19.
4) Capital adequacy after considering a revaluation at the koruna simulated appreciation against by 15%; changes of other exchange rates were estimated based on correlation in stress periods and are listed in tab. Table 19.
5) Capital adequacy after considering a change of net interest incomes and a revaluation of a debt securities portfolio and interest rate derivates reported in real value within 1 year from a base rate decline by 2 p.p.
6) Capital adequacy after considering a change of net interest incomes and evaluation of portfolio of debt securities and interest rate derivates in trading and banking book within 1 year from base rate increase by 2 p.p.
7) Credit crunch on assumption of two times more increase of defaulted credits than in 2007 (a 1-month time frame)
8) Providing credits with a higher default rate on assumption of increase of share of defaulted credits on total credits with new credits 5 times in comparison with an actual share of defaulted credits and 5-times increase of average month-to-month credit increase (a 1-month time frame)
9) Unemployment increase by 10 p.p. combined with a real estate prices decline by 50% (a 1-month time frame, an impact on retail credits is considered only)
10) Default of client, against which bank has the largest exposure, while supposing that LGD = 45%

analysis does not consider, due to a lack of detailed data, that a big portion of debt securities is in a portfolio of financial instruments held to maturity, which means they would not be revaluated to a real value at a change of yield curve.

Macro stress testing of market risks

To perform testing of a possible negative development on foreign markets, we consider the following scenario:

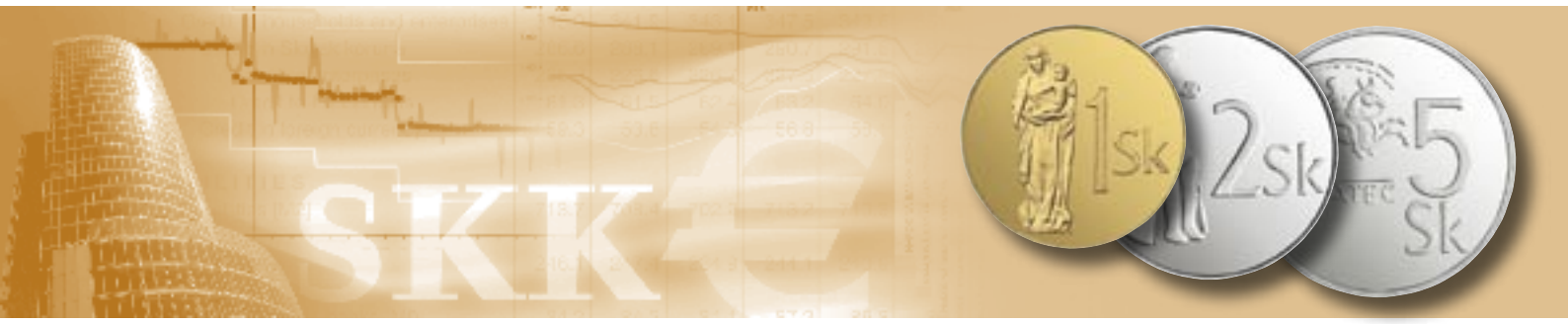
- A decline in the value of equities by 2%,
- The koruna appreciation against euro by 5% and against dollar by 6%,
- A parallel increase of dollar and euro interest rates by 1 p.p.

Changes of other exchange rates were estimated with regard to historical correlations in stress periods.

Size of decline in the value of equities came out from historic data. For example, index S&P 500 declined by 16% from July 8, 2002 to July 22, 2002 (10 working days). During the same period of time, the SKK/USD exchange rate declined by 3%. An expected growth of foreign interest rates is connected with an uncertainty occurrence and a liquidity decline on financial markets in the period of a higher volatility.

The impact of a present scenario would be significant especially for mutual funds with a higher share of equities and partly balanced and growth pension funds. What concerns mutual funds, there is a negative influence even enhanced by the koruna strengthening, since mutual funds mostly do not close their currency positions. The influence of an interest rates increase would be insignificant, it would show more significantly in some insurance companies only. This scenario would have almost no impact on banks, since their direct exposure to foreign financial markets is rather low.

Financial market infrastructure



8 Financial market infrastructure

Stock Exchange

As of December 31, 2007, Bratislava Stock Exchange (BSSE) listed 225 issues of shares and units in CIU and 122 debt securities issues on its markets. During the second half of the year 2007, no new share emission was admitted to a listing BSSE neither on a listed, nor a regulated open market, but BSSE closed trading on regulated open market with 13 share issues with a total amount of SKK 1.02 billion and with 3 issues of units with a total amount of SKK 25.75 mil.

Among new issues of debt securities in the second half of 2007, there were 13 mortage bonds issues in a total amount of SKK 7.45 billion and CZK 1 billion, 4 issues of debt securities in a total volume of SKK 2.05 billion and a registered amount of one state debt securities issue was increased by portion D in amount of SKK 1.03 billion. Within a half of the year, 5 issues of debt securities expired on a debt market in amount of SKK 4.98 billion and 2 mortage bonds issues in volume of SKK 1.5 billion.

Total market capitalization of shares, units in CIU and debt securities listed on BSSE markets accounted for SKK 609 billion as of the end of 2007, which means a growth by SKK 27.25 billion, or by 4.7%, in comparison with the end of the year 2006 , and an increase by SKK 13.55 billion, or by 2.3% in comparison with half of the year 2007. By the end of 2007, the market capitalization of capital securities recorded a year-to-year rise by 4.18% to SKK 159.41 billion. As of December 2007, the market capitalization of debt securities reached SKK 449.58 billion, which means a rise by 4.86% in comparison with the same period in 2006 and a rise by 1.13% with half year of 2007.

Within the second half of 2007, 3.066 transactions with securities were made in a total amount SKK 96.77 billion, which accounts for a decline by 84.56% in comparison with the same period of 2006 , what concerns a number of transactions together with a decrease of financial amount by 85.74%. In comparison with first half 2007, it is a decline by 35.33% in a number of transactions and a fall by 62.22% in a financial amount. By the end of the 2007, the amount of traded debt securities (SKK 96.398 billion) accounted for 99.6% of a total amount of trades closed in the second half of 2007, amount of traded capital securities (SKK 0.374 billion) was insignificant compared to the amount of traded debt securities. Direct trades which accounted for 98.9% of total trades in 2007, prevailed. In the second half of 2007, repo transactions in amount of SKK 37.56 mil. were closed, amount of repo transactions of debt securities accounted for 64.74%.

Development of the main share index of the Slovak capital market (SAX) was less volatile in the second half of 2007 in comparison with the first half of the year. The lowest value was reached in the beginning of July 2007 (409.19 points) and the highest in December 2007 (450.43 points). By the end of the year 2007, SAX value rose year-to-year by 7.23% and in comparison with a half year of 2007 showed an rose by 8.74%.

Central Securities Depository

During 2007, CSD made 29 647 transactions of securities in a total amount of SKK 433.276 billion. Most of it, 54.9%, accounted for transactions with financial compensation.

A total amount of booked-entry securities in nominal value, which were credited on owners accounts by the end of 2007, accounted for SKK 1044.66 billion, of that shares made 51.3% (SKK 535.918 billion) and debt securities 47.48% (SKK 496.031 billion). Compared to the first half of 2007, the amount of book-entry securities in nominal value rose by 1.47%. The growth in the amount of debt securities expanded by 2.7%, participated in the increment the most. A decline of amount compared to the first half of 2007, was recorded in units in CIU and cooperative units.

In the second half of 2007, CSD made transactions of securities with a financial settlement through the clearing and settlement system in a total market value SKK 62.835 billion, which means a decline by 89.6% (SKK 540.483 billion) in year-to-year comparison. The amount of transferred securities without financial settlement in nominal value was SKK 195.22 billion in 2007, which accounts for a decrease by 53.8% (SKK 227.326 billion) in year-to-year comparison.

In the second half of 2007, 86 new issues of book-entry securities were recorded in CSD in total nominal value SKK 29 billion, whereas amount in 2007 accounts for SK 129.46 billion. In monitored period, 33 issues of book-entry securities including issues changed to physical securities were cancelled in a total amount SKK 14.3 billion, whereas the amount of cancelled issues was SKK 86.362 billion in 2007.

In 2007, CSD registered 2 258 issuers of book-entry securities, to which CSD registers an issuer, and 3 059 issuers of registered physical equities, to which CSD registers a list of shareholders.

Deposit Protection Fund

The Deposit Protection Fund is authorized by statute to ensure and perform activities related to the protection of deposits of natural persons, or legal persons defined by law, hold with banks or branches of foreign banks that are participants in the deposit protection system in Slovakia. 16 banks and 1 branch of foreign bank were secured in the Deposit Protection Fund by December 2007 whereas deposits of other branches of foreign banks were secured in countries of their banking groups. Banks and branches of foreign banks are required to pay the following contributions to the fund: an initial contribution, an annual contribution and an extraordinary contribution. Based on a Bank Board of NBS (BB NBS) resolution, the amount of the annual contribution for banks and branches of foreign banks was set by the Board of the Deposit Protection Fund in 2007 at 0.2% of the amount of bank deposits protected by the Deposit Protection Act, a figure that is based on the average amount of deposits for the previous quarter, whereas the BB NBS set the amount of contribution for 2008 in a similar amount. Contributions of banks and branches of foreign banks accounted for SKK 508.97 billion for the second half of 2007 whereas in 2007, banks paid to fund annual contributions in a total amount SKK 991.22 mil., which represents 106.58% of planned amount.

In 2007, interest income from current account and term deposit and bankruptcy of Dopravná banka, a. s. accounted for the DPF income of SKK 178.2 million. The determining source of income for the Fund in 2008 shall be the annual banks contribution, the amount of which shall be estimated in total amount of SKK 1.04 billion from average amount of secured deposits.

By 2004, the Fund had paid compensation for inaccessible deposits held with the following banks: AG Banka, a.s., Slovenská kreditná banka, a.s., Dopravná banka, a.s., and Devín banka, a.s. In the bankruptcy proceeding the assets of the bankrupt Dopravná banka, in November 2007 the Additional schedule resolution of the Regional Court in Banská Bystrica was published, pursuant to which the bankrupt's creditors of third-class claims among which is also DPF, shall be satisfied pro-rated in the amount of 0.6% of their identified claims. Based on this resolution the Deposit protection fund was conceded additional SKK 14.2 million from the bankruptcy assets, i.e. the total fulfillment in favour of DPF represents a total of SKK 789.4 million, i.e. 35.5% of the DPF claim which was claimed in this bankruptcy in the amount of SKK 2.2 billion. The bankruptcy proceedings on the bankrupt's property Dopravná banka from the point of view of satisfying the DPF claims may be considered to be completed, the bankruptcy court and the receiver prepare liquidation and deletion of this company from the Companies Register.

In the bankruptcy proceeding on the bankrupt's assets Slovenská kreditná banka, the remaining part of assets is being converted into money. In the bankruptcy proceeding on the bankrupt's assets AG Banka the receiver is preparing the final report. In cases of bankruptcy of bankrupt Devín banka, a. s. the remaining part of assets is being converted into money as well as lawsuits, similar to the case of bankrupt Slovenská kreditná banka, a. s.

Overall we can state that what concerns the development of bankruptcy proceedings on the bank´s assets for which DPF paid compensation for inaccessible deposits, there has been a positive procedure development since 2004, including the first financial fulfillment in favour of DPF, and these bankruptcies are heading towards their ending. The amount of total proceeds from asset conversion into money of the remaining three bankrupts shall be influenced mainly by the level of success in lawsuits. The Deposit protection fund from unfinished bankruptcy proceedings (AG Banka, Slovenská kreditná banka and Devín banka) shall expect further satisfaction of their claims in the total amount of around SKK 1.22 billion, of which the proceeds from Devín banka bankruptcy should represent the amount of around SKK 1.1 billion. Due to paying compensation for inaccessible deposits, there have been 14 lawsuits legally finished in favour of the fund, as of December 2007 the fund noted four unfinished lawsuits due to paying compensations. For the whole period of paying compensations for inaccessible deposits since 2000, the legal court judgment was issued only in one case, based on which DPF fulfilled SKK 291.12 thousand, appurtenances and court fees.

In the second half of 2007, the National Bank of Slovakia did not announce any bank being unable to pay up deposits, so the fund was not obliged to pay compensation for inaccessible deposit of any bank. DPF further assessed the compensation payment, and it technically performs the compensation payment at

present in Devín banka, a. s., for those inaccessible deposits the payment of which were requested by the depositors within the period stipulated in Article 10 (9) of the act on deposit protection; in majority of cases this concerns the inheritance procedures. In the second half of 2007, due to this reason, DPF paid up compensation in the amount of SKK 56.72 thousand.

The company Deloitte Audit, s.r.o. was selected for performing the financial statement audit for the year 2007, based on a prior consent of the DPF Supervisory Board.

DPF continued in analyzing of possible impacts of changeover to euro to the overall system of compensation payment and provided for activities connected with preparation of euro changeover. DPF is preparing DPF system update for compensation payment for inaccessible deposits in banks in compliance with valid legislation regulations relating to euro changeover in the Slovak Republic even prior to the period of euro changeover in order for the system to be prepared for compensation payment also in euro in any period independent of euro changeover term. It closely cooperates with paying banks.

The Fund further develops international activities and cooperates mainly within the European forum of deposit insurers (EFDI) on analyzing and preparation of changes in European directive on the deposit protection system.

Investment Guarantee Fund

The investment guarantee fund collects monetary contributions from securities dealers and branches of foreign securities dealers, asset management companies and branches of foreign asset management companies for the purpose of providing compensation for inaccessible customer assets accepted by the securities dealers or foreign securities dealers, asset management company or foreign asset management company for the performance of an investment service and uses these contributions in accordance with the Securities Act. At the end of 2007, 37 entities belonged under the system of protection made by Investment Guarantee Fund.

Customer assets are protected to the extent set out in the Securities Act. The customer shall have a right for compensation from the investment guarantee fund for inaccessible customer assets which is protected according to the Securities Act, within the extent and under the conditions set out by the Securities Act. The current amount of compensation for inaccessible customer´s assets is set at EUR 20 000. The said amount is to be converted to SKK according to the exchange rate published by the National Bank of Slovakia as at the date on which the customer assets become inaccessible. In 2007 there was accessible customer assets in the sector concerning subjects belonging under the Investment guarantee fund´s customer protection system.

The annual contribution of securities dealers to the Investment Guarantee Fund for 2007 was set by the Board of the Fund as follows:

a) for a securities dealer which is authorized to provide core investment services only to the extent set out in Article 6(2)(a), (b) or (d) and which may not use the customer's funds or investment instruments when providing investment services in the amount of 0.775% of the annual amount of fees charged to customers for investment services, but not less than the amount stated in Article 84(7)(a) of the Securities Act,
b) for a securities dealer authorized to provide core investment services only to the extent set out in Article 6(2)(a), (b) or (d), in the amount of 1.625% of the annual amount of fees charged to customers for investment services, but not less than the amount stated in Article 84(7)(b) of the Securities Act,
c) for other securities dealers in the amount of 2.50% of the annual amount of fees charged to customers for investment services, but not less than the amount stated in Article 84(7)(c) of the Securities Act.

As of December 31, 2007, the Investment Guarantee Fund recorded the volume of maximum amount of compensation in case of subjects belonging under the system of IGF protection SKK 2.46 billion and the average value of maximum compensation amount for the whole sector in 2007 was SKK 2.51 billion. Total amount of customer´s assets was SKK 14.2 billion as of December 31, 2007, and the average value of customer´s assets that year was SKK 13.8 billion. From the point of view of compensation coverage/reimbursement for inaccessible customer´s assets, the Investment Guarantee fund covered around 76% of subjects individually as of December 31, 2007. From the aspect of fees, the Investment Guarantee fund collected, in a form of annual contributions in the second half of 2007, the amount of SKK 5.12 billion, and for the year 2007 the amount of SKK 11.16 million. The payment discipline of subjects belonging to the customer´s protection system of Investment Guarantee Fund was standard in 2007. The operations of Investment Guarantee Fund in 2007 was assessed by the IGF bodies as purposeful and effective. The IGF income in 2007 was made of interest of current accounts, term deposits and annual contributions from subjects belonging to the customer´s protection system of Investment Guarantee Fund. Supervisory Board of IGF during 2007 stated in their resolutions

that fund´s activities and operations is in compliance with generally binding legal regulations, as well as the Statutes of Investment Guarantee Fund.

Slovak Insurer´s Bureau

The Slovak Insurers' Bureau (SIB) is an association of insurance companies that are authorized to provide motor third party liability insurance in Slovakia. SIB has 9 members at present time.

The Insurance Guarantee Fund comprises contributions made by the Bureau's members, extraordinary contributions, and premium defined in the Act on motor third party liability insurance. The annual contribution is set as a percentage based on the number of insured motor vehicles for the previous calendar quarter.

Tables

9 Tables

9.1 Information on the structure of the financial market

Data on numbers of institutions

Table 23 **Number of financial institutions**

	Number of institutions as at 31. 12. 2007	Number of institutions as at 31. 12. 2006	Change
Number of banks in the SR	16	17	-1
of which: building societies	3	3	0
banks holding mortgage license	8	9	-1
other banks	5	5	0
Number of branches of foreign banks in the SR	10	7	3
of which: on the basis of an NBS license	1	1	0
on the single banking passport principle	9	6	3
of which: branches of foreign banks holding mortgage license	1	1	0
Number of branches of foreign banks contributing to Deposit Protection Fund	2	2	0
Number of foreign bank representative offices in the SR	9	10	-1
Number of branches (organizational units) of banks in the SR	738	715	23
Number of lower organizational units in the SR	431	460	-29
Number of branches of Slovak banks in other countries	1	1	0
Number of Slovak banks' representative offices in other countries	1	1	0
Number of foreign entities freely providing cross-border banking services	190	131	59
of which: banks	178	123	55
electronic money institutions	6	3	3
foreign financial institutions	4	3	1
credit unions	2	2	0
Slovak banks providing free cross-border banking services abroad	1	1	0
of which: electronic-money institutions	0	0	0
Number of employees of banks and branches of foreign banks	19,779	19,525	274
Number of insurance companies in the SR	23	24	-1
of which: insurance companies providing only life insurance	5	5	0
insurance companies providing only non-life insurance	5	6	-1
insurance companies providing both life and non-life insurance	13	13	0
Insurance companies providing services on the basis of the freedom to provide services	370	296	74
of which: Without establishing a branch	360	289	71
of which: Via a branch	10	7	+3
Number of insurance companies in the SR providing statutory automobile liability insurance	9	9	0
Number of pension fund management companies	6	6	0
Number of supplementary pension companies	5	3	2
Number of supplementary pension insurance companies	0	1	-1
Number of domestic asset management companies in the SR	10	10	0
of which: asset management companies with an extended license under § 3 (3) of Act on Collective Investment (ACI)	6	7	-1

Table 23 **Number of financial institutions (continued)**

	Number of institutions as at 31. 12. 2007	Number of institutions as at 31. 12. 2006	Change
Number of domestic mutual funds:	118	109	9
of which: open mutual funds	72	62	10
closed mutual funds	41	44	-3
special mutual funds	5	3	2
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	0	2	-2
without establishing a branch	2	1	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:	43	21	22
Of which: with establishing branch of foreign asset management companies according to Section 28 of ACI	2	0	2
foreign asset management companies without establishing branch according to Section 29 of ACI	10	5	5
European Funds according to Section 61 – foreign asset management companies	11	7	4
– foreign investment companies	19	14	5
within which: number of foreign mutual funds and sub-funds of foreign investment companies	617	360	257
Number of foreign asset management companies providing services according to Section 3 (3) of ACI	11	5	6
Number of securities dealers	32	33	-1
of which: banks and branches of foreign banks – securities brokers with license from NBS	13	14	-1
branches of foreign banks – securities brokers with license from domestic authority	6	4	2
Number of foreign entities operating in the SR as securities dealers	582	304	278
of which: via branch in the SR	3	2	1
without establishing a branch	579	302	277
Number of Slovak securities dealers providing services abroad	7	7	0
Number of investment service brokers in the SR:	937	888	49
of which: juristic persons	61	55	6
natural persons	876	833	43

Source: NBS.

Banking sector and securities dealers

National Bank of Slovakia in its resolution dated January 15, 2007 granted prior consent to the merger of UniBanka, a. s. and HVB Bank Slovakia, a. s. Based on a contract dated April 1, 2007, the company UniBanka, a. s. took over all rights and obligations of the dissolved company HVB Bank Slovakia a. s. As of April 1, 2007 the company changed its business name from the previous UniBanka, a. s. to a new business name UniCredit Bank Slovakia a. s.

On June 5, 2007 National Bank of Slovakia granted a prior consent to the company PENTA INVESTMENTS LIMITID, Cyprus for exceeding the 66% share of capital and voting rights in Privatbanka, a. s. The above-mentioned company, as of September 30, 2007, based on this consent, owned a share of 93.1% on the capital of Privatbanka, a. s.

National Bank of Slovakia in its resolution dated September 18, 2007 granted prior consent to the company ISTROKAPITAL SE, Cyprus for exceeding the 66% share of capital and voting rights in Poštová banka, a. s. The above-mentioned company, as of September 31, 2007 based on this consent, owned a share of 93.811% on the capital of Poštová banka, a. s.

In its decision the National Bank of Slovakia on October 30, 2007 granted a license of providing investment services to a new securities brokers, the company CAPITAL MARKETS, o. c. p., a. s. This company was established on the date of its entry into Companies Register on January 1, 2008.

National Bank of Slovakia granted a bank licence to Československá obchodná banka, a. s. dated November 19, 2007. This new subject started its activities on the Slovak finance market from January 1, 2008 instead of Československá obchodní banka, a. s., a branch of a foreign bank in Slovakia.

In 2007, the following companies started to perform banking activities by means of their branches, based on a notice; Fio, consumer´s cooperative, organisation unit of a foreign person (from March 15, 2007), ABN AMRO Bank N. V., branch of a foreign bank (from May 15, 2007) and BRE Bank SA, branch of a foreign bank mBank in the Slovak Republic from November 9, 2007).

Collective investment sector

On May 22, 2007, National Bank of Slovakia granted a permission to company Allianz Asset Management, správ. spol. (asset management company), a. s., for establishing and activity of asset management company.

The company OTP Asset Management, správ. spol., a. s. decided to terminate its activities in 2007, the first step performed was the transfer the management of their open-end mutual funds to the company Investičná a Dôchodková, správ. spol., a. s. (decision dated April 27, 2007) and later was dissolved by merging with company Investičná a Dôchodková, správ. spol., a. s. (decision dated May 23, 2007).

On December 13, 2007 the company VERITAS SG INVESTMENT TRUST GmbH was granted a prior consent for license return in accordance with Section 75 of the Collective Investment Act.

Insurance sector

On October 22, 2007 the company ING Životná poisťovňa, a. s. was granted a prior consent of National Bank of Slovakia for merging with the company ING Management Services Slovensko spol. s r. o.

On July 31, 2007 based on a request, the company HDI Hannover Versicherung Aktiengesellschaft was granted a prior consent for acquiring share of capital of the company POISŤOVŇA HDI-GERLING Slovensko, a. s., for the first time exceeding the 66% share on the insurance company´s capital.

Based on a request, the company Assicurazioni Generali S. p. A. Was granted prior consent for acquiring 100% share on capital of company Generali Poisťovňa, a. s. on November 14, 2007.

Pension savings

By the decision of NBS dated May 7, 2007 the NBS license was granted for establishment and operations of a supplementary pension company AEGON, d. d. s., a. s.

By the decision dated December 13, 2007, the National Bank of Slovakia granted prior consent to the company Winterthur Life, Switzerland for AXA d. d. s., a.s. to become a daughter company of Winterthur Life in a way that AXA d. d. s., .a.s. merges with AXA Slovensko a. s.

Data on the ownership structure of supervised institutions

Table 24 **Individual countries' shares in the registered capital of individual types of financial institutions as at 31. 12. 2007** **(in %)**

	Banks	Insurance companies[1]	Pension fund management companies	Supplementary pension companies	Asset management companies[1]	Securities dealers[1]
Slovakia	8.16	8.09	41.3	27.4	82.1	3.50
EU states (excl. SR)	88.45	90.04	22.2	42.2	17.9	92.69
Czech Republic	7.16	1.13	5.7			6.63
France	0.57	1.23				0.65
Netherlands	1.25	13.14	16.5	41.8		1.44
Luxembourg	25.72					28.91
Hungary	4.12	3.21				4.63
Germany	1.77	3.21				
Austria	41.24	55.78				42.90
Italy	0.12					0.13
Portugal	0.14					
United Kingdom	0.07	7.51				0.09
Other	6.29	4.83		0.4	17.9	
Countries outside EU	3.41	2.63	36.5	30.4		3.81

Source: NBS.
Data in the table represent individual countries' shares in the registered capital of financial institutions according to the prime owner.
1) Data for December 2006.

9.2 Analytical data

Banks and branches of foreign banks

Table 25 **Asset and liability structure of banks and branches of foreign banks (in thous. SKK)**

	Total volume (as at 31. 12. 2007)	Share of a foreign currency	Y/y change	Share of balance sheet total	CR3	CR5	HHI
ASSETS TOTAL (gross)	1,720,129,027	16%	17%	100%	50%	68%	1,093
TOTAL LOANS TO CUSTOMERS	827,920,048	24%	24%	48%	50%	67%	1,085
Loans to retail	305,409,534	3%	28%	18%	61%	82%	1,587
of which: Loans to households	283,230,115	3%	28%	16%	62%	83%	1,628
Loans to enterprises	400,698,584	34%	22%	23%	48%	68%	1,088
Loans to non-banking financial companies	67,105,345	26%	5%	4%	45%	66%	1,054
Loans to general government	23,132,325	34%	22%	1%	73%	83%	3,676
Loans to non-residents	31,574,260	75%	75%	2%	50%	74%	1,261
TOTAL INTERBANK MARKET OPERATIONS	497,423,641	8%	24%	29%	45%	66%	1,068
of which: Operations with the NBS and foreign CB (incl. NBS bills)	393,986,809	0%	31%	23%	49%	67%	1,165
TOTAL SECURITIES	323,708,351	11%	-2%	19%	75%	82%	2,032
Securities issued by residents	270,887,330	5%	0%	16%	78%	84%	2,158
Government bonds	208,595,397	6%	0%	12%	77%	84%	2,306
Corporate bonds	5,536,850	13%	-21%	0%	75%	97%	2,355
Bank bonds	25,373,606	0%	2%	1%	69%	83%	1,959
Other debt securities	23,093,590	0%	0%	1%	100%	100%	10,000
Asset securities	8,287,887	0%	46%	0%	82%	94%	3,081
Securities issued by non-residents	33,774,530	63%	22%	2%	78%	88%	2,688
Debt securities	30,224,718	62%	17%	2%	77%	87%	2,731
of which: issued by banks	14,453,838	36%	11%	1%	87%	95%	3,142
of which: issued by general government	1,399,178	100%	-48%	0%	85%	100%	2,660
of which: other issuers	14,371,702	85%	43%	1%	79%	94%	3,615
Asset securities	3,549,812	73%	94%	0%	98%	100%	3,673
of which: issued by banks	600,169	98%	2767%	0%	100%	100%	7,463
of which: other issuers	2,949,643	68%	63%	0%	99%	100%	4,726
Derivatives – positive fair value	19,046,491	0%	-37%	1%	66%	85%	1,791
TOTAL LIABILITIES	1,660,416,761	24%	18%	100%	50%	68%	1,085
TOTAL DEPOSITS AND LOANS FROM CUSTOMERS	1,060,352,668	21%	15%	64%	58%	72%	1,295
of which: deposits insured at the Deposit Protection	549,264,535	9%	14%	33%	62%	75%	1,573
Deposits and loans accepted from the retail	517,965,263	8%	14%	31%	63%	75%	1,625
Deposits and loans accepted from households	475,445,407	8%	14%	29%	62%	76%	1,643
Deposits and loans accepted from enterprises	316,337,831	19%	9%	19%	55%	74%	1,480
Deposits and loans accepted from fin. co's other than banks	88,134,818	8%	15%	5%	48%	73%	1,195
Deposits and loans accepted from general government	111,884,504	28%	28%	7%	75%	90%	2,280
Deposits and loans accepted from non-residents	26,030,252	44%	60%	2%	54%	67%	1,188
TOTAL SOURCES FROM BANKS	309,718,311	73%	45%	19%	55%	68%	1,266
Sources from the NBS and foreign issuing banks	2,754,638	0%	-16%	0%	98%	100%	8,224
Sources from non-resident banks	277,832,059	79%	63%	17%	60%	72%	1,455
TOTAL SECURITIES ISSUED	133,621,935	13%	8%	8%	61%	79%	1,590
Mortgage bonds	81,240,969	19%	25%	5%	70%	84%	2,070
Bills of exchange	21,790,557	7%	4%	1%	70%	93%	1,962
Other securities issued	9,981,174	3%	58%	1%	90%	100%	4,180
Derivatives – negative fair value	20,609,235	0%	-34%	1%	69%	85%	1,903

Table 25 **Asset and liability structure of banks and branches of foreign banks (in thous. SKK)**

	Total volume (as at 31. 12. 2007)	Share of a foreign currency	Y/y change	Share of balance sheet total	CR3	CR5	HHI
Risk-weighted assets of the banking book	728,375,769		23%	44%	62%	76%	1,476
Risk-weighted assets of the trading book	18,864,148		-4%	1%	73%	88%	2,420
Other risk-weighted assets	1,119,153		-70%	0%	66%	88%	1,930
Own funds	95,657,515		20%	6%	49%	68%	1,123

Source: NBS.
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.

Table 26 **Revenues and expenditures of banks and branches of foreign banks (in thous. SKK)**

		Value (as at 31. 12. 2007)	Value (as at 31. 12. 2006)	CR3	CR5	HHI
(a)	TOTAL OPERATING COSTS (b + e + f)	33,726,588	30,040,716	58%	71%	1,298
(b)	Administrative costs (c + d)	28,298,469	25,724,828	56%	70%	1,262
(c)	Purchased performances	14,001,936	12,177,498	55%	69%	1,250
(d)	Staffing costs	14,296,533	13,547,330	57%	71%	1,284
(e)	Depreciation/amortization of movable and immovable assets	4,617,809	4,116,558	64%	76%	1,525
(f)	Taxes and fees	810,310	199,330	86%	92%	2,782
(g)	GROSS INCOME (h + l)	56,969,425	55,081,640	59%	74%	1,363
(h)	Net interest income (j – i)	40,100,154	34,591,970	60%	73%	1,414
(i)	Interest expenses	42,053,434	33,456,498	47%	66%	1,071
(j)	Interest income	82,153,588	68,048,468	52%	69%	1,186
(k)	of which: Interest income from securities	15,231,005	12,636,611	69%	81%	1,805
(l)	Net non-interest income (m + n + o + p)	16,869,271	20,489,670	57%	74%	1,416
(m)	Revenue from shares and ownership interests	272,019	456,330	98%	100%	5,379
(n)	Net income from fees	12,356,381	11,250,599	66%	78%	1,623
(o)	Net income from trading	7,337,605	7,463,565			
(p)	Other net operating incomes	-,3,096,734	1,319,176			
(q)	NET INCOME (g – a)	23,242,837	25,040,924	62%	77%	1,478
(r)	Net creation of provisons and net income from depreciation of recievables	2,183,412	2,496,483			
(s)	Net creation of reserves	-,152,744	146,591			
(t)	NET PRE-TAX PROFIT (q – r – s)	21,212,169	22,397,850	62%	77%	1,466
(u)	Extraordinary profit	0	0			
(v)	Income tax	3,658,862	4,622,047	64%	80%	1,743
(w)	NET PROFIT AFTER TAX (t + u – v)	17,553,307	17,775,803	61%	76%	1,454

Source: NBS.
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.

Table 27 **Profitability indicators of banks and branches of foreign banks and their distribution in the banking sector** **(in %)**

	Denominator- weighted average (31. 12. 2007)	Denominator weighted average (31. 12. 2006)	Average weighted by the volume of assets	Minimum	Lower quartile	Median	Upper quartile	Maximum
ROA	1.13	1.27	1.04	-129.19	0.37 (3)	0.69 (24)	1.13 (15)	1.83 (58)
ROE (excl. branches)	16.45	22.34	18.70	2.77	7.32 (4)	11.75 (5)	15.28 (19)	24.30 (52)
Cost-to-income ratio	59.20	54.54	60.15	-1425.83	53.96 (13)	59.63 (59)	73.00 (20)	138.65 (8)
Relative significance of interest incomes	70.39	62.80	67.78	0.00	52.07 (10)	68.90 (30)	83.27 (50)	112.89 (10)
Net interest spread	2.27	2.34	2.27	-0.06	0.42 (10)	1.84 (22)	2.70 (42)	10.19 (26)
retail	4.95	5.81	8.84	0.12	2.70 (8)	3.8 (22)	5.88 (38)	700.00 (31)
corporates	2.76	2.73	2.87	-25.77	1.58 (20)	3.28 (6)	3.98 (55)	5.61 (17)
financial companies	0.78	0.63	1.55	-2.20	0.39 (29)	1.07 (17)	1.78 (22)	13.39 (25)
banks including the NBS and bills	0.03	0.08	-0.35	-3.71	-1.09 (23)	-0.01 (18)	0.76 (47)	3.68 (11)
Net interest margin	2.36	2.42	2.34	-0.08	0.68 (9)	2.03 (24)	2.69 (25)	10.09 (43)

Source: NBS.
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.

Table 28 **Risk and capital adequacy indicators of banks and branches of foreign banks and their distribution in the banking sector** **(in %)**

	Denominator--weighted average (31. 12. 2007)	Denominator--weighted average (31. 12. 2006)	Average weighted by volume of assets	Minimum	Lower quartile	Median	Upper quartile	Maximum	Number of breaches
CREDIT RISK									
Share of defaulted loans in the total volume of loans to customers	2.77	3.26	2.67	0.00	0.00 (10)	1.64 (41)	4.23 (33)	15.23 (17)	
Retail (share in loans to retail)	3.59	3.30	3.29	0.00	0.05 (9)	1.51 (34)	6.22 (30)	25.16 (27)	
Corporates (share in loans to corporates)	2.86	4.00	2.53	0.00	0.00 (13)	1.23 (9)	3.13 (60)	15.27 (17)	
Financial companies (share in loans to financial companies)	0.04	0.10	0.05	0.00	0.00 (67)	0.00 (0)	0.00 (0)	1.82 (28)	
Share of provisions in the volume of defaulted loans to customers	93.30	101.68	110.82	40.09	75.88 (10)	93.31 (29)	113.17 (17)	329.07 (35)	
Large asset exposure (weighted)/ own funds (excl. branches)	194.91	216.43	218.14	0.00	135.52 (5)	231.20 (45)	287.09 (22)	405.32 (8)	
Large asset exposure within groups (number of breaches)									2
Share of claimable value of securities in the total volume of defaulted loans to customers	36.15	23.45	31.01	0.00	20.28 (20)	32.10 (38)	47.85 (23)	100.53 (9)	

Table 28 **Risk and capital adequacy indicators of banks and branches of foreign banks and their distribution in the banking sector (continued)** **(in %)**

	Denominator-weighted average (31. 12. 2007)	Denominator-weighted average (31. 12. 2006)	Average weighted by volume of assets	Minimum	Lower quartile	Median	Upper quartile	Maximum	Number of breaches
FOREIGN EXCHANGE RISK									
Forex open balance-sheet position/ own funds (excl. branches)	-12.47	0.49	-18.96	-113.47	-7.76 (36)	-0.33 (10)	10.22 (10)	143.28 (23)	
Forex open off-balance-sheet position/own funds (excl. branches)	16.63	37.04	24.71	-241.26	-64.27 (15)	0.00 (27)	14.51 (3)	173.93 (35)	
Total forex open position/own funds (excl. branches)	4.16	37.53	5.75	-154.62	-30.58 (31)	-0.19 (10)	21.94 (2)	113.82 (37)	
Total forex open position/own funds (excl. branches)	-37.06	37.45							
INTEREST RATE RISK									
Total interest-rate open position up to 1 month/own funds (excl. branches)	-121.22	-63.92	-121.21	-668.01	-299.40 (25)	-96.39 (11)	12.09 (7)	270.68 (37)	
Total interest-rate open position up to 1 year/own funds (excl. branches)	-74.45	-52.25	-73.33	-408.67	-87.63 (27)	-45.08 (23)	12.17 (26)	211.33 (5)	
Total interest-rate open position up to 5 years/own funds (excl. branches)	-18.63	7.22	-23.89	-677.58	-46.14 (27)	15.77 (36)	51.95 (10)	243.91 (7)	
LIQUIDITY RISK									
Share of immediately liquid assets in highly volatile funds	17.71	12.54	1053.72	0.63	2.83 (10)	7.50 (29)	22.80 (42)	147 700 (15)	
Share of liquid assets (incl. collateral from reverse repo trades) in volatile funds	55.19	50.30	93.28	0.21	32.57 (8)	47.03 (28)	82.50 (45)	4 086.05 (19)	
Indicator of fixed and illiquid assets (excl. branches)	45.84	44.31	50.65	5.35	19.40 (4)	37.40 (26)	63.77 (10)	82.92 (40)	0
Share of loans in deposits and issued securities	69.34	63.67	84.63	2.54	60.44 (25)	82.53 (53)	102.74 (16)	973.47 (7)	
Total liquidity position current up to 7 days/assets	-46.99	-38.54	-47.02	-76.47	-51.11 (49)	-32.13 (31)	-2.47 (14)	100.00 (6)	
Total liquidity position estimated up to 7 days/assets	-16.61	-4.38	-13.65	-76.47	-25.63 (36)	-5.31 (25)	1.65 (20)	100.00 (19)	
Total liquidity position current up to 3 months/assets	-47.12	-43.24	-47.08	-80.68	-52.67 (42)	-32.95 (36)	-8.97 (12)	100.00 (9)	
Total liquidity position estimated up to 3 months/assets	-12.47	-9.17	-12.50	-76.47	-20.82 (25)	-9.35 (36)	2.20 (20)	100.00 (20)	
CAPITAL ADEQUACY									
Capital adequacy ratio (excl. branches)	12.78	12.98	12.47	9.25	11.14 (52)	16.09 (17)	21.50 (8)	51.28 (2)	0
Share of Tier I in own funds (excl. branches)	87.75	94.42	85.87	66.67	76.96 (7)	92.21 (52)	99.72 (16)	100.00 (5)	
Share of own funds in balance-sheet total (excl. branches)	10.65	6.96	7.19	4.86	5.94 (42)	8.46 (26)	11.66 (7)	48.51 (5)	
Share of potential loss in own funds in reaching 8% capital adequacy (excl. branches)	40.34	32.09	31.56	13.47	27.96 (52)	50.26 (17)	64.73 (5)	100.00 (5)	

Source: NBS.
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.

Insurance companies

Table 29 **Net profit and profitability indicators of insurance companies** **(in thous. SKK)**

	Value as at 31.12.2007	Value as at 31.12.2006	Y/y change	Share in total written premium
Total net profit	5,572,120	4,463,660	23.73%	9.71%
ROA	3.42%	3.07%		
ROE	17.56%	15.99%		

Source: NBS.

Table 30 **Technical premium** **(in thous. SKK)**

	Value as at 31. 12. 2007	Value as at 31. 12. 2006	Y/y change	Share in total written premium	CR3	HHI 31. 12. 2007	HHI 31. 12. 2006
Total	57,357,720	53,601,595	7.01%	100.00%	61%	1748	1889
Life insurance	28,497,391	25,349,243	12.42%	49.68%	57%	1450	1581
Whole life and endowment assurance (A1)	18,028,103	16,760,100	7.57%	31.43%	64%	1650	1723
Insurance connected with an investment fund (A4)	6,644,391	5,173,038	28.44%	11.58%	59%	1577	1954
Accident or sickness insurance (A6)	3,105,160	2,667,926	16.39%	5.41%	70%	1770	1800
Other	719,738	748,179	-3.80%	1.25%	88%	4253	3263
Non-life insurance	28,860,329	28,252,352	2.15%	50.32%	73%	2335	2435
Automobile liability insurance (B10a)	9,690,052	9,740,670	-0.52%	16.89%	80%	2715	2873
Motor-hull insurance (B3)	8,800,192	8,222,664	7.02%	15.34%	78%	2396	2447
Property damage insurance (B8+B9)	6,355,686	6,236,000	1.92%	11.08%	73%	2594	2694
Other	4,014,399	4,053,018	-0.95%	7.00%	63%	1779	1738

Source: NBS.
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.

Table 31 **Technical premium ceded to reinsurers** **(in thous. SKK)**

	Value as at 31. 12. 2007	Value as at 31. 12. 2006	Y/y change	Share in total written premium
Total	9,706,267	10,236,681	-5.18%	16.92%
Life insurance	1,263,982	1,375,165	-8.09%	4.44%
Non-life insurance	8,442,285	8,861,516	-4.73%	29.25%

Source: NBS.

Table 32 **Technical indemnity costs** **(in thousands SKK)**

	Value as at 31. 12. 2007	Value as at 31. 12. 2006	Y/y change	Share in total written premium	CR3	HHI 31. 12. 2007	HHI 31. 12. 2006
Total	23,926,600	21,198,896	12.87%	42%	68%	2099	2573
Life insurance	10,730,542	9,374,002	14.47%	19%	69%	2090	3806
Whole life and endowment assurance (A1)	8,587,057	7,500,440	14.49%	15%	73%	2297	4146
Insurance connected with an investment fund (A4)	998,617	832,574	19.94%	2%	88%	3432	6420
Accident or sickness insurance (A6)	593,756	556,269	6.74%	1%	70%	2079	2292
Other	551,113	484,719	13.70%	1%	91%	4765	6978
Non-life insurance	13,196,058	11,824,894	11.60%	23%	77%	2466	2488
Automobile liability insurance (B10a)	4,139,237	3,648,460	13.45%	7%	82%	2781	2837
Motor-hull insurance (B3)	5,770,010	5,407,483	6.70%	10%	78%	2349	2315
Property damage insurance (B8+B9)	2,259,684	1,861,402	21.40%	4%	86%	3237	3169
Other	1,027,128	907,549	13.18%	2%	70%	2178	2481

Source: NBS.
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.

Table 33 **Loss ratio in non-life insurance** **(in %)**

	Values as at 31. 12. 2007	Values as at 31. 12. 2006
Total	48.47	45.84
Automobile liability insurance (B10a)	48.50	38.22
Motor-hull insurance (B3)	67.71	71.59
Property damage insurance (B8+B9)	35.85	37.25
Other	24.69	22.08

Source: NBS.

Table 34 **Technical provisions structure of insurance companies** **(in thousands SKK)**

	Value as at 31.1 2. 2007	Value as at 31. 12. 2006	Y/y change	Share in total provisions
Total	113,518,953	103,834,889	9.33%	100.00%
Life insurance	70,670,128	65,787,827	7.42%	62.25%
Reserve for covering payables from financial placement on behalf of the insured	14,183,938	9,695,604	46.29%	12.49%
Non-life insurance	28,664,888	28,351,458	1.11%	25.25%

Source: NBS.
Poznámka: Do výpočtu CR 3 a,HHI vstupujú iba inštitúcie, v,ktorých je hodnota danej položky kladná. Pri rovnakej hodnote podielu všetkých inštitúcií by pri počte 24 inštitúcií bola hodnota HHI 417.

Table 35 **Placement of insurance companies' technical provisions of except for provisions for covering payables from financial placement on behalf of the insured (in thousands SKK)**

	Value as at 31. 12. 2007	Value as at 31. 12. 2006	Y/y change	Share in total provisions
Total	107.115.321	99.358.737	7.81%	107.83%
Government and central bank bonds of SR/EU states or guaranteed by the SR, EIB, EBRD and IBRD bonds	44.508.888	45.801.988	-2.82%	44.81%
Bank bonds	15.313.520	13.828.804	10.74%	15.42%
Term accounts at banks	8.860.643	8.337.880	6.27%	8.92%
Mortgage bonds	14.123.737	11.735.595	20.35%	14.22%
Reinsurance	9.456.602	8.894.525	6.32%	9.52%
Other	14.851.931	10.759.945	38.03%	14.95%

Source: NBS.
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.

Old-age pension saving

Table 36 **Pension fund management companies as at k 31. 12. 2007 (in thous. SKK)**

	Market share[1]	NAV of funds	Number of customers
Allianz – Slovenská DSS	31%	15,702,546	467,117
Axa DSS	28%	14,299,571	416,143
VÚB Generali DSS	15%	7,483,565	204,610
ING DSS	11%	5,595,326	161,627
AEGON DSS	10%	5,336,563	205,493
ČSOB DSS	6%	2,874,232	103,660

Source: NBS.
1) 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

Table 37 **Economic result of pension fund management companies as at 31. 12. 2007 (in thous. SKK)**

	Revenues	Expenditures	Profit/loss	ROA	ROE
Allianz – Slovenská DSS	182,424	503,106	-320,682	-24%	-24%
Axa DSS	175,594	308,997	-133,403	-6%	-6%
VÚB Generali DSS	101545	89,059	12,486	4%	4%
ING DSS	71,217	171,143	-99,926	-16%	-17%
AEGON DSS	89,023	45,323	43,700	12%	12%
ČSOB DSS	35,790	77,296	-41,506	-10%	-10%

Source: NBS.

Table 38 **Pension funds (k 31. 12. 2007) (in thous. SKK)**

	NAV as at 31. 12. 2007
Total	51,291,803
Conservative	2,121,844
Balanced	15,571,608
Growth	33,598,351

Source: NBS.
NAV – Net Asset Value

Table 39 **Structure of pension funds' investment of** **(in thous. SKK)**

	Value as at 31. 12. 2007	Share of EUR	Share of other foreign currencies
Total	51,291,803	4.64%	4.15%
Accounts at banks	15,636,735	8.24%	2.35%
Bonds	25,424,830	4.68%	4.56%
Shares	7,741,213	55.63%	44.25%
Other	12,962,397	12.88%	10.48%
Payables	-10,473,372	58.03%	39.94%

Source: NBS.

Table 40 **Supplementary pension companies as at 31. 12. 2007** **(in thous. SKK)**

	Market share[1]	NAV of funds	Number of customers
ING Tatry – Sympatia, d.d.s., a.s.	40%	10,094,273	327,068
Doplnková dôchodková spoločnosť Tatra banky, a.s.	28%	6,980,959	204,996
Stabilita, d.d.s., a.s	20%	4,979,894	120,091
Axa d.d.s., a.s.	13%	3,272,132	139,669
AEGON d.d.s., a.s.	0%	2,016	544

Source: NBS.
1) 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

Table 41 **Economic result of supplementary pension companies as at 31.12.2007** **(in thous. SKK)**

	Revenues	Expenses	Profit/loss	ROA	ROE
ING Tatry – Sympatia, d.d.s., a.s.	309,743	261,765	47,978	13%	21%
Doplnková dôchodková spoločnosť Tatra banky, a.s.	125,221	85,958	39,263	22%	38%
Stabilita, d.d.s., a.s	102,501	84,634	17,867	18%	24%
Axa d.d.s., a.s.	71,683	80,918	-9,235	-8%	-9%
AEGON d.d.s., a.s.	1,099	10,162	-9,063	-14%	-15%

Source: NBS.

Table 42 **Supplementary pension funds** **(in thous. SKK)**

	NAV as at 31. 12. 2007
Total	25,329,275
Contribution	24,551,244
Payroll	778,030

Source: NBS.
NAV – Net Asset Value

Table 43 **Investment structure of supplementary pension funds** **(in thous. SKK)**

	Value as at 31. 12. 2007	Share of EUR	Share of other foreign currencies
Total	25,329,275	2.61%	2.12%
Accounts at banks	13,185,791	2.29%	2.78%
Bonds	13,751,584	2.92%	1.61%
Shares	797,807	49.85%	41.00%
Other	1,419,479	10.57%	2.89%
Liabilities	-3,825,386	15.41%	10.92%

Source: NBS.

Collective investment

Table 44 **Asset management companies as at 31. 12. 2007** **(in thous. SKK)**

Asset management company	NAV of mutual funds	Market share
Total	133,859,613	100.00%
Tatra Asset Management	55,623,013	41.55%
Asset Management SLSP	32,786,292	24.49%
VÚB Asset Management	29,175,921	21.80%
ČSOB Asset Management	6,521,156	4.87%
Prvá penzijná	3,952,339	2.95%
ISTRO Asset Management	2,062,407	1.54%
AIG Funds Central Europe	2,034,120	1.52%
Investičná a Dôchodková	698,978	0.52%
KD Investments	554,325	0.41%
Allianz Asset Management	451,062	0.34%

Source: NBS.
NAV – Net Asset Value

Table 45 **Expenditure, revenues and profitability indicators of domestic asset management companies as at 31. 12. 2007** **(in thous. SKK)**

Správcovská spoločnosť	Revenues	Expenses	Profit/loss	ROA[1]	ROE[1]
Spolu	1,778,671	1,470,170	308,501	18%	22%
AIG Funds Central Europe	46,799	47,607	-808	-1%	-1%
Allianz Asset Management	5,590	17,917	-12327	-8%	-9%
Asset Management SLSP	400,570	359,838	40,732	16%	28%
ČSOB Asset Management	203,572	132,025	71,547	30%	34%
Investičná a dôchodková	20,495	20,318	177	0%	0%
Istro Asset Management	N.A,	N.A,	N.A,	N.A,	N.A,
KD Investments	14,059	29,697	-15,638	-25%	-27%
Prvá Penzijná	67,959	51,776	16,183	11%	16%
Tatra Asset Management	698,830	519,924	178,906	31%	35%
VÚB Asset Management	320,797	291,068	29,729	23%	30%

Source: NBS.
1) Values of ROE and ROA were annualized.

Table 46 **Structure of mutual funds as at 31. 12. 2007** **(in thous. SKK)**

Fund type	Market share	Net asset value	Number of funds	CR3[1]	CR5[1]	HHI[1]	HHI if uniform distribution
Total mutual funds	100%	162,011,400	558	33%	40%	457	18
Domestic	82.62%	133,859,613	118	39%	47%	632	85
Money market funds	39.22%	63,547,069	12	83%	94%	2,366	833
Bond funds	11.08%	17,952,638	14	67%	86%	1,910	714
Equity funds	3.84%	6,227,696	10	87%	94%	3,512	1,000
Mixed funds	8.46%	13,699,585	15	53%	72%	1,359	667
Funds of funds	11.57%	18,736,807	16	53%	78%	1,357	625
Other funds	5.34%	8,652,110	5	90%	100%	3,194	2,000
Special funds	0.47%	763,175	1	100%	100%	10,000	10,000
Real estate funds	2.09%	3,384,984	4	95%	100%	3,477	2,500
Closed funds	0.55%	895,549	41	27%	40%	467	244
Foreign[2]	17.38%	28,151,787	440	22%	29%	266	23
Money market funds	2.58%	4,174,448	25	82%	91%	4,667	400
Bond funds	2.24%	3,636,696	93	50%	63%	1,336	108
Equity funds	7.20%	11,657,245	207	36%	47%	625	48
Mixed funds	0.83%	1,337,329	55	67%	78%	1,623	182
Funds of funds	0.37%	592,849	23	87%	92%	5,750	435
Other funds	4.17%	6,753,220	37	24%	36%	486	270

Source: NBS.
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.
1) Market concentrations are calculated only for open mutual funds (do not include closed and special funds).
2) For foreign mutual funds the net asset value represents units sold in the Slovak Republic.

Table 47 **Net sales of open mutual funds as at 31. 12. 2007** **(in thous. SKK)**

	3 months	1 year	Cumulative	Number of funds	CR3	CR5	HHI	HHI if uniform distribution
Total open mutual funds	6,490,033	24,288,646	148,228,677	517	47%	61%	1,003	19
Domestic	6,739,013	25,546,926	126,276,401	77	39%	47%	634	130
Money market funds	5,940,087	15,232,791	60,097,048	12	82%	94%	2,353	833
Bond funds[1]	-315,968	-3,440,140	16,951,620	14	67%	85%	1,868	714
Equity funds	-699,313	864,526	6,862,349	10	88%	94%	3,289	1,000
Mixed funds	741,294	-159,168	11,957,938	15	59%	78%	1,649	667
Funds of funds	841,975	2,958,680	17,933,170	16	52%	77%	1,324	625
Other funds	121,923	7,205,101	8,467,877	5	90%	100%	3,256	2,000
Special funds	109,015	2,885,136	4,006,399	5	81%	100%	2,703	2,000
Foreign	-248,980	-1,258,279	21,952,276	440	39%	48%	891	23
Money market funds	-211,474	-100,014	3,315,857	25	83%	92%	3,054	400
Bond funds	-140,446	-692,792	1,395,115	93	84%	98%	3,441	108
Equity funds	131,497	-765,464	8,805,461	207	48%	60%	1,329	48
Mixed funds	4,877	64,734	1,408,463	55	64%	80%	2,363	182
Funds of funds	16,241	44,657	508,807	23	99%	100%	4,217	435

Source: NBS.
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.
1) For bond funds all three-month net sales were negative, therefore the concentration indicators are not calculated.

Table 48 **Average performances of open mutual funds as at 31. 12. 2007** **(% p.a.)**

	3 months			1 year			3 years		
	Min.	Average	Max.	Min.	Average	Max.	Min.	Average	Max.
Total open mutual funds	-27.09	-0.78	17.31	-33.94	2.12	52.86	-24.60	3.32	49.24
Domestic	-12.99	-0.17	5.72	-25.95	2.36	16.13	-6.69	2.79	12.37
Money market funds	0.00	0.69	1.04	0.00	3.06	3.90	0.00	2.51	4.55
Bond funds	-0.98	0.63	1.97	-6.40	1.80	5.10	-3.65	1.78	7.84
Equity funds	-12.99	-6.27	5.72	-25.95	-4.87	10.20	-6.69	4.20	8.58
Mixed funds	-5.54	-0.28	4.90	-0.93	3.59	16.13	-0.86	7.23	12.37
Funds of funds	-4.56	-1.55	0.79	0.00	1.94	2.48	N.A	N.A	N.A
Other funds	-1.40	-0.66	-0.05	3.72	3.72	3.72	N.A	N.A	N.A
Special funds	-2.12	0.40	3.43	2.62	4.58	14.30	N.A	N.A	N.A
Foreign	-27.09	-3.72	17.31	-33.94	0.96	52.86	-24.60	5.85	49.24
Money market funds	-6.70	0.15	3.65	-13.39	1.96	5.19	-21.01	0.41	2.75
Bond funds	-9.16	-0.89	3.34	-18.05	-0.47	4.60	-21.69	-6.31	2.27
Equity funds	-27.09	-7.52	17.31	-33.94	1.68	52.86	-24.60	14.54	49.24
Mixed funds	-13.76	-4.69	3.05	-16.21	-3.49	14.46	-20.46	-10.01	1.51
Funds of funds	-11.08	-5.10	5.52	-8.22	-5.83	1.83	-12.07	-9.59	-4.83
Other funds	-6.43	-0.49	5.55	-14.33	1.66	8.01	-19.06	0.35	13.92

Source: NBS.
p. a. – per annum, ročne

Table 49 **Asset structure of domestic mutual funds as at 31. 12. 2007** **(in thous. SKK)**

	Money market funds	Other funds
Total	64,331,979	70,552,954
Deposits at banks	25,670,337	10,321,992
Securities other than shares and mutual fund certificates	38,456,443	29,327,649
Shares and mutual fund certificates	105,055	20,513,594
Shares and other ownership interests	0	8,934,932
Financial derivatives[1]	98,023	392,533
Other assets	2,121	1,062,255

Source: NBS.
1) Financial derivates contains derivates with positive and negative real value.

Securities dealers

Table 50 **Basic characteristics of securities dealers as at 31. 12. 2007** **(in thous. SKK)**

	Volume of trades	Market share	Volume of assets managed	Market share
Banks and branches of foreign banks	1,677,786,489	93	3,103,907	10
SD with capital over SKK 35 mill.	85,307,605	5	2,702,543	9
Others	29,690,608	2	24,498,730	81

Source: NBS.
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)

Table 51 **Market concentrations by securities dealers' trading volumes[1]** **(in thous. SKK)**

	Number of traders	CR3	CR5	HHI
Total	33	44	67	1,056
Banks and branches of foreign banks	15	50	75	1,274
SD with capital over SKK 35 mill.	9	94	99	4,166
Others	9	89	100	4,885

Source: NBS.
The calculation of CR 3, CR 5 and HHI covers only those institutions having a positive value of the given item.
1) Market concentrations are calculated for current quarter.

Table 52 **Volume of trades by individual investment services as at 31.12.2007** **(in thous. SKK)**

	IS – 1	IS – 2	IS – 3
Total trades	57,742,329	566,232,913	1,168,809,460
Shares	446,191	13,286,096	72,685
Bonds	922,045	355,244,945	35,018,496
Mutual fund certificates	135,163	577,907	1,578,515
Fungible securities	126,100	0	145,645
Foreign securities	32,359,926	24,334,895	14,806,928
Money market instruments	298,524	3,625,478	229,400,473
Futures	21,660,615	0	0
Forwards	3,000	103,859,779	402,379,623
Swaps	546,620	62,058,801	115,305,533
Options	819,647	3,245,012	368,988,221
Combinations	424,498	0	1,113,341

Source: NBS.
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.

Table 53 **Capital adequacy** **(in %)**

	Min	Median	Max
Registered capital of SKK 35 mill.	16	85	297
Registered capital of SKK 6 mill.	83	222	483

Source: NBS.

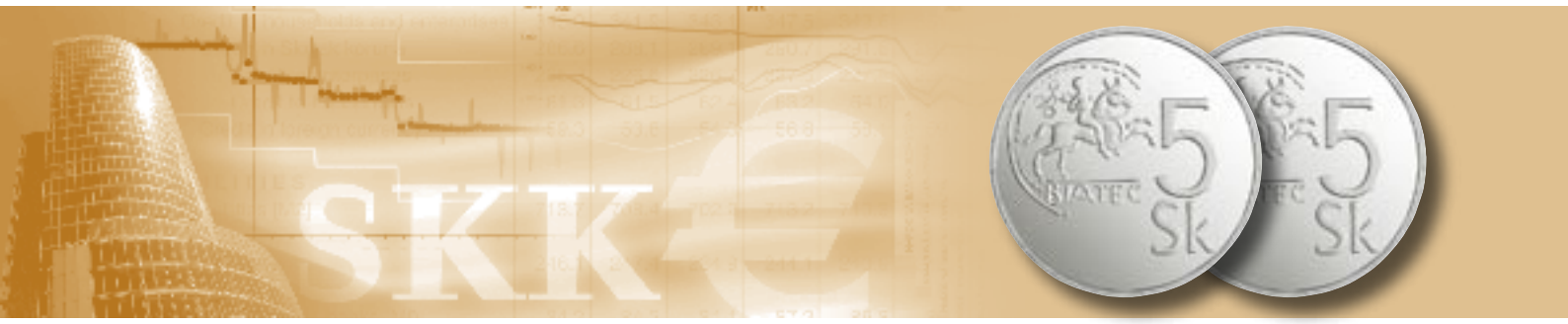
Investment Guarantee Fund

Table 54 **Basic characteristics of the Investment Guarantee Fund** **(in thous. SKK)**

Date	Fund's yields[1]	Fund's expenses	Fund's expenses	Level of customer assets	Maximum level of compensation
31. 12. 2006	15,689	15,689	37,841	13,165,794	2,226,497
31. 12. 2007	14,043	14,043	47,300	14,199,062	2,460,846

Source: NBS.
The Investment Guarantee Fund gathers financial resources of securities dealers, foreign securities dealers, and asset management companies providing selected investment services for the purpose of providing compensations for inaccessible customer assets accepted by a securities dealer, foreign securities dealer, or asset management company for performance of an investment service, and handles the funds acquired in accordance with the Securities Act. The Investment Guarantee Fund was established by the Act on Securities. The activity of the Investment Guarantee Fund is governed in the Securities Act by the provisions of Articles 80 to 98.
1) Comprising the received contributions paid to the IGF and revenues from interest on current and term IGF account.

Annexes



1 Risk Assessment and Stress Testing Methodology

Credit risk

Credit risk, as the most significant risk in banking business, is assessed by analyzing the sensitivity of the capital adequacy ratio to changes in the quality of credit portfolio, which are derived from certain assumptions and from the development of this quality in the past (scenario 1 and 2). Alternatively, we can test how the quality of portfolio is influenced by changes in macroeconomic indicators (scenario 3, 4 and 5).

Scenario 1: Credit crunch

The first scenario simulates a significant deterioration of the financial condition of the bank clients. Therefore, it is assumed that the banks will reduce substantially their lending activity in the upcoming period. The value of risk-weighted assets thus remains unchanged in the scenario. It is assumed that the rise in defaulted loans will be caused solely by non-defaulted loans falling into the defaulted category, resulting from above-mentioned deterioration in the financial positions of corporates and households. Two variants of this scenario are considered with respect to assessment of the increase of defaulted loans.

In the first variant of this scenario, the maximum absolute month-on-month increase in the value of the defaulted loans (Δ) during 2007 is calculated. The stress testing is then based on the assumption that such growth, adjusted by the multiplier *M*, also occurs in the following period. The value of the defaulted loans (NPL) for the next period is then calculated as follows:

$$NPL_{t+1} = NPL_t + \Delta * M \ .$$

In the second variant, the growth in defaulted loans is based on the default rate (*m*) calculated from the Register of Credits and Guarantees. Similarly to the first variant, this value is stressed by the factor *M*. Therefore, the volume of defaulted loans is as follows:

$$NPL_{t+1} = NPL_t + \mu * M * U \ ,$$

where *U* denotes average volume of loans granted by a bank during the last year. However, the interpretation of the factor *M* in this variant is different. While it is possible in the variant 1 to treat *M* as the number of months during which the highest increase would be repeated, in the variant 2 it is to be interpreted as the factor of the increase in the loan default rate. As the RBUZ contains only information about corporate loans, the variant 2 can only be applied to the corporate credit portfolios.

It is assumed for the simulation that the increase in defaulted loans is fully reflected in a loss, and that the bank's own funds are reduced by this loss.

When interpreting the results of this scenario, two basic assumptions should be taken into account – the 100% creation of provisions for each loan that falls into the defaulted category, and the full deduction of the expenses for these provisions from own funds[1].

Scenario 2: Granting of loans with a higher default rate

The second scenario is based on growing competition pressure in connection with a relatively high credit growth. It therefore simulates the situation where banks, in seeking to increase market share, provide more loans and at the same time increase the share of lending to less solvent customers. This leads in future to customers defaulting on loan repayments, the result of which will be a higher share of defaulted loans in the portfolio of new loans. Similarly to the first scenario, the second scenario is also considered in two variants.

1 *It is not taken into account that a bank make some profit during the year which is not included in the own funds but it can cover the loss or its part incurred by defaulted loans This procedure is adopted due to the fact that the size of the profit depends on the period under review. Therefore the results for June at December would not be comparable if this profit was included in the own funds.*

In the variant 1, the first step is to calculate the maximum share of defaulted loans in total loans during 2007 This share of defaulted loans is used as the basis for estimating the default rate of new loans in future. Their relationship is represented by the ratio M_1 which simulates the increase in this share. In the second case (variant 2), the share of the non-performing loans is approximated directly by the default rate as recorded in the RBUZ. The role of the multiplier M_1 remains the same as in the version 1.

A further assumption, which is common for both variants, is the continuing increase in total lending volume, whose average month-on-month absolute change is multiplied by the coefficient M_2. This rise in lending is at the same time included with a risk weight of 100% in the increase of risk-weighted assets. The M_2 multiplier may be interpreted as the growth in the bank's lending activities, but equally as an extension of the time period during which the stress-test scenario continues to apply. The volume NPL_{t+1} is then calculated using the following formula:

$$NPL_{t+1} = NPL_t + \mathrm{Max}\left\{\left(M_1 * \max_i \frac{NPL_i}{úhrn_i}\right) * \right.$$
$$\left. * \left(M_2 * \frac{1}{11}\sum_{j=aug\,05}^{jún06} \frac{úhrn_j}{úhrn_{j-1}} - 1\right), 0\right\},$$

where $total_t$ denotes the total volume of loans in time t.

When calculating the impact of this stress scenario on capital adequacy, own funds of the bank will be reduced. It is again assumed that the value by which the defaulted loans are increased will be reflected in a loss (LGD = 100%). At the same time, the volume of the risk-weighted assets will grow, assuming that new loans have a risk weight of 100%.

The interpretation of the results should take into account, apart from the assumptions mentioned in the first scenario, the assumption that the share of defaulted loans which results from credit risk management in the past is used to estimate defaulted loans in the present. However, this assumption may not be correct if the bank has changed the management of credit risk or if the bank has sold or written off part of its defaulted claims.

Scenario 3: Decline in real estate price taken as loan guarantees

The stress test based on this scenario is focused on the assessment of the amount of potential loss that could be incurred by a bank due to a sudden decline in prices of real estate taken as loan guarantees. There are two main channels that link the adverse shock in real estate prices to the loss. First, standard loans would reclassify to categories with higher risk. Second, the value of guarantees and the unsecured part of loans would change, resulting in creation of additional provisions. However, only the impact through the second channel have been considered so far. It is likely, that the current test will in future serve as a platform for a more comprehensive version that incorporates stress changes in measures of transition between credit categories.

The outcome of this test is the expected loss after a period of one year which the bank would incur whether as the result of a decline in real estate prices or by certain loans of the portfolio falling into a riskier credit category. The test is based on data from the Register of Credits and Guarantees. All banks participating in the register, record in the register their data on all corporate loans extended as at the current date. For each loan, its current outstanding amount, the value of the collateral and the credit category (3 categories were distinguished) is recorded. The actual calculation is made in accordance with the following scheme. The first step is to calculate the transition matrix $\{p_{ij}\}_{i,\,j=1}^{3}$ for the given bank on the basis of historical data, where p_{ij} is the probability that the loan will move from the category i to the category j. These matrices are further adjusted as follows: the components p_{ij}, $i>j$ are assigned a zero value (transition from a more risky to less risky category is not envisaged), and the components p_{ii} are increased by this difference. Based on the transition matrices thus obtained, a p_{ij} percentage of loans that will be in the category j within one year is selected at random for the given bank and its i-th category of loans. This provides one possible future picture of the bank's credit portfolio in terms of the breakdown of loans by credit category. On the basis of the actual and simulated future state of the portfolio, the amount of provisions in both cases may be calculated. It is assumed that the banks create provisions in the amount of x_i percent of the unsecured part of the loan (i.e. the difference between the outstanding value of the loan and the value of the collateral, in the case where this difference is positive), where x_i is taken as the average ratio of provisions to the value of the unsecured part of a loan in category i. In the case of a simulated portfolio, the size of the security corresponding to the simulated percentage decline in the real estate market prices is considered. Afterwards, a loss resulting from the additional provisioning with respect to the stress scenario is calculated for each bank. This procedure is repeated 1,000 times to give 1,000 different loss values. Finally, the average of the losses under the individual simulations and its impact on capital adequacy ratio are calculated.

An advantage of the scenario is that it works practically with a complete database of corporate loans and their classification into credit categories (knowledge of transition matrices), and and it takes into account guarantees (only real estates) when assessing the

amount of provisions. On the other hand, it should be noted that the method considered for the creation of provisions is extremely simplified. Other drawbacks arise from the quality of data entered in the register. The banks often state the original loan amount in the "outstanding amount" item. As a result, the need for the provisioning is a bit overestimated. Also questionable is the extent to which the valuation of the real estates in the register corresponds to the actual market prices. The last and more serious drawback is that the examination of the impacts caused by a decline in the real estate prices does not take into account the credit risk of commercial real estate developers in relation to such an event.

The impact of a decline in the real estate prices on the additional provisioning of retail loans was calculated for nine banks with a more significant retail activity, while using data since January 2000.

As **step one,** we calculated the present value (PV_L^t) of loans extended in the individual months which corresponds to the original value (OV_L^t) of loans decreased by the total of principal repayments (PR_i) made by June 2007.

$$\mathrm{PV_L^t} = \mathrm{OV_L^t} - \sum PR_i$$

The principal repayment is calculated on the basis of interest rates and average maturity of loans extended in the individual months.

As **step two,** we calculated the original value of collateral (OV_C^t) and the present value of collateral (PV_C^t) for each month. The original value of the real estate is calculated on the basis of the original value of loans extended, multiplied by the inverted value of LTV (loan to value ratio).

The present value of collateral is then calculated as the original value multiplied by the real estate index r^t.

As **step three,** we applied shock (s) on the present value of collateral in the individual months. The result is the shock present value of collateral for the individual months ($_{(s)}PV_C^t$). The difference between the present value of loan and the post-shock value of collateral is the unsecured portion of the loan.

As **step four,** we calculated the costs for defaulted and impaired loans resulting from the impairment of collateral. The costs are defined on the basis of the estimated losses on household loans in the individual banks in June 2007. Two ratios were calculated, namely:

- ratio 1: total defaulted loans/total loans NPL_B/TL_B, this part of the portfolio must be provisioned completely.
- ratio 2: total impaired loans/total loans IL_B/TL_B, 50% of this part of the portfolio must be provisioned.

As **step five,** we calculated the loss resulting from the provisioning. This loss is the total of the losses occurred in the individual months. The loss in the individual month is the total of the unsecured portion of the loan multiplied by ratio 1 (100% provisioning) and the unsecured portion of the loan multiplied by ratio 2 (50% provisioning).

$$L^t = [m\frac{NPL}{TL}(PV_L^t - {}_{(S)}PV_C^t)] + \\ + [0.5n(PV_L^t - {}_{(S)}PV_C^t)]$$

As **step six,** we calculated the total loss in the individual banks as the sum of the losses incurred by the individual banks.

Finally, we deducted the loss from the bank's own funds and calculated the change in the capital adequacy ratio.

Scenario 4: An increase in unemployment

In contrast to the previous scenarios, which assessed the impact of extreme event on the capital adequacy ratio, the main objective of this scenario is to evaluate the impact of increased unemployment on the change of the banks' ratio of default loans to total loans. The stress scenario is based on the microdata from the Household Income and Living Conditions Survey (EU SILC 2005 and EU SILC 2006). The survey was conducted on a sample of more than 5,000 households. In addition to information about available income and status of the economic activity, it contains information about whether the given household is provided with a mortgage loan. If it is the case, the amount of the annual repayment is specified.

The scenario envisages a negative development of economy accompanied with a growth, by the defined number of percentage points, of unemployment as a stress factor. Within the actual execution of the test, persons representing the increase in unemployment rate are randomly selected from the statistical sample of persons with the "employed" status. For these chosen persons it is supposed that their current income is replaced by some form of social transfer. For purposes of this test, the benefit was defined in the amount of SKK 5,000. Moreover, the given loan is considered as defaulted if the annual disposable income adjusted by living cost is not sufficient comparing to annual repayment. The amount of necessary living costs for the first adult person in a household is assessed to SKK 4 000. The costs for other adult persons are supposed to be 0.5 times and for children under 15 years 0.3 times of this amount.. For all households that have taken a mortgage loan their

disposable income is adjusted (after regarding the increase in unemployment in the statistical sample) and their ability to repay their loans is assessed. The ratio of defaulted loans to total loans included in the sample is estimated. This ratio is compared to the percentage of defaulted loans, which were identified in the original sample (before the increase in unemployment). The difference between these two values represents the tested change of the ratio of defaulted loans as the consequence of the increase in unemployment. The entire simulation is repeated 1,000 times to determine, through arithmetic average, the most probable size of the impact.

The predictive power of this stress test is negatively influenced mainly by two factors. First, it is important to note that the survey of the statistical office was not focused on the household debt burden and it provides data on mortgages only. This is related to the low number of loans granted to the households which were included in the sample. In addition, the classification of defaulted loans based only on the disposable income adjusted by living costs is doubtful, as households can have sufficient amount of other liquid assets which can be temporarily used for loan repayment.

Scenario 5: An increase in unemployment combined with a decline in real estate prices

The last scenario combines scenarios 1, 3 and 4. The impact of economic recession, represented by increase in unemployment and decrease in real estate price is studied. As we simulate the negative economic development, it is likely that banks cut down their credit activity (credit crunch) and no new loan are granted. In this situation, banks are exposed mainly to two unfavorable impacts which result in additional creating of provisions in the greater extend. Firstly, it is caused by increase in defaulted loans following the increase in unemployment. Secondly, the decrease of real estate prices results in growth of unsecured part of loans, which is also related to additional provisioning. This test is applied only to the retail credit portfolio.

Increase in unemployment in percentage points and drop in real estate prices in per cent are taken as input parameters. In the first step of the calculation, the growth of default rate is determined as described in scenario 3. Then this value is used for evaluation of the increase of default loans for individual banks. As we use macrodata, we have to make simplified assumption that the volume of guarantees related to these new defaulted loans corresponds to the ratio of volume of these loans to the total volume of retail loans. The repriced value of the guarantees resulting from the drop in prices on the real estate market is taken into account. Recall the assumption that banks create provisions to 100% of the unsecured part of the defaulted loans. As a result, whole difference between new defaulted loans and the value of the respective guarantees represent a loss due to provisioning. The decrease of the value of guarantees related to the defaulted loans which defaulted in the past is the second part of this loss. Finally, the impact of the total loss on the capital adequacy ratio is calculated.

Foreign exchange risk

A bank is exposed to foreign exchange risk when it has a mismatch between the volume of assets and liabilities in a certain foreign currency. Where a bank has a surplus of assets over liabilities in a foreign currency (the so-called „long foreign exchange position“), it is exposed to the risk of a loss should the koruna appreciate against this currency. Therefore, the starting point for assessing foreign exchange risk is the size of open positions in individual currencies on the overall balance sheet and from derivatives instruments in the off-balance sheet. The stress testing of the foreign exchange risk is then based on the quantification of this loss calculated as the product of the projected change in the exchange rate and the value of the open position and the subsequent change in the capital adequacy ratio, following a deduction of this loss from own funds[2]. To stress test the foreign exchange rate risk, we use an approach based on simulated changes of exchange rates, where the simulation is based on an expert assessment of the change in one exchange rate and mutual correlations with other exchange rates estimated from historical data. However, these correlations can be different in case of periods of more substantial fluctuations (hectic periods) from correlations based on the whole historical development.

The estimate of the correlation in hectic periods is derived from the historical development of logarithms of the relative exchange rate fluctuations[3], based on the following model:

$$\ln\left(\frac{eur_t}{eur_{t-1}}\right) \sim \omega\, N\left(\mu_{eur}, \sigma_{eur}\right) + (1-\omega)\, N\left(\tilde{\mu}_{eur}, \tilde{\sigma}_{eur}\right),$$

where *eur* is the SKK/EUR exchange rate in the period *t*. It is assumed that the logarithms of the movements of the EUR exchange rate are, with the probability ω, from the quiet period (simulated by normal distribution), and with the probability 1 – ω,

[2] *Branches of foreign banks were excluded from calculation.*

[3] *This transformation of the original data is aimed mainly at their stationarization.*

Table 1 **Estimated values of parameters for the SKK/EUR exchange rate**

	Probability	Mean	Standard deviation
Quiet period	87%	-0.00008	0.097%
Stress period	13%	-0.00012	0.29%

Source: NBS, own calculations.

Table 2 **Estimated correlations between exchange rates** **(in %)**

	CHF	CZK	DKK	EUR	GBP	HUF	JPY	PLN	SEK	USD
Correlation in quiet period	75	42	96	100	52	5	45	-1	59	50
Correlation in stress period	95	81	100	100	87	55	80	39	92	78

Source: NBS, own calculations.
The table shows the estimated conditional values of the correlations of movements in the SKK/EUR exchange rates and in other exchange rates.

from the stress period (simulated by a different normal distribution with a higher standard deviation) which is has lower probability of occurance and ischaracterized by sudden changes in the value of the exchange rates and surge in volatility. Parameters of the given model (including the probability ω of the quiet period) were estimated on the basis of historical data of a time series of the exchange rates in the period 2004 through 2007 using the maximum likelihood method.

The given model then allows to calculate conditional correlations between the exchange rates, provided that the data come from the stress period, which can be assumed in the simulation of extreme changes. Moreover, the model is able to capture a higher probability of extreme changes than would be implied by a single normal distribution. If we know the model parameters, it is possible to find the function that will assign, to every data about the exchange rate movement logarithm, the probability that the given data was generated from the normal distribution corresponding to the stress period. Using this function, we can calculate the conditional mean values and variances in the quiet and the stress periods for the second exchange rate (e.g. SKK/USD), as well as the conditional correlations between the two exchange rates for the quiet and the stress periods.[4] The values of the estimated correlations are shown in the Table 2. Using the relation

$$\frac{\ln(usd_{t+10} / usd_t) - 10\,\tilde{\mu}_{usd}}{\sqrt{10}\,\tilde{\sigma}_{usd}} =$$

$$\tilde{\rho}_{usd,eur}\,\frac{\ln(eur_{t+10} / eur_t) - 10\,\tilde{\mu}_{eur}}{\sqrt{10}\,\tilde{\sigma}_{eur}} + \sqrt{1-\tilde{\rho}^2}\;\varepsilon_t$$

it is possible to calculate the expected movements in the SKK/USD exchange rate (and, by analogy, in other exchange rates) with the simulated extreme movement in the SKK/EUR exchange rate, while taking into account the correlations between the exchange rate movements in the stress period.

Interest rate risk

When assessing the interest rate risk, it is possible to apply a number of approaches and this choice significantly affects the results. In this section, we describe two currently used approaches and the basic ideas of these approaches.

Approach based on the estimate of changes in the net present value of balance sheet items

The aim of this approach is to estimate the immediate impact of the interest rate shock on the net economic value of the balance sheet assets and liabilities. It should be noted that the impact may not be actually reflected in the reported result of operation, and thus in the value of the capital adequacy ratio. In spite of this fact, to ensure comparability with the results of other stress scenarios, the capital is adjusted by changes in the net economic value and the impact on capital adequacy calculated in this way is then presented. Although deposits, loans and financial instrument held to maturity are not repriced, they would be sold for their real value (in contrast to accounting value) in case of crisis. Another disadvantage of this approach is represented by the assumption that the interest shock is immediately reflected in all interest rates on deposits and loans, including interbank rates, as well as in yields of securities.

[4] *For detailed description of the given calculations see Kim, J. – Finger, Ch. C. (2000): A Stress Test to Incorporate Correlation Breakdown, Journal of Risk.*

When estimating the impact of the interest shock, the report on sensitivity to interest rate changes (Bd (HUC) 53–04) is used as the basis. The impact on the net economic value was quantified for assets and liabilities denominated in SKK, EUR, UDS and CZK separately. The Reuters system and the reports V (NBS) 11–12 and V (NBS) 7–12 are used as a source of data about the individual interest rates. The missing points of interest curves were approximated by interpolation or by a shift of the interest curve (in the case of deposits and loans denominated in foreign currency). The process of estimating the impact of the interest shock consists of two steps:

– estimatation of the cash flows from individual instruments, and
– calculation of the net economic value as a difference between the total of discounted cash flows of assets and the total of discounted cash flows of liabilities.

When estimating the cash flows, the classification of loans, deposits, and securities in the individual items by the remaining interest rate fixation period or by the remaining maturity is used as the basis. The cash flow is estimated for each such item (e.g. securities with the remaining fixation period from 3 to 4 years) separately. We assume that the cash flow consists of interests paid once a year and the principal which is paid at the end of the fixation period together with the last interest payment. This estimation is based on the fact that the reported amounts do not include future interests or coupons from debt securities. These cash flows are discounted to the present using the interest rates adjusted by the interest rate shock chosen in the given stress scenario. Afterwards, we calculate the discounted value of the cash flow from the given item:

$$DH = \sum_{i=1}^{n-1} \frac{Ir_i d_i}{(1 + r_i^d)^{L_i}} + \frac{I(1 + r_n d_n)}{(1 + r_n^d)^{Ln}}$$

where

n denotes the assumed number of payments (the number of years to the next interest rate fixation or the maturity of the given item, respectively)

I denotes the principal value (the volume of the given item)

r_i denotes a point on the interest rate curve relate to the given asset or liability item

d_i denotes the time period for which is the interest or principal paid; if the fixation period in years is not integer number, then the decimal part is assigned to 1 d (to the first payment period), all other payment periods are equal to 1

r_i^d denotes a point on the interest rate curve after the interest rate shock.

$$L_i = \sum_{j=1}^{i} d_i$$

Deducting the value of the present principal from the discounted value, we obtain a change in the economic value resulting from the interest shock.

Approach based on the estimate of the impact on the reported profit or loss

The aim of this interest rate risk stress-testing model is to take a different look at the interest rate risk in banks compared with the method of changes in the net present value, in particular in two aspects:

- The changes in the base interest rate of the NBS are considered the primary impulse of the interest rate changes. The model captures the time lag between various types of interest rates on interbank market and on the market with client loans and deposits on one hand and the base interest rate of the NBS on the other hand. This lag is represented by the estimation of long-term and short-term dynamics using a vector error correction (VEC) model.
- This approach attempts to approximate more to the actual impact on the result of operation of the banks, in particular in terms of the impact on the net interest income. Regarding the loans and deposits, this impact is modeled as gradual change of the profit comparing to the baseline scenario in 1 year horizon using the estimation of interest income and interest expenses instead of modeling the immediate impact on the net present value.

The resulting value of the estimated interest rate risk is the sum of the expected loss (or profit) arising from the shock to the base interest rate of the NBS for most relevant types of financial instruments: loans and deposit, debt securities and interest rate derivatives.

Loans and deposits

As regards the approach based on the estimate of the impact of the shock on the reported profit or loss on loans and deposits, it is assumed that these products are not revalued in the banks to fair value (as they are held to maturity). This impact materializes only gradually in the accounting profit or loss through the long-term impact on the net interest income. The impact of the interest rate shock on loans and deposits was assessed using the following procedure:

- The short-term and long-term dynamics of the gradual translation of changes in the NBS base rates into the interest curve rates (BRIBOR and long-term interest rates calculated on the yield of government bonds, see Table 3) and then into the interest rates on loans and deposits by the individual types of contractual maturities was estimated using the VEC model (Tables 4 and 5). A similar approach was adopted in estimating the development of rates and volumes of loan and deposits in EUR (Table 6). Monthly data from 2003 onwards were used for modeling.

- This model was used to estimate the development of the individual types of interest rates – first on the assumption of the expected change in the NBS base rate, and then after an unexpected change in this rate.
- The volumes of deposits and loans were modeled as autoregressive processes with a trend and (or) with a constant.
- Using the estimated interest rates and volume of loans and deposits we are able to calculate the impact on the changes in interest income and interest expenses during the chosen time horizon (e.g. 1 year). This impact was calculated as the difference between the net interest income estimated with post-shock interest rates and the pre-shock interest rates.

For modeling purposes, the VEC models were estimated for the interest curve rates at first, as it was assumed that the interest rates are in long-term balance with the NBS rate. The estimated models have the following form:

$$\Delta r_t = -\alpha\left(r_{t-1} - \beta_1 r_{t-1}^{NBS} - \beta_2\right) + \delta_u \Delta r_t^{NBS\_u} +$$

$$+ \delta_d \Delta r_t^{NBS\_d} + \sum_{i=1}^{n} \gamma_i \Delta r_{t-i} + \sum_{i=1}^{n} \delta_i \Delta r_{t-i}^{NBS} + \varepsilon_t$$

where r_t is the modeled interest rate
r_t^{NBS} is the NBS base rate
ε_t is a random error.

The term in parentheses represents the long-term relationship between the modeled interest rate on one hand and the base interest rate of the NBS on the other hand. The constant β_1 indicates what part of the base interest rate change would be transferred to the change in the modeled interest rate in the long term. The constant β_2 indicates the average equilibrium spread between the modeled interest rate and the base interest rate of the NBS. The constant α represents the speed of adjustment in case of deviation from the equilibrium (i.e. a decrease is expected if the interest rate is above its equilibrium level). δ_u represents immediate reaction of the interest rate on an increase in the base interest rate of the NBS, δ_d represents a decrease. Remaining terms reflect the short-term dynamics. The optimal number of lags was chosen based on statistical tests.[5]

The modelling of the interest rates on deposits and loans was based on the assumption that a change of the base interest rate of the NBS influences the yield curve first and the interest rates on deposits and loans are influenced only subsequently. In every VEC model, we chose an interest rate which influences the long-term equilibrium of a particular interest rate on loans or deposits, based on tests of cointegration. The given VEC model is in the following form:

$$\Delta r_t = -\alpha\left(r_{t-1} - \beta_1 r_{t-1}^{NBS} - \beta_2\right) + \delta_u \Delta r_t^{NBS\_u} +$$

$$+ \delta_d \Delta r_t^{NBS\_d} + \sum_{i=1}^{n} \gamma_i \Delta r_{t-i} + \sum_{i=1}^{n} \delta_i \Delta r_{t-i}^{NBS} + \varepsilon_t ,$$

Table 3 **Estimated values of VEC model parameters for rates of interbank market and zero coupon government bonds**

	α	β_1	β_2	n	R^2
o/n BRIBOR	1.7	1.0	-0.4	2	64%
1W BRIBOR	1.0	1.0	-0.2	3	46%
1M BRIBOR	0.7	1.0	-0.1	2	40%
2M BRIBOR	0.5	1.0	-0.0	1	42%
3M BRIBOR	0.4	1.0	0.1	1	46%
6M BRIBOR	0.3	0.9	0.5	1	46%
9M BRIBOR	0.2	0.8	0.7	1	47%
12M BRIBOR	0.2	0.7	1.0	2	47%
2Y bond	0.3	0.7	1.5	2	51%
3Y bond	0.2	0.4	2.4	2	48%
4Y bond	0.2	0.5	2.2	2	40%
5Y bond	0.6	0.7	1.2	7	37%
6Y bond	0.5	0.6	1.6	5	38%
7Y bond	0.5	0.6	1.7	5	37%
8Y bond	0.5	0.6	1.9	5	35%

Source: NBS, own calculations.
The value R^2 is adjusted by the impact of the number of variables (adjusted R^2).

[5] *The value of the parameter n was chosen by comparing different models for n from 1 to 10 based on the Schwarz information criterion and the autocorrelation of residual errors was tested.*

Table 4 **Estimated values of VEC model parameters for rates of corporate loans and deposits**

	α	β_1	β_2	n	R^2	r^K
Loans up to 1 year	0.2	0.9	2.0	2	73%	3M BRIBOR
Loans up to 5 years	0.1	0.9	2.2	3	83%	3M BRIBOR
Loans over 5 years	0.2	1.2	0.6	2	84%	6M BRIBOR
Demand deposits	1.0	0.3	-0.5	1	63%	2W BRIBOR
Savings deposits	0.3	0.7	-0.7	1	58%	3M BRIBOR
o/n deposits	1.4	1.0	0.9	1	66%	REPO NBS
Deposits up to 7 days	1.3	0.9	-0.3	1	68%	2W BRIBOR
Deposits from 7 days to 1 month	0.4	0.9	0.0	2	89%	1M BRIBOR
Deposits from 1 to 3 months	0.5	1.0	-1.0	1	74%	2M BRIBOR
Deposits from 3 to 6 months	0.4	1.0	-0.7	1	47%	12M BRIBOR
Deposits from 6 to 12 months	0.4	0.7	-0.3	1	59%	3M BRIBOR
Deposits from 1 to 2 years	0.7	0.8	-0.9	1	63%	1M BRIBOR
Deposits from 2 to 5 years	0.4	0.8	-0.2	2	41%	1M BRIBOR
Deposits over 5 years	0.3	0.1	2.2	3	33%	REPO NBS

Source: NBS, own calculations.
The value R^2 is adjusted by the impact of the number of variables (adjusted R^2).

Table 5 **Estimated values of VEC model parameters for rates of household loans and deposits**

	α	β_1	β_2	n	R^2	r^K
Loans up to 1 year						
Loans up to 5 years						
Loans over 5 years						
Demand deposits						
Savings deposits	0.5	0.6	-0.7	4	60%	2M BRIBOR
o/n deposits	1.3	1.0	-1.4	1	64%	9M BRIBOR
Deposits up to 7 days	0.4	0.7	-0.7	3	69%	2W BRIBOR
Deposits from 7 days to 1 month	0.3	0.7	-0.7	0	69%	1M BRIBOR
Deposits from 1 to 3 months	0.2	0.6	-0.1	2	76%	1M BRIBOR
Deposits from 3 to 6 months	0.2	0.8	-0.9	2	84%	12M BRIBOR
Deposits from 6 to 12 months	0.1	0.7	-0.2	2	73%	12M BRIBOR
Deposits from 1 to 2 years	0.2	0.6	0.3	3	47%	REPO NBS
Deposits from 2 to 5 years	0.1	1.1	-2.4	1	17%	REPO NBS
Deposits over 5 years						

Source: NBS, own calculations
The value R^2 is adjusted by the impact of the number of variables (adjusted R^2).

if tests of cointegration did not reject the existence of the long-term relationship with the base interest rate of teh NBS and

$$\Delta r_t = -\alpha\left(r_{t-1} - \beta_1 r_{t-1}^K - \beta_2\right) + \\ + \sum_{i=1}^{n} \gamma_i \Delta r_{t-i} + \sum_{i=1}^{n} \delta_i \Delta r_{t-i}^K + \varepsilon_t ,$$

if tests of cointegration did not reject the existence of the long-term relationship with an interbank interest rate (r^K). The interpretation of coefficients is the same comparing to the model for interbank interest rates.

The volumes of all loans, sight deposits and household deposits with maturity more than 5 years did not show a long-term relationship with any interbank interest rate or the base interest rate of the NBS. Hence, we modeled them as autoregressive processes.

Loans and deposits denominated in EUR were significantly correlated with the interest rates of the ECB.

Table 6 **Estimated values of VEC model parameters for rates of loans and deposits denominated in EUR**

	α	β_1	β_2	n	R^2
Loans up to 1 year	0.4	0.9	0.7	6	56%
Loans up to 5 years	0.6	0.9	0.8	7	76%
Loans over 5 years	0.9	1.0	0.4	3	83%
Demand deposits	0.3	0.5	0.7	4	55%
Time deposits	0.5	0.9	0.4	6	67%

Source: NBS, own calculations.
The value R^2 is adjusted by the impact of the number of variables (adjusted R^2).

The loans and deposits were modeled using the ECB sterilization and the refinance rates, respectively. The VEC model has the following form:

$$\Delta r_t = -\alpha\left(r_{t-1} - \beta_1 r_{t-1}^{ECB} - \beta_2\right) + \sum_{i=1}^{n} \gamma_i \Delta r_{t-i} +$$

$$+ \sum_{i=0}^{n} \delta_i \Delta r_{t-i}^{ECB} + \sum_{i=1}^{n} \delta_i \Delta r_{t-i}^{NBS} + \varepsilon_t$$

As regards the interpretation of the individual ratios, it is identical to that of the interest curve rates.

Regarding the interbank interest rates greater speed of adjustment to long-term equilibrium can be observed for interest rate related to shorter maturities. This speed is slower for longer maturities. In addition, any change in the base interest rate of the NBS is transmitted fully to the interest rate when referring to shorter maturities, but only 70%-90% of this change is transmitted regarding longer maturities.

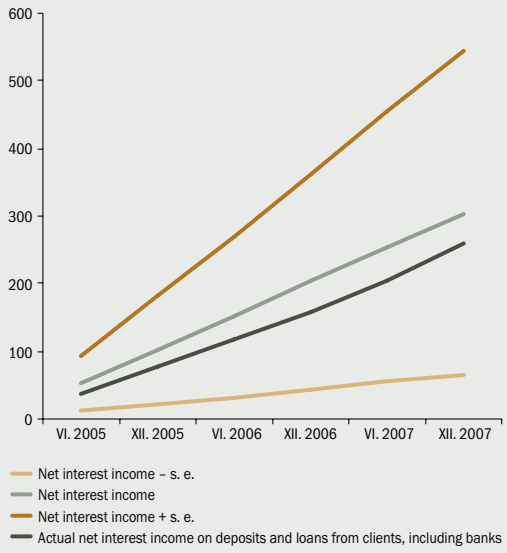
Generally, it can be stated that the change of the base interest rate of the NBS is transmitted to other interest rates only gradually. First, the interbank interest rate change and interest rates on loans and deposits from corporates and households are changed only afterwards. However these changes are not transmitted fully and we can observe lower speed of adjustment to the long-term equilibrium comparing to the interbank interest rates.

The speed and the transmission are higher regarding corporate loans and deposits comparing to the household loans and deposits. This can be caused by stronger competition on the corporate market.

To verify the presented approach, the given model was back-tested for the net interest income on client loans and deposits. The back-testing procedure was as follows:

- All equations of the model were estimated using the time series as of May 2007.
- The actual development of the NBS base rate was used to estimate the development of the modeled interest rates during the second half of 2007 (*out-of-the-sample test*).
- The volume of loans and deposits was estimated for the first half of 2007. This estimation was based on autoregressive processes.
- The estimated interest rates and the volume of deposits and loans were used to calculate the net interest income.

Chart 1 **Back-testing of the impact of the shock on the net interest income on deposits and loans (in SKK billion)**



Source: NBS, own calculations.

The model was used to estimate the net interest income of the banks for the second half of 2007 amounting to SKK 15.2 bn with a standard deviation of SKK 11.9 bn, while the actual value of the net interest income was SKK 13.0 bn . The difference between the actual value and the estimated one was not more than 1 standard deviation and stood for approximately 17% of the actual value. The accuracy of the estimate of the cumulative net interest income during the second half of 2007 is shown in Chart 1. The high value of the standard deviation is a consequence of high

values of the standard deviations within the volume development modeling, which results from a large variance in these volumes.

Debt securities

The calculation of the impact of the interest rate risk is based on detailed data about the individual securities in the banks' portfolios, including their classification in the individual portfolio types (revalued against profit and loss, available for sale, held to maturity). The revaluation of securities was based on the discount curve development estimate that was modeled using the EC models similarly to the interest rates on deposits and loans. As the revaluation of debt securities available for sale and held to maturity has no impact, during the period for which the security is held, on the reported profit/loss, the impact of the change in the base rate was estimated on the basis of two approaches. In the first approach, account was taken only of the securities that are revalued to fair value against the profit and loss. In the second approach, the calculation was based on the revaluation of all securities.

Interest rate derivatives

When calculating the impact of the interest rate risk in the case of the interest rate derivatives, it was assumed that all interest rate derivatives are revalued to fair value. This assumption makes sense also in the case it is not true, because as far as the interest rate derivatives held in the banking book are concerned, they can be sold by the bank in a crisis situation.

Two approaches can be used in revaluating swaps. The first approach is based on the estimate of the cash flows with both the fixed and the variable interest rate and on the calculation of the net present value of these cash flows. The second approach is based on the fact that both parts of a swap (fixed and variable) can be treated as coupon payments on the respective bonds (with fixed and variable rates). The fair value of a swap can thus be calculated as a difference between the fair values of these two bonds. Even though the exchange of principals upon maturity of the swap, as envisaged by this approach, does not really take place in most of the cases, the calculated fair value is not influenced at all because these principals would be identical. The second approach is closer to method of reporting swaps in Bd (HUC) 53-04 statement, as it is the nominal values of swaps which are reported in this report, it was used to estimate the revaluation of swaps in the case of the interest shock. The calculation of the fair value of the given bonds is analogical to that of the securities.

However, several simplifications need to be done in respect of the given assumptions. As regards the reported swaps, the only information we have is the rate fixation period concerning the fixed and the variable part of the swap, which data is in the aggregate form only. Information about the actual value of the fixed rate or about periodicity of payments is not available. The calculations were done using following assumptions:

- the value of the fixed rate is 5% (it seems that although the exact value of the fixed rate has relatively significant impact on real value of the swap, it is less important when estimating the impact of interest rate shock on change in the real value)
- the periodicity of payments in fixed and variable part of the swap is annual
- interest rate fixation of variable part of each swap is less than 3 months.

The last assumption is necessary to be able to differentiate which data from the Bd (HUC) 53-04 statement are related to the variable part of the swap and which to the fixed part. According to this assumption we suggest that all data reported in time buckets less than 3 months are related to the variable part of swaps and all data in time buckets over 3 months are related to the fixed part of swaps. For each time bucket, we calculated the difference between claims and liabilities and it is revaluation to the real value as it was mentioned before. This approach is consistent with the approach used for estimation of impact of shock on portfolio of securities. Hence, if the interest rate risk of securities is hedged by interest rate derivates, this hedging will be fully taken into account in this approach.

Liquidity risk

The testing of liquidity risk involves special limitations. A typical problem is the ambiguity of the link between liquidity risk and capital adequacy. Even if a bank incurs a loss related to liquidity problems (for example, the rapid selling of securities), it is not easy to simulate this situation. Moreover, the scenarios take into account neither the existing credit lines in respect of other banks and the parent bank nor the core deposits.

Therefore, the test is carried out not on capital adequacy, but on three selected ratios of liquidity (the ratios of quick liquidity, liquidity up to 7 days, and liquidity up to 3 months).[6] Each indicator is calculated as a share of the liquid assets and volatile funds in the respective category. The size of the shock was considered in regard to the absolute value of the average month-on-month change in these indicators. As with credit risk, the objective is not to quantify effects; it is rather to identify the banks that would be worst

6 *The ratios are defined in the part "Liquidity risks".*

affected in the given scenario, and to briefly analyze the reasons. At the same time, it is possible to specify the banks in which more significant changes took place (negative or positive).

Two basic scenarios were chosen for the liquidity risk stress testing:

Scenario 1: A decline in clients' deposits by 20%
It concerns an unexpected withdrawal of a part of the clients' deposits. The volume of the liquid assets is reduced by this value. As regards the liabilities, it is assumed that the clients' funds will be reduced in all time bands evenly. Volatile sources are thus reduced by 20% of all liabilities due to the clients (with the first ratio) or by 20% of liabilities due to the clients with the remaining maturity of up to 7 days (with the second ratio) and up to 3 months (with the third ratio).

Scenario 2: Outflow of short-term capital from banking sector for external reasons
It is a simulation of a situation when investors decide to reduce significantly their positions in the Slovak banks irrespective of the local conditions. Simply said, it refers to a decline in deposits of non-resident banks by 90%. This situation could happen for example in the case when the investors simply decide to invest their short-term assets in other, more profitable markets.

With this scenario being applied, the liquid assets are reduced by 90% of the value of deposits from non-resident banks. For liabilities, it is assumed that funds with the shortest residual maturity are the first to leave. Therefore the said volume (90% of foreign banks' deposits) is also deducted from volatile funds, although by an amount not exceeding the size of banks' current accounts (for the first ratio), by the amount of banks' deposits with a maturity of up to 7 days (for the second ratio) and up to 3 months (third ratio).

As the value itself of the given ratio can be used for liquidity assessment purposes only to a limited extent, the results of the stress testing are focused on percentage changes rather than on absolute changes in the ratios. Significance of the scenario was determined by comparison of two values. The first value was the percentage change in the value of the ratio resulting from the application of the scenario with regard to the current value. The second value was the average month-on-month percentage change in the value of the same ratio during 2007. With this approach, it was excluded that the change in the ratio obtained in certain scenario was considered significant if its level was similar to the usual month-on-month changes in the ratio.

System risk

The analysis of the system risk is based on the matrix of interbank deposits and loans It suppose that the systemic risk could pose a problem for banks which the volume of loans granted to one bank or the sum of loans granted to several banks on the domestic interbank market exceeds the value of capital which is owned by banks above the regulatory limit 8%. On the contrary, if the total of all loans extended by the bank to other banks is lower than the given value of the excessive capital, the bank faces no system risk resulting from the default of one or more banks. This approach to the system risk analysis is based on the following assumptions:

- the analysis is limited only to the domestic interbank market; transactions with non-resident banks are disregarded,
- as data regarding the guarantees of interbank loans are not available, the worst case scenario is assumed, i.e. all interbank loans are supposed to be unsecured,
- the worst case scenario is also envisaged in determining the loss given by default (*LGD* = 100%),
- no default of any of the banks would be expected by the other banks; therefore, they would make no change in the volume of their loans recorded with the given bank.

2 Data Collection and Ratio Calculation Methodology

2.1 Banks and branches of foreign banks

2.1.1 Structure of assets and liabilities of banks and branches of foreign banks

All assets are reported in their gross value, i.e. not adjusted by provisions.

The *Total interbank market operations* category includes not only loans and deposits extended to central banks and other banks but also the acquired NBS bills, T-bills and bills, except for those held by the bank in its portfolio of securities held to maturity.

Comments on concentration indices calculation:

CR3 index – the share of three banks with the largest volume of the given item in the total volume of the given item in the banking sector, while the calculation includes only institutions in which the value of the given item is positive.

CR5 index – the share of five banks with the largest volume of the given item in the total volume of the given item in the banking sector, while the calculation includes only institutions in which the value of the given item is positive.

Table 7 **Sources of data**

Description	Source report from STATUS
Loans to clients	V (NBS) 33 – 12
Interbank market transactions	Bil (NBS) 1 – 12
Securities	V (NBS) 8 – 12, (NBS) Bil 1 – 12
Deposits and loans received	V (NBS) 5 – 12
Funds from banks	Bil (NBS) 1 – 12
Issued securities	Bil (NBS) 1 – 12
Risk-weighted assets	BD (HKP) 1 – 12 (part 7)
Own funds	BD (HKR) 1 – 04

Source: NBS.

Herfindahl index (*HHI*) – defined as the sum of the squares of the individual banks' shares in the total volume of the given item expressed in percentage, while the calculation includes only institutions in which the value of the given item is positive.

As regards the possible interpretation of the value *HHI,* it can be said that concentration in the given item is the same as if there would be in the sector 10,000/*HHI* institutions, each of them having the same volume in the given item. According to the definition of the US Department of Justice, the market is considered highly concentrated if *HHI* exceeds the value of 1,800 and non-concentrated if *HHI* is less than 1,000.

2.1.2 Revenues and expenditures of banks and branches of foreign banks

Comments on some of the items:

Net income from trading includes net income from transactions involving securities (except for interest income), net income from FX transactions, and net income from transactions involving derivatives.

Other net operating income includes net income from assigned receivables, from transfer of tangible and intangible assets, from the share in profit generated on shares and deposits in equivalence, from transfer of shares and deposits, from other operations, and other net operating income.

Annual value is a year-end estimate, provided that the given item changes evenly over time.

The source of data is the report Bil (NBS) 2 – 12.

2.1.3 Profitability ratios of banks and branches of foreign banks and their distribution in the banking sector

Calculation of individual ratios:

ROA = cumulative net profit to average net assets ratio (Source: Bil (NBS) 2 – 12, Bil (NBS) 1 – 12).

ROE = cumulative net profit to average own funds ratio; the calculation does not include branches (Source: Bil (NBS) 2 – 12, BD (HKR) 1 – 04).

Cost-to-income ratio = cumulated operating costs to cumulated total of net interest and non-interest income ratio (Source: Bil (NBS) 2 –12).

Relative significance of interest income = cumulated net interest income to cumulated total of net interest and non-interest income ratio (Source: Bil (NBS) 2 –12).

Net interest spread = the difference between the share of the cumulative value of revenues (interest and non-interest) other than interest revenues from defaulted assets in the current value of loans provided to a given counterparty and the share of the accumulated value of costs in the current value of deposits provided to a given counterparty, (Source: V (NBS) 13 – 04).

Net interest margin = the share of net interest incomes, less interest incomes from the defaulted assets, in the average value of net assets, (Source: Bil (NBS) 2 – 12, Bil (NBS) 1 – 12).

The values of the minimum, lower quartile, median, upper quartile, and the maximum represent the distribution of the values of the given ratio in the banking sector. The value of the lower quartile here expresses that value of the given indicator that 25% of all banks (expressed by number) have a value of the given indicator equal to at most the value of the lower quartile (or lower). Analogously, the value of the median expresses that value of the indicator that 50% of all banks have a value of the given indicator equal to at most the value of the median. Finally, the value of the upper quartile expresses that value of the indicator that 75% of all banks have a value of the given indicator equal to at most the value of the upper quartile. As the given distribution disregards the size of the individual banks, this size is factored in percentage shares given in brackets. For example, the number below the first quartile represents the share of the banks (measured by the volume of assets) whose value of the given ratio lies in a closed interval between the minimum value and the lower quartile value. Similarly, the value below the median represents the share of the banks whose value of the given ratio lies in the interval (closed from the right) between the lower quartile value and the median value.

2.1.4 Risk and capital adequacy ratios of banks and branches of foreign banks and their distribution in the banking sector

Calculation of individual indicators:

Share of defaulted loans in the total volume of loans to customers = the share of the gross value of non-standard, doubtful and loss-making loans to customers in the total gross value of loans provided, (Source: V (NBS) 33 – 12).

Share of provisions in the volume of defaulted loans = the share of provisions created in the gross value of non-standard, doubtful and loss-making loans, (Source: BD (ZPZ) 1 – 04).

Large asset exposure (weighted)/own funds = share of weighted large asset exposure to own funds; according to the Banks Act this share may not exceed 800% (Act No 483/2001 Coll. 39(2); does not concern branches of foreign banks, (Source: BD (HMA) 8 – 12, part C).

Large asset exposure within groups – monitors the number of breaches of limits set by the Banks Act (§39(1)) as at the end of individual months, does not concern branches of foreign banks, (Source: BD (HMA) 8 – 12, part A and B).

Share of the claimable value of security in the total volume of defaulted loans to customers – the indicator does not include banks that pursuant to §8 of NBS Instruction No 13/2004 have not classed receivables into individual groups due to the creation of provisions on a portfolio basis according to International Accounting Standards, (Source: BD (ZPZ) 1 – 04).

Forex open balance-sheet position/own funds = share of the difference between assets and liabilities held in a foreign currency in own funds, (Source: Bil (NBS) 1 – 12).

Forex open off-balance-sheet position/own funds = share of the difference between off-balance-sheet assets and liabilities (with the exception of redistribution and registration accounts and receivables/payables in entrusted funds) held in a foreign currency in own funds, (Source: Bil (NBS) 1 – 12).

Total open forex open position/own funds = share of the sum of balance-sheet and off-balance-sheet forex position in own funds; a positive value for the forex position means a risk of loss from an appreciation of the domestic currency, (Source: Bil (NBS) 1 – 12).

VaR/own funds = the share of a loss from a change in exchange rates, the value of which should not over the course of one day, on the basis of an historical simulation (for the period of one year), be exceeded, with a 99% probability, to own funds, (Source: M (NBS) 4 – 12).

Total open interest-rate position/own funds = share of the difference between assets and liabilities with interest rate fixation or with a residual maturity shorter than the given time period (1 month, 1 year, 5 years)

in the total volume of own funds, (Source: BD (HUC) 53 – 04, BD (HKR) 1 – 04).

Share of immediately liquid assets in highly volatile funds: Immediately liquid assets include funds in cash and purchased NBS bills and Treasury bills other than Treasury bills held to maturity and current-account balances at central and other banks. Highly volatile funds include current accounts of central and other banks, current accounts and other non-term deposits of customers and all general government deposits, (Source: Bil (NBS) 1 – 12).

Share of liquid assets (including collateral from reverse repo trades) in volatile funds: Liquid assets other than immediately liquid assets include securities received from a reverse repo trades, Treasury bills held to maturity and all purchased government bonds; their value however is reduced by pledged securities and collaterals provided in repo trades. Volatile funds include also customers' term deposits, (Source: Bil (NBS) 1 – 12, V (NBS) 8 –12).

Fixed and illiquid assets indicator – the share of fixed and illiquid assets in selected liability items; according to NBS Instruction No 3/2004 this indicator may not exceed the value 1 (does not concern branches of foreign banks), (Source: BD (LIK) 3 – 12).

Share of loans in deposits and issued securities, (Source: Bil (NBS) 1 – 12).

Total liquidity position/assets = share of the difference between assets and liabilities in a given time period (up to 7 days, or up to 3 months) in the balance-sheet total. The calculation of the indicator does not include balance-sheet items on which a right of lien is established. Likewise, the calculation does not include off-balance-sheet items other than commitments to accept/provide credit and the values of underlying instruments in the spot and futures operations (but only those in which the underlying instrument is a financial asset that is exchanged for this underlying instrument), (Source: BD (LIK) 3 – 12).

Capital adequacy = the share of own funds in risk-weighted assets (may not fall below the 8% limit), (Source: BD (HKP) 1 – 12, BD (HKR) 1 – 04).

Share of Tier I in own funds = the share of registered capital less the respective part of items of reducing the value of registered and additional capital in the total volume of own funds, (Source: BD (HKR) 1 – 04).

Share of own funds in the balance-sheet total, (Source: BD (HKR) 1 – 04).

Share of the possible loss in own funds in reaching 8% capital adequacy = the share of the loss caused by a fall in the value of the capital adequacy indicator to 8%, in the total volume of own funds, (Source: BD (HKP) 1 – 12, BD (HKR) 1 – 04).

2.2 Insurance companies

Comments on concentration indices calculation:

CR3 index – the share of three insurance companies with the largest volume of the given item in the total volume of the given item in the insurance sector, while the calculation includes only institutions in which the value of the given item is positive.

CR5 index – the share of five insurance companies with the largest volume of the given item in the total volume of the given item in the insurance sector, while the calculation includes only institutions in which the value of the given item is positive.

Herfindahl index (HHI) – defined as the sum of the squares of the individual insurance companies' shares in the total volume of the given item expressed in percentage, while the calculation includes only institutions in which the value of the given item is positive.

As regards the possible interpretation of the value *HHI*, it can be said that concentration in the given item is the same as if there would be in the sector 10 000/*HHI* institutions, each of them having the same volume in the given item. According to the definition of the US Department of Justice, the market is considered highly concentrated if *HHI* exceeds the value of 1,800 and non-concentrated if *HHI* is less than 1,000.

2.2.1 Net profit and profitability ratios of insurance companies

Gross operating costs to premium billing – acquisition costs for insurance contracts + administration overheads + change in transferred acquisition costs for insurance contracts.

Calculation of individual ratios:

ROA = cumulative net profit to current net assets ratio.

ROE = cumulative net profit to current own funds ratio; the calculation does not include branches.

2.2.5 Loss ratio in non-life insurance

Loss ratio is defined as the ratio of loss events occurred, both reported and non-reported, to earned premium:

loss ratio = (sum of the costs for loss events and the change in the provision for insurance benefit) / (premium billing – change in the provision for unearned premium).

2.3 Security dealers

Abbreviations used:

IS-1 – acceptance of a client's instruction to buy, sell or otherwise use investment instruments, and to subsequent forwarding of the client's instruction for the purpose of its execution.

IS-2 – acceptance of a client's instruction to buy or sell an investment instrument and its execution for an account other than the service provider's account.

IS-3 – acceptance of a client's instruction to buy or sell an investment instrument and its execution for their own account.

2.4 Stock Exchange

The source of data is the monthly statistics of the Stock Exchange.

Terminology and abbreviations

11 Terminology and abbreviations

Names of banks and their dividing into groups

Big banks

VÚB – 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., foreign bank branch in Slovakia
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.

Terminology used

Households – the population, i.e. individuals' accounts

Retail – households, sole traders and non-profit companies serving prevailingly 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
FR	France
GR	Greece
HU	Hungary
IE	Ireland
IT	Italy
LT	Lithuania
LU	Luxembourg
LV	Latvia
MT	Malta
NL	Netherland
PL	Poland
PT	Portugal
SE	Sweden
SI	Slovenia
SK	Slovakia
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
IMF	International Monetary Fund
MIM	metainformation system
NAV	net asset value
NBS	National Bank of Slovakia
O/N	overnight interest rate
p. p.	percentage point
ROA	return on assets
ROE	return on equity
RWA	risk weighted assets
SAX	Slovak stock index
SD	securities dealer
SDX	Slovak bond index
SKK	Slovak koruna
SME	Small and medium enterprises
SR	Slovak Republic
VaR	value at risk

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