NÁRODNÁ BANKA SLOVENSKA

Financial Stability Report

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A Executive Summary: Financial Stability in Slovakia in 2007 and Risks for the Near Future

The global economic cycle underwent a fundamental turnaround in 2007. Whereas in the first half of the year the world economy continued its overall favourable development started in the previous period, the second half saw a sudden emerging of accumulated credit and market risks in the world financial markets. These risks were related to the fast growth rate of subprime mortgages in the United States, which lasted for several years. These mortgages, together with other loans sold further by the banks, were promptly securitised and resold in the form of structured securities, particularly to international institutional investors. The motivation behind these transactions was an attempt to achieve higher profits in an environment of low interest rates and ample liquidity in the world financial markets. As the Fed was gradually tightening its monetary policy, more and more of the mortgage loans were becoming unprofitable, which resulted in a sharp fall in the value of securities covered by these loans at the beginning of June 2007. The subsequent uncertainty regarding the size and location of losses in the financial system caused an overall de-leveraging. Paralleled by adverse economic factors (soaring oil prices, fall in real estate prices), this led to a substantial downward correction of forecasts for global economic growth in 2008 and 2009. As already mentioned in the Financial Stability Report for the first half of 2007, the economy and financial system in Slovakia were not significantly affected by the adverse events in the external environment. Also more recent information and analyses has not brought any evidence that the stability of the domestic financial system could be directly or indirectly threatened by the consequences of the mortgage crisis, which, according to some observers, is the worst event in developed financial markets since the 30's crisis in the last century. Even under the conditions of an expected economic slowdown in the euro area's developed countries, the growth of the Slovak economy will probably continue to be dynamic and sound from the viewpoint of its structure. Hence the present trend of increasing indebtedness of enterprises and especially households together with the trend of increasing credit risks in the banking sector will be maintained, however, the rate of increase will be slower than in the previous years. It will be necessary to maintain the focus of prudential supervision on the banks' credit practices, especially in relation to low-income households and small and medium-sized enterprises, as well as on creating of sufficient high-quality capital by banks.

Macroeconomic development in Slovakia

The domestic macroeconomic development was exceptionally favourable in 2007. Economic growth was at a record level due to the positive contribution of both domestic and foreign demand. In the course of the year the inflation fell below 2%, however, due to the increase in global food and energy prices it increased to 2.5% at the end of the year. The external macroeconomic position improved, following a decrease in the current account deficit, which was mainly the result of a better foreign-trade balance. The current account deficit was financed by short-term capital to a greater extent, due to a lower inflow of foreign direct investments. Fiscal policy was tighter than in the previous two years; monetary policy factors had a restrictive impact on the economy.

In 2007, the private sector continued to be increasingly financed by loans of domestic monetary financial institutions. The growth in profitability of non-financial companies as well as in household disposable income was attributable to their largely

positive impact on the financial sector. Serious global problems related to mortgage financing were most probably one of the reasons why the banks chose, as they stated, to pursue a more prudential approach to the financing of domestic real estate sector.

In the first half of the year, the domestic financial market was exposed to fluctuations related to the expectations that, in consequence of favourable developments in economic fundamentals, NBS would lower its rates and nominal koruna exchange rates would strengthen. The signals from emerging markets sent in reaction to the developments in the US and European financial markets in August and November 2007 had only a limited influence on the domestic financial market. Since there were sufficient reserves for meeting the Maastricht criteria in terms of inflation, public finance and convergence of long-term interest rates, moods in the domestic market tended to be positive.

Banking sector performance

The banking sector reached a net income of SKK 17.8 billion in 2007, which represents a year-on-year fall by 1.3%. This, however, was due to a significant fall in profits in one of the banks. Without considering this bank's results the sector's profitability would have increased by almost 17.3%. Interest income grew by 16% on a year-on-year basis and constituted as much as 70% of the total gross profit in the banking sector. Banks increased the volume of corporate loans by 21.5% and, apart from traditional segments, they focused more significantly on the meagrely saturated market of financing of small and medium-sized enterprises. The growing competition in this segment manifested in a certain loosening of credit standards in some banks. To the contrary, banks were tightening their standards especially in the financing of large enterprises and in project financing. In terms of sectors, corporate loans were directed mainly to trade, industrial production and real estate. House purchase loans dominated in the area of retail loans. Household demand for loans was mainly influenced by the growing real estate prices. In terms of customer loans financing, the Slovak banking sector is one of the few EU banking sectors which do not depend on short-term interbank funds.

Banking sector risks and their coverage by capital

The average value of capital adequacy decreased year-on-year from 13% to 12.8%, which was a milder decrease than in the previous years. In the case of certain banks, it will be necessary to increase the capital not only in relation to an expected further growth in loans, but also due to the implementation of Basel II. The quality of capital remains high.

The latest available data for 2006 (EU SILC 2006) point to a relatively high indebtedness of households. After deducting current expenses from disposable income, median loan repayments by households constituted approximately 24% of the remaining income, compared to 21% in 2005. Thus households were becoming more sensitive to decline in their income. Due to increasing real estate prices, positive economic development and the influence of competitive pressures, banks loosened their standards in household lending. In 2007, several banks recorded a significant increase in loans, where the *loan-to-value ratio* exceeds 100%. Hence, the household credit risk is becoming more and more sensitive to changes in real estate prices although most banks have not yet been found to be exposed to a significant impairment of retail loans in the case of a simulated extreme fall in real estate prices. The reason was that, in the past, the majority of these loans were secured by property exceeding the value of loans. The trend of improving the quality of corporate loan portfolio continued in 2007. According to a scenario simulating a twofold increase in the corporate loan default ratio, the capital adequacy of two banks would fall below the level of 8% in a horizon of one year.

Foreign exchange risk in the banking sector remained at a low level in 2007. Simulations indicate that even extreme movements of foreign exchange rates would not have a major impact on most banks.

Interest rate risk was concentrated predominantly in the banking book, i.e. not influencing capital adequacy. Interest rate risk in the banking sector evaluated through VaR was low. However, if the

interest rates increase, banks will be subjected to a relatively significant fall in the economic value of securities held to maturity and for sale. This may have a negative impact on the sector's profitability, should it be necessary to sell some of these securities prior to their maturity.

Although the liquidity of the banking sector as a whole did not substantially change in the recent past, some banks recorded a partial decline in liquidity during the second half of 2007. The banking sector has a sufficiently large volume of liquid assets at its disposal to cover an unexpected withdrawal of 20% of customer deposits or 90% of foreign banks' deposits. In either case the change in liquidity indicators would not exceed twice the average of month-on-month changes in most banks.

Conditions and risks in other financial institutions

Profits of insurance companies grew 24.8% in 2007, reaching the value of SKK 5.6 billion. Hence, the period of robust growth in income of the insurance sector has been continuing since 2004. Insurance companies kept investing most of their technical provisions in low-risk assets. For most insurance companies, the most significant of market risks seemed to have been credit risk in the portfolio of debt securities covering technical provisions. They would be negatively affected by rising interest rates, especially in life assurance.

After the stagnation in 2006, the net asset value (NAV) of mutual funds grew in 2007. Most of their funds were invested in low-risk assets. Equity funds portfolios were the ones most exposed to market risks, with the worst impact being that of a scenario simulating an appreciation of The Slovak koruna. Equity risk was also growing in the second half under the influence of a negative development in global financial markets.

The number of savers in Pillar II of pension saving grew only slightly compared to the end of 2006, due to the expiry of the voluntary entry period and adaptation of the system to graduates' entry into the labour market. As at the end of 2007, pension asset management companies (PAMC) were managing assets worth more than SKK 51 billion. The composition of the aggregate pension funds portfolio also shifted slightly towards a more profitable and, at the same time, riskier division of investment among the individual types of funds (66% of finances are placed in growth funds). Conservative funds are exposed to interest rate risk only, since they have no open equity or foreign exchange positions. Equity risk was the most notable risk in growth and balanced funds due to developments in world markets.

Net value of assets managed in the funds of Pillar III of pension saving reached SKK 25.3 billion. The structure of Pillar III portfolio was to a large extent conservative at the end of 2007. In the course of 2007, a structural change occurred in the composition of assets, in an opposite direction than in Pillar II: the relative importance of funds kept in bank accounts increased. Contribution growth funds investing in shares and units on a large scale were the riskiest from among supplementary pension insurance funds. The riskiness of these funds increased in the second half of 2007, due to a higher volatility of stock markets. However, their market share is relatively low.

Medium-term risks

The situation in the world financial markets remains complicated and its further deterioration cannot be ruled out, especially should the mortgage crisis spread to other segments of the loan market. Further growth in losses could undermine the solvency of key financial institutions, which would finally lead to a greater impact on real economy than previously expected. In the case of such an extremely adverse and less likely scenario, Slovak economy would be affected to a greater degree through the foreign trade channel. However, the factors of a relatively high competitiveness, strong domestic demand and adequate reacting by the central bank would prevent any more significant adverse impact on the domestic financial sector. The results of macro stress testing of the Slovak financial system also indicate that not even an extremely adverse scenario simulating external financial market conditions would have a significant direct impact on the domestic financial market. Although the situation in developed financial mar-

kets has been exceptionally complicated since July 2007, and risk aversion has been generally on the rise, developing countries have remained generally immune to these difficult conditions. However, it is also likely that if the situation continues to deteriorate, developing countries may also be negatively affected, especially those with large current account deficits and unstable financing conditions. The favourable factors of macroeconomic stability together with a very high likelihood of Slovakia entering the euro area on 1 January 2009 decrease the risk of negative impacts of a possible sudden outflow of a significant volume of foreign short-term funds. Stress testing results also show that even if such a situation occurred (e.g. due to profit-taking by some players before the end of the year), its impact on the liquidity of the banking sector would be negligible.

Prudential macroeconomic policies will have to be carried on in the medium and long-term horizon, together with credit risk supervision in the financial sector. The continuing consolidation of public finances is necessary for mitigating the possible risks related to a lasting strong domestic demand. At the same time, this would simultaneously provide an instrument for effective macroeconomic management in the event of asymmetrical shocks affecting the Slovak economy in the euro area. Market flexibility, automatic stabilizers and a consistent and continuous prudential regulatory policy applied to the banking sector would all be important instruments from this point of view. Due to the expected entry into the euro area and the fact that Slovakia is a converging, small and very open economy, it will be necessary to maintain the competitiveness of the export sector and to encourage investments so that they increase the economy's production capacity, which in turn will support the real convergence process. From the macroeconomic point of view it is essential that wage growth is based on labour productivity growth, since it will no longer be possible to maintain price competitiveness by making use of the foreign exchange rate. Slovakia should draw on the experience of converging "old" member countries and try to carry out a long-term sustainable convergence scenario so as to avoid the emergence of an excessively volatile *(boom bust)* economic cycle.

Costs factors remain to be the risk factors for the development of the non-financial companies sector in the medium-term. The growth in prices in individual branches of the energy sector, influenced by dominant companies, is affected especially by a fast growth in oil prices and prices of energy commodities. Higher input prices may cause the real sector's expenses to grow and thus bring about a fall in profitability (which is presently at a relatively high level). Growing shortages of qualified labour may then contribute also to an increase in companies' expenses.

In the household sector, the development of real income will be important in the medium-term outlook. If income growth is faster than growth in prices and living expenses, indebted households will not necessarily feel tensions in their budget. Loss of income due to unemployment is not a significant risk factor thanks to the favourable situation in the labour market.

B Financial Stability Report

1 External conditions for financial stability

1.1 External economic development

From the viewpoint of global economy and financial markets, 2007 was a turning point in the economic cycle, accompanied by an adverse system event. The episode which began in July 2007 as the crisis on the US sub-prime mortgage market spread to the US, UK and euro area interbank markets.[1] As a result of a lasting intense insecurity regarding developed financial markets, the performance of global economy began to fall in the last quarter of 2007.

1.1.1 The world economy

The largest developed economies started to show signs of a slowdown in the second half of 2007

The growth rate of US economy declined remarkably in the fourth quarter.[2] A fall was recorded especially in the processing industry and in the building sector. Growth in employment and consumption slowed. After their peak in the summer, the European indicators began to fall. In Japan, the fourth quarter saw a severe slump in corporate capital investments[3] and the consumer and trade sentiment indicators fell in a similar way.

Table 1 **World output and world trade volume** **(year-on-year growth in %)**

	2006	2007	2008[1)]	2009[1)]
World output	5.0	4.9	3.7	3.8
Developed economies	3.0	2.7	1.3	1.3
United States	2.9	2.2	0.5	0.6
Euro area	2.8	2.6	1.3	1.1
Japan	2.4	2.1	1.4	1.5
Emerging economies	7.8	7.9	6.7	6.6
Central and eastern Europe	6.6	5.8	4.4	4.3
Asia	9.6	9.7	8.2	8.4
China	11.1	11.4	9.3	9.5
World trade volume	9.2	6.8	5.6	5.8

Source: IMF: World Economic Outlook, April 2008.
Note: Weights for individual countries used in the calculation of the aggregate growth rates of groups of countries have been revised using data published in October 2007.
1) Current forecasts.

1 *Further information also in: Národná banka Slovenska: Financial Stability Report for the First Half of 2007, December 2007, boxes 1 and 2.*
2 *In the 4th quarter, the real GDP in the United States was only growing by 0.1% compared to 1.2% in the previous (3rd) quarter. Despite a weak dollar, net exports stand well in for the fading domestic demand and may help the country to avoid recession. On top of that, the stimulating measures within the monetary and fiscal policies might also start to influence the situation in the second half of 2008. However, their effect is considerably uncertain due to the falling real income and growing indebtedness of households, which may adversely influence their consumption.*
3 *A year-on-year fall of 7.7% in the 4th quarter. This means that investments were falling for three quarters in a row, mainly due to new and stricter safety regulations in the building industry. Thus the advancement of the Japanese economy is particularly dependent on foreign demand at a time when global growth prospects are unfavourable.*

Table 2 **Real GDP growth and annual rate of HICP inflation** **(year-on-year change in %)**

	GDP growth						Inflation (HICP)					
	2006	2007	2008	2009	*2008*	*2009*	2006	2007	2008	2009	*2008*	*2009*
	Spring forecast of April 2008				*Difference from the autumn forecast of November 2007*		*Spring forecast of April 2008*				*Difference from the autumn forecast of November 2007*	
Euro area	2.8	2.6	1.7	1.5	-0.5	-0.6	2.2	2.1	3.2	2.2	1.1	0.2
EU-27	3.1	2.8	2.0	1.8	-0.4	-0.6	2.3	2.4	3.6	2.4	1.2	0.2

Source: European Commission: Spring Forecast, April 2008.

The continuing strong growth of emerging economies was supported especially by a robust domestic demand

On the contrary, developing countries continued to flourish in the second half of 2007, despite the falling growth rate of their exports. The growth in these countries was mainly fuelled by a strong domestic demand, disciplined macroeconomic policies and high prices of food and raw materials – all of which are significant export items of some developing countries. However, it is very likely that the slowdown in developed economies will soon be perceived in the performance of emerging economies, too.

Inflation began to rise in the middle of 2007

Apart from negative consequences of the financial crisis in developed countries and a spillover of these effects to emerging economies, global economic growth in the coming period is also exposed to a risk of growing inflation expectations. Inflation has been increasing in both developed and developing countries since mid-2007, mainly due to the influence of growing commodity prices, but the Federal reserve system (Fed) reacted, by lowering interest rates, rather to problems in the financial system and to the risks of a sharp decline in economic activity.[4] Key rates of the central banks in the euro area and in Japan remained unchanged, whereas the key rates in emerging economies were raised also in reaction to domestic demand pressures.

1.1.2 The EU and euro area

Expected slowdown of European economies

Throughout most of 2007, the position of EU and euro area economies was strong enough so as to enable them to face the deteriorating global economy outlooks – macroeconomic stability parameters were favourable and the growth of GDP was mainly supported by private consumption and investments. However, in line with the expectations based on data obtained from surveys of consumer and investment sentiment, the growth rate of EU and euro area economies fell to 0.5% or 0.4% in the fourth quarter.[5] An adverse influence of the external economic environment, a strong euro and the effects that the falling consumer and investor confidence and tighter lending conditions have on domestic demand, all make a further decline in the EU or euro area economies in 2008 and 2009 very likely.

1.1.3 Countries in the Visegerad (V4) region[6]

A slight slowdown in the economic growth rate in the V4 region is also expected

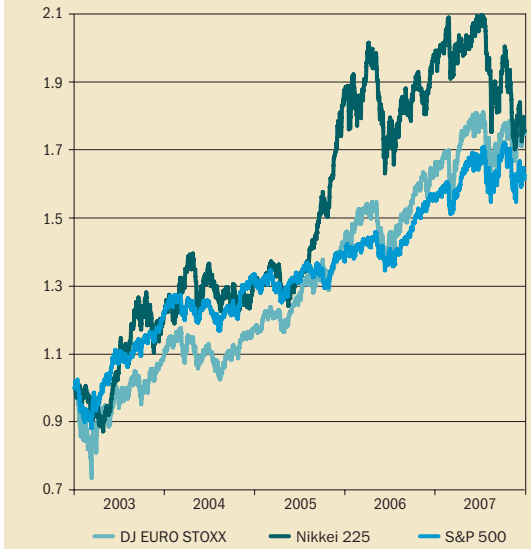
Economies in the V4 countries continued to grow dynamically in 2007. The Hungarian economy was the only exception in that its growth rate slowed to historically low levels due to the government having taken stabilising measures which negatively influenced the economic sentiment of the

4 *The US Federal Reserve System faced a dilemma, due to its double legal mandate, over how to preserve the stability of currency and to support the creation of jobs and economic growth at the same time.*
5 *Compared with the 3rd quarter, the growth rate in both EU and the euro area slowed by 0.3 p.p.*
6 *Since the entire Chapter 2 is devoted to a detailed analysis of development in Slovakia, in this section the other countries in the V4 region – the Czech Republic, Hungary and Poland – will be discussed.*

Chart 1 **Year-on-year growth in GDP in % (constant prices)**

Source: Eastern Europe Consensus Forecasts, 21 April 2008
1) Forecasts.

Chart 2 **Stock market performance (Index, January 2003 = 1)**



Source: http://finance.yahoo.com.

markets. Thus the growth of economy was only generated by net export and a change in inventories. Growth in the Czech Republic and Poland was supported mainly by final consumption and gross capital formation. Net exports contribution to the overall growth was marginally positive in the Czech Republic and negative in Poland. As the V4 region has strong business ties with the euro area, it is legitimate to expect – with a forecast fall-off in the euro area in 2008 and 2009 – that the economic activity will decline slightly in the V4 countries, too.

1.2 International financial markets

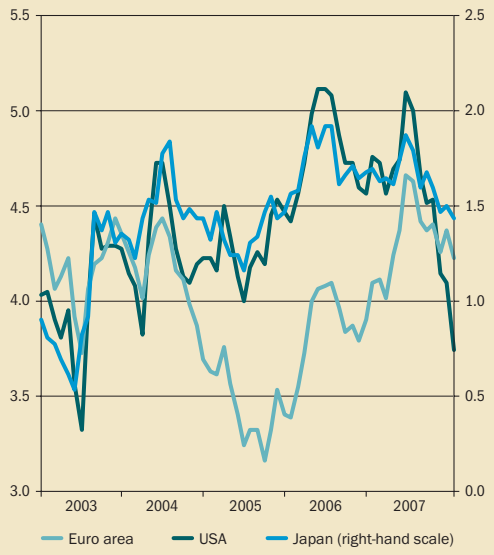
The wide financial crisis which started as a crisis of the US mortgage market in mid-2007 has shown how firmly integrated are the US and European economies and financial markets.

1.2.1 Stock markets

The major stock markets were volatile and their performance was poor in 2007. Stock markets in emerging economies came as a positive surprise

The outbreak of the US mortgage crisis in July 2007 induced a general sell out on the major international markets, with an adverse impact on prices. The American and European markets erased previously made profits and the Japanese market fell below its level of the end of 2006. Almost all sectors recorded a fall in prices (apart from telecommunications, utilities, energy and consumer goods), with financial companies being affected most intensively. The steep increase in market volatility was, among other reasons, caused by an increased perception of risks with respect to the future performance of economies. The Fed alleviated this situation in September 2007 by lowering the federal funds rate by 50 basis points to 4.75%. The subsequent growth in the major stock markets lasted until mid-October. The S&P 500 index even reached its historical peak. However, the continuing fears of investors as to economic growth and soundness of the financial sector led to another fall in prices in November. At the end of the year, another short-term market recovery appeared, following a further cutting of rates by the Fed. Developments in the stock markets of developing countries were rather unusual, since these countries are usually affected first and most intensely during periods of high volatility. In spite of that, the shares of emerging markets – meas-

Chart 3 **10-year government bond yields (monthly averages in %)**



Source: International Financial Statistics, IMF.

ured by the MSCI index – recorded significant improvements.[7]

Unfavourable outlook for stock markets

A noticeable fall in the financial leverage in general resulting from the global credit crunch and a falling performance of global economy will most probably increase the pressure on companies' profits and adversely affect the performance of stock markets in the medium-term outlook.[8] In 2008, due to a persistently low investor confidence, a reversal may occur in the medium-term trend of stock market growth which started in 2003.

1.2.2 Bond markets

US and euro area government bonds yields were falling. Nevertheless, a risk of their sharp increase exists

The government bond yields started to fall in the second half of 2007, in line with the deteriorating economic outlook, whereas in the first half they tended to increase. Investors also contributed to the fall in yields by increased demand. They were searching for a safe haven for their funds in the circumstances of an increased volatility in the financial markets. According to the ECB,[9] yields on long-term US government bonds were falling from levels lower than those that would have met consensual expectations in regard to macroeconomic growth and inflation in the United States. This might have been caused by global structural changes carried out by countries with large surpluses of foreign reserves (China, Japan, oil-exporting countries). Furthermore, 10-year US bonds with a negative real yield are not an attractive investment in the long term. Hence a sharp increase in long-term yields on US government bonds as well as on euro area bonds, due to a high correlation, poses a risk for the future.

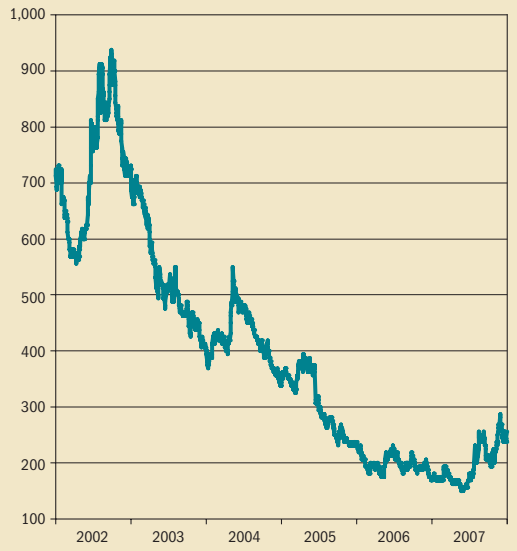
Investors believe that risks for the euro area economy are lower than those for US economy

Yields on euro area bonds fluctuated less than those of the US. While the yields on long-term US government bonds fell from their highest level in June 2007 by 100 basis points by the end of December, the yields on euro area bonds fell by only 30 basis points in the same period.[10] The fact that volatility in the US government bond markets is notably higher than in the euro area means that investors consider the euro area less exposed to the economic consequences of global financial turbulences. Such a perception is well-founded since the real European fundamental are better than those of the US, e.g. higher savings rates of European households, better lending procedures, stronger household balances and a more favourable macroeconomic outlook in the euro area.

On the contrary, yields and spreads of government bonds in developing countries were growing; their further growth is expected

7 *For instance, while the S&P 500 only appreciated by 3.7% in 2007, the MSCI Emerging Markets improved by as much as 36.5%.*
8 *Massive sell off sales in January 2008, which affected all sectors without exception as well as emerging markets, may indicate a changing perception of the main sources of risks. Performance of stock markets will be probably most affected by the development of real economy.*
9 *ECB: Financial Stability Review December 2007.*
10 *The interest rate differential reached 70 basis points in the favour of euro in 2008, and was the highest since 2002.*

Chart 4 **J. P. Morgan EMBI Global Composite Spread (daily data, basis points)**



Source: Magyar Nemzeti Bank – Report on Financial Stability, April 2008.
Note: J.P.Morgan EMBI Global Composite Spread – difference between the yields on USD-denominated government bonds of developing countries and yields on comparable bonds issued by the US government.

Chart 5 **Spreads of high-yield corporate bonds (basis points)**

Source: Sveriges Riksbank – Financial Stability Report 2008:1.
Note: As per the definition by Moody's and Merrill Lynch, bonds are classified as „high-yield" if their rating by Moody's/Standard & Poor's is Ba/BB or lower.

On the contrary, yields on long-term government bonds of developing countries were growing by approximately 30 basis points between July and November 2007, signalling a certain sell out of these securities, probably due to lasting inflation pressures in developing countries.

The spreads of developing countries' government bonds increased as well, but only to a limited extent, from historically low levels. In view of deteriorating performance and weaker financial fundamentals of these economies, a similar development can be expected in the near future.

Credit spreads of corporate bonds were growing. Corporate default rate will increase

A sharply increased risk aversion caused a notable growth in corporate bond spreads in the entire spectrum of ratings. This was especially the case with bonds with speculative ratings.[11] In spite of this, these spreads remain below their historical average. The growth in spreads and the number of ratings lowered to a speculative grade was the highest among financial companies. Non-financial companies proved to be more resilient thanks to low default rates, high profitability and the non-existence of direct exposures to the sub-prime mortgage market. However, due to the anticipated negative macroeconomic effects we may expect the default rate (and the credit risk) of non-financial corporations to grow in the coming period.

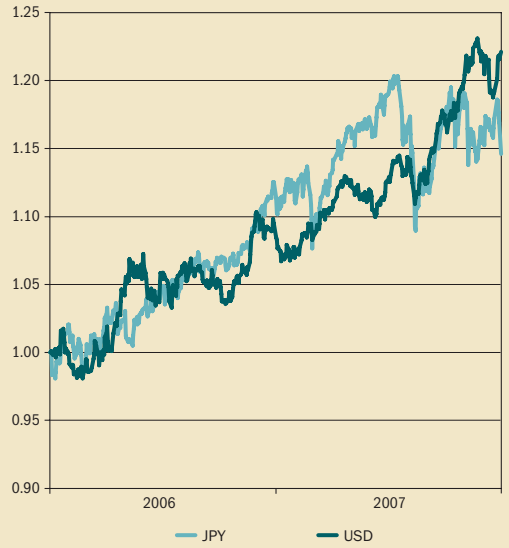
1.2.3 Foreign exchange markets

The US dollar kept depreciating vis-à-vis the euro. The volatility in foreign exchange markets continued

In 2007 the US dollar continued to depreciate vis-à-vis the euro to historically lowest levels. This was caused by the development in the medium-term interest rate differential providing a support to the euro. The steep increase in volatility of many bilateral exchange rates between August and September was caused by turbulences in the

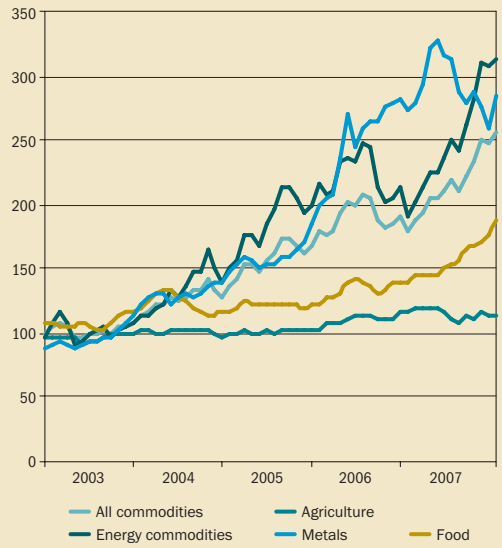
11 *Between July 2007 and March 2008, credit spreads of corporate bonds with speculative-grade ratings grew by approximately 400 basis points in the US and by 550 basis points in the euro area.*

Chart 6 **Development of the nominal exchange rates of the Japanese and US currencies vis-à-vis the euro (daily data, index, 2 January 2006 = 1)**



Source: Eurostat.
Note: Index growth means depreciation of currencies vis-à-vis the euro.

Chart 7 **Performance of commodity markets (USD, index, year 2000 = 100)**



Source: International Financial Statistics, IMF.

financial markets. From mid-June to mid-August, Japanese yen was sharply appreciating due to investors withdrawing from yen carry trades. At the same time, there was also a sharp weakening of currencies with high interest rate yields, especially the Brazilian real and Turkish lira. The reason was that the significantly higher volatility on markets with various types of financial assets caused a decrease in the return on such trades per risk unit and an increase in the likelihood of adverse foreign exchange fluctuations.

The risk of a substantial depreciation of the US dollar was increasing

Higher uncertainty and turbulences in the financial markets may, if the dollar continues to weaken, encourage the re-allocation of portfolios away from dollar assets even in the case of US investors' strong preference for domestic assets (bonds in particular). This would cause a significant depreciation of the dollar in the currently high needs for external financing. The development of exchange rates will be connected with an exceptionally high uncertainty in the coming period.

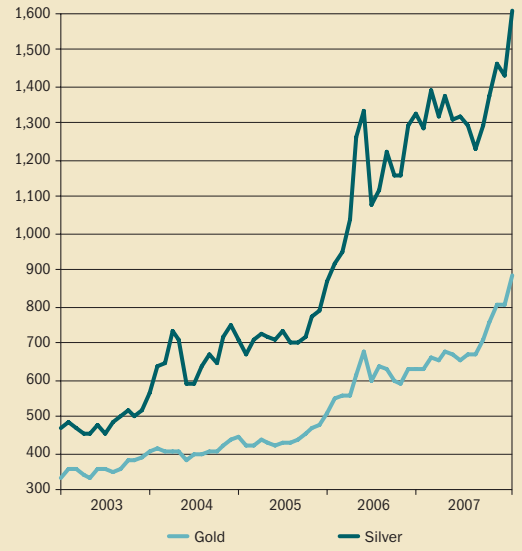
1.2.4 Commodity markets

Oil prices reached new record heights but may decrease due to the expected fall in the performance of global economy

Commodity markets continued to grow in 2007. Oil prices reached new ceilings due to strong demand, geopolitical tensions, weaker deliveries by OPEC, slower than expected growth of deliveries by non-OPEC countries, and decreasing stocks. Non-energy commodity prices were growing as well, especially food and metal prices. Food prices were growing due to poor harvests in the previous years as well as due to more crops being used for biofuel production. A weak US dollar is another important factor behind the growth in commodity prices. In 2008 and 2009 a stabilisation of prices of oil and other commodities can be expected, as a result of a lower performance of global economy. However, the continuing speculative purchases and geopolitical tensions may push oil prices to the opposite direction as well. Prices of precious metals will probably continue to grow owing to the safe-haven effect in the reaction of investors to the financial market turbulences.[12]

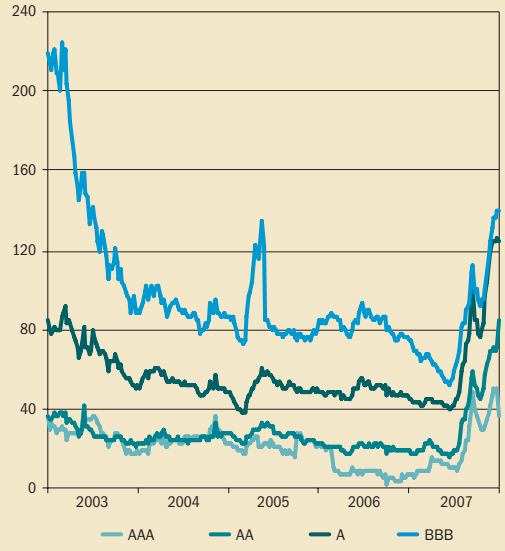
12 *In March 2008 gold was traded at prices exceeding USD 1000 per ounce.*

Chart 8 **Prices of gold (USD/Troy ounce) and silver (US cent/Troy ounce)**



Source: International Financial Statistics, IMF.

Chart 9 **Iboxx European corporate credit spread index (basis points)**



Source: Datastream.

1.3 The euro area financial sector – developments and risks[13]

1.3.1 Euro area banking sector

Credit and counterparty risks in the euro area banking system have grown

The strong position of major banking groups in the euro area, enabling them to resist the adverse effects of a turning point in the credit cycle, was secured by a strong growth of their profitability in the preceding years. However, the bank's balances have been weakened by losses from the revaluation of structured securities as of the beginning of the second half of 2007, together with credit losses caused by the transfer of bad assets back to bank balances. This has made banks more vulnerable to higher than expected credit losses. Although the outlook for the euro area economy is less favourable than prior to the onset of the mortgage crisis, the economy should continue to grow, which would boost banks' lending. However, the uncertainty associated with such a scenario is high and the risk that the impact of an adverse development in financial markets on financial conditions and real economy will be worse than is currently expected has grown.

Highly indebted households are risky

A slowdown in the growth rate of house prices and a significant tightening of the financial conditions of euro area households in the last two years increased the risk of insolvency of debtors, especially of those with a high rate of indebtedness. The situation of highly indebted households may be further worsened by a possible substantial correction in the euro area economic activity. The growth rate of household loans in the euro area slowed further in 2007. In spite of that the level of growth remained relatively high, especially in the case of loans with longer maturities (growth rate of around 7%), where interest rates are lower.

Corporate default rate has been growing moderately so far but may accelerate

Corporate balances were strengthened and grew more resilient to adverse shocks also thanks to the favourable economic conditions in recent years. The latest available data do not indicate any notable crisis-related problems, since the growth rate of corporate loans continued to increase. However, in the future this rate is likely to decelerate due to an expected slowdown in economy. The growth in financing costs, both through the market and through banks, made financing complicated

especially for highly leveraged companies. These companies are also vulnerable to slowdowns in the cash flow. The latest available data only give evidence of a modest growth in default rate in the euro area. Nevertheless, its further growth in the coming period is likely with respect to the joint influence of external factors (tightened credit conditions, slowdown in growth, appreciation of the euro and growing oil prices). If this happens, companies' access to finances may become more difficult, which will further increase the risks to financial stability.

1.3.2 Euro area insurance sector

Euro area insurance companies faced the consequences of the financial crisis with relative ease

Most insurance companies only reported slight losses related to turbulent markets as at the end of 2007.[14] Premiums written continued to grow in most cases. Information reported to supervisory authorities by the insurance companies indicate that the exposures of euro area insurance companies against structured credit instruments tied to US sub-prime mortgages are generally low. However, their investment income was under pressure due to the slump in stock markets in the second half of 2007.[15]

Insurance companies may have to face higher claims incurred related to liability insurance for damages caused by investment managers

A longer period of low interest rates and the continuing negative stock market development remain the most significant risks to insurance companies. In addition to that, life insurance companies have to deal with the average endowment age being higher than expected ("longevity risk"). Non-life insurance and reinsurance companies remain vulnerable to losses associated with large natural disasters. In relation to the mortgage crisis, insurance companies may experience higher claims incurred associated with recovery of claims by investors and customers of financial firms or managers who are insured against this occurrence.

1.4 Medium-term risks from external conditions

On the upside:
- Global economy slowing more than expected
- Crisis spreading outside the sub-prime mortgage sector
- Further growth in losses of euro area banks which – if their capital is not replenished – may limit their ability to bear risks.
- Slow progress in the solution of global imbalances, risk of their re-allocation

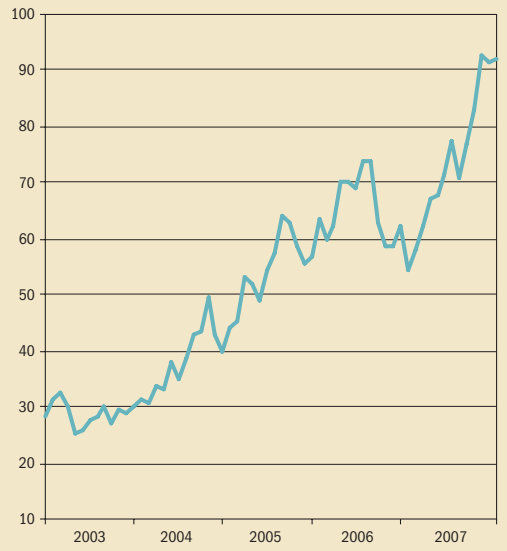
On the downside:
- Low direct exposure of the V4 region to consequences of the financial crisis
- A lower vulnerability of developing economies to an increased risk aversion compared to the past.

A potential spread of the mortgage crisis to other loan market segments is a significant risk to financial stability

The financial crisis which broke out in the US sub-prime mortgage market and subsequently spread to international loan and money markets increased the probability of a pronounced slowdown in the global economy in the short- to medium-term horizons.[16] The factors include: a higher than expected slowdown in the US economy in the last quarter of 2007, a substantial tightening of credit conditions of banks *(credit crunch)*, a very likely negative impact of the weak demand in developed economies on the growth rate of developing economies, high and volatile prices of oil and other

13 *According to ECB analyses.*
14 *A substantial amount of losses has not been realized due to the classification of securities as "held to maturity".*
15 *Life assurance companies are more sensitive to an adverse development in stock markets than non-life insurance and reinsurance companies, because they rely on investment income to a much greater extent. This fact was also reflected in a different development of prices of insurance companies' shares; while life assurance companies' shares remained under pressure at the beginning of 2008, the shares of non-life insurance and reinsurance companies were recovering in comparison with the stock market as a whole.*
16 *The International Monetary Fund gives a 25% probability that the growth rate of global economy will be less than 3% in 2008 and 2009, which corresponds to a global recession.*

Chart 10 **Oil prices**
(Brent, USD/barrel)



Source: International Financial Statistics, IMF.

commodities, and growing inflation. Thus the risks to financial stability have grown notably. The likely deeper economic recession in the US and other countries could, due to a wide-scope impairment of loan portfolios, cause the crisis to spread outside the sub-prime sector, too. [17]

Systemic risk for the global financial system grew markedly

In certain circumstances, the aggressive monetary stimulation policy by Fed may not be able to support the economy. Falling rates and a weakening dollar motivate investors to invest money in commodities. The subsequent faster growth of fuel, energy and food prices causes the real income of US households to fall. This together with their large debt burden limits their consumption – e.g. in April, car sales in the US fell to their lowest level in the last 13 years. The effect of lower central bank rates on the banking system is also rather limited if the system is facing increased credit risks of counterparties and the associated uncertainty.[18] Neither the debt burden of households is alleviated by these lower rates, in spite of what could be expected with respect to an opposite situation when monetary tightening led to an increase in household debt burden. The US economy stimulation programme focusing on more than 130 million households may not bring immediate results if households decide to use the additional resources to repay their debts or for savings rather than for consumption.[19] Collapse of the system may also be induced by a further growth in losses (from loans and market revaluation of financial instruments covered by loans) in financial institutions of systemic importance[20] together with a potential increase in the number of their insolvencies. The impact of such an event – whose probability has grown – on global economy and financial markets would be very detrimental.

In order to restore confidence in the markets it is essential to increase transparency

The enormous internal indebtedness of the US private sector (the amount of the debt of households and non-financial companies constitutes 175% of GDP) makes the start-up of the US economy

17 *Data by Merill Lynch and Loan Performance on 60-day delinquencies in the segment of mortgages with prime debtors (prime segment) indicate that delinquencies in this segment are growing faster than in the previous years. The default rate is slightly beginning to grow also in the segments of commercial real estate loans, credit cards and car loans. Another very significant volume-related segment associated with great concerns over the growth in the default rate is the LBO ("leveraged buy-out"). Leveraged corporate financing was also recently associated with a relaxed credit discipline.*

18 *Although Fed has been supplying the markets with a virtually unlimited liquidity since August, using various own loan facilities, the only effect is that it is helping companies to pay their own liabilities. It is not helping to halt the fall in prices on the real estate market. Thus the uncertainty remains high although losses have been published and banks have been increasing their capital due to the expected further growth in losses from exposures against sub-prime mortgages (and other loans). The unusual spreads in money markets give proof of a high perceived risk in both the US and euro area banking systems. One of the events documenting this risk is the collapse of Bear Stearns & Co., an important financial company, saved form bankruptcy by a Fed intervention.*

19 *Since May 2008, the US Treasury has been providing eligible persons with sums amounting to max. USD 600 per person for the purpose of economic stimulation. Parents cash in further USD 300 for children below 17 years of age.*

20 *Depreciation of assets related to the mortgage crisis, published jointly by 45 banks worldwide, reached the volume of USD 193 billion as at March 2008. The March 2008 IMF estimate of total crisis-related losses was at the level of USD 945 billion (approx. 7% of GDP). The possible credit losses could decrease the aggregate capital adequacy of US banks by 250 basis points and that of European banks by 150 basis points.*

Box 1 The mortgage crisis

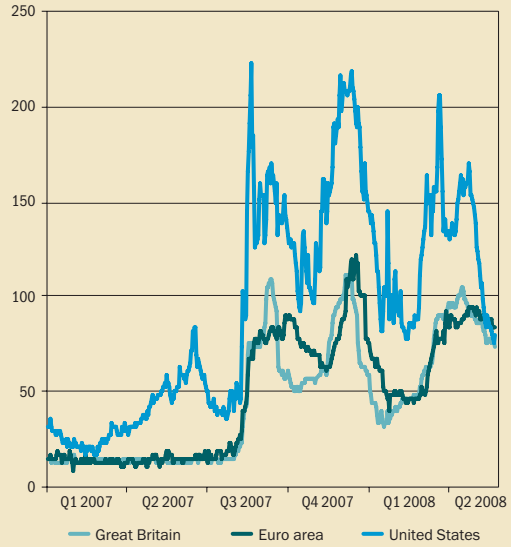
The period which preceded the current turbulence on world financial markets was characterised by an exceptionally favourable development of the world economy which swiftly recovered from the slowdown of 2001 and achieved record growth rates at simultaneously low inflation rates during 2004 to 2006. This development was accompanied by an exceptionally strong performance of financial markets. Asset prices were growing fast and the development on multiple markets was showing historically low volatility levels. Incomes of financial institutions were high above the average and their capital position was strong. Low interest rates and growing income supported the indebtedness of the private sector without exerting any significant pressure on the balances of companies and households.

Structural changes in the financial system, especially in the US and in other developed countries, were encouraged by an intense financial innovation which manifested especially in a fast outspread of instruments for transferring credit risks, allowing to actively trade in credit risks as a specific type of asset. These instruments include the credit default swaps and various structured securities such as collateralised debt obligations. The expansion of these instruments within the framework of financial intermediation was associated with spreading the originate-and-distribute business model. Instead of holding the provided loans in their balances, credit institutions were selling them on capital markets with the help of the above instruments.

At the beginning of 2007, delinquency rates of mortgage loans in the *sub-prime* segment of the US mortgage market, which had been growing for a long time, and subsequent bankruptcies of multiple smaller and larger credit institutions in this segment, gave rise to a gradual revaluation of credit risks. The fall in the market value of securities covered by *sub-prime* loans gained momentum in June 2007, after the losses of hedge funds which invested in these securities had been published. Credit spreads of structured securities were affected in a particularly adverse manner when rating agencies unexpectedly decreased and revaluated the rating of a large volume of these securities in mid-July 2007. Information from the US housing market were becoming more and more negative, which broadened the investors' general mistrust of structured securities induced a slump in the demand for them. This caused that many commenced operations could not be finished.

The end of July saw the surfacing of problems with rolling over ABCP *(„asset-backed commercial paper")* programmes. Investors began to withdraw from this market due to concerns over the quality of underlying assets, which hampered the financing of special purpose vehicles (e.g. the structured investment vehicle). Through these vehicles, investment banks were involved in the securitization of purchased mortgage loans and other assets covered by these loans which were subsequently packed in tranches with different risk profiles and sold to institutional investors in the form of structured securities. The providers of back up financial coverage of special purpose vehicles' obligations, mostly banks which owned them, were forced to turn to interbank market for the necessary resources. But the liquidity of the interbank market was falling as banks were expecting the requirements for back up financing to grow and kept free liquidity for their own purposes. For instance on 30 July, when the German bank IKB was unable to honour the obligations of its special purpose vehicle based on ABCP financing, its main shareholder, KfW, supported it by providing cash.

Chart A **Difference between the three-month market rate and the rate for corresponding government bonds (basis points)**



Source: Sveriges Riksbank – Financial Stability Report 2008:1.

On 9 August, the built-up tension in the US, UK and euro area financial markets burst out simultaneously

and with full force in the form of a sharp increase in spreads between three-month interest rates (USD LIBOR, GBP LIBOR, EURIBOR) and rates for the corresponding treasury bills (Chart A), increase in the volatility in overnight and longer rates, and decrease in volumes. Apart from an increase in liquidity risk, the growth in the risk premium reflected credit risk of counterparties related to the generally growing mistrust caused by a lack of information on the real size of risks of financial institutions originating in exposures against sub-prime loans. Central banks reacted immediately by injecting an unprecedentedly large volume of liquidity into financial markets and by making public statements through their representatives aimed at situation calming down on the markets. Central banks in several developed economies (USA, euro area, Japan, UK, Canada, Switzerland and Australia) adapted their operations so as to be able to continue to effectively implement monetary policies and to maintain control over short-term rates. Based on the scope and nature of problems and on the characteristics of operating frameworks, the measures taken by the respective central banks included increasing the volume and periodicity of operations, broadening eligible counterparties and collaterals, extending the maturities of instruments and implementing discretional measures. Some central banks implemented coordinated activities in December 2007, such as provisional mutual monetary operations in the form of dollar swap lines between the Fed, the ESCB and the Swiss National Bank.

Tensions in financial and other markets have continued since the beginning of 2008. Nevertheless, their nature has changed, shifting from concerns related to liquidity more to concerns over the credit quality of assets. Weak data reported by purchase managers and by the US labour market at the beginning of 2008 indicated a substantial slowdown in the US economy, which contributed to the increase of concerns over global growth. The published losses of major global financial institutions for the 4th quarter of 2007 and 1st quarter of 2008 were larger than expected. *Monoline insurers* also landed in financial difficulties, which automatically lowered the credit quality of structured securities and municipal bonds guaranteed by these institutions. The US residential real estate market continued to fall. Bear Stearns, a major financial company which had faced bankruptcy due to its excessive engagement in the sub-prime mortgage sector, was bought on 14 March by its competitor, J. P. Morgan Chase, for USD 240 million following an agreement with the Fed which provided USD 30 billion for covering its bad assets.

The Fed reacted to this adverse outlook for future development by continuing with its aggressive easing of monetary policy – the Board of Governors decided in their emergency meeting of 22 January 2008 on lowering the rate for federal funds by 75 basis points, followed by another 50 basis points one week later. On 13 February 2008, President Bush informed on a household-focused economic stimulation package (Footnote 19). Several central banks reacted to the continuing tensions in financial markets by proceeding with their coordinated effort to inject additional liquidity to the markets. In addition to its TAF *(term auction facility)* programme implemented in December 2007 with the total volume of USD 150 billion, the Fed announced the introduction of a new programme on 11th March, based on lending TSFL *(term securities lending facility)* securities – lending Ministry of Finance securities in the volume of USD 200 billion for 28 days in exchange for other designated securities. Later, on 16 March, it created a new *primary dealer credit facility* – overnight funds for primary dealers in exchange for specific collaterals.

difficult if there is no sufficient inflow of foreign resources, especially into the stock market. However, stock market can only recover if there is an improvement in the transparency of the internal structure, value and ownership of structured securities tied to mortgage loans and other types of loans. It is impossible to solve this crisis without closing this information gap. However, some financial institutions are not sufficiently stimulated to do so and the solution to this problem will be very time-consuming anyway (it will be necessary to adapt the international regulatory and accounting rules).

Risks to the stability of the euro area financial system grew significantly in the second half of 2007

Increased uncertainty fell upon the business environment of financial institutions – a sudden change in conditions may expose their balances to further strong pressure. The increased credit risk for banks

in the short- and medium-term period is associated with a cooling down of the housing market[21], the commercial real estate market, and a *leveraged buy-out business*. Counterparty risks grew in banks significantly exposed to hedge funds *(prime brokerage business)* and financial guarantors.[22] Further losses of banks related to the market revaluation of securities and to the transfer of assets from off-balance sheet back to on-balance sheet *(re-intermediation effects)*, together with the effects of real economy, may (significantly) influence the profitability of (some) euro area banks[23] and impair their risk-bearing ability[24] in the event that capital will not be replenished. As a result of a higher risk premium, acquiring fresh capital has become more expensive, which is another unfavourable fact.

The V4 region is not directly threatened by the crisis

The V4 region's direct exposure to the impacts of the crisis in developed financial markets is low thanks to a very low exposure of banks to the US sub-prime mortgage market, a relatively low – albeit growing – financial leverage in the financial systems of countries in the region, and the fact that these countries are more linked to the euro area than to the US. The Hungarian economy remains the most vulnerable in the region.[25, 26]

Developing countries' financial markets remain vulnerable to a further increase in mistrust on the markets, although probably to a lesser degree than in the past

The developing countries' markets were not generally affected by the consequences of the mortgage crisis. Their resilience was supported by more developed institutions, good economic fundamentals, prudential macroeconomic policies and a broader investor base. In spite of that they remain vulnerable, although probably less than in the past, to new waves of investor mistrust and risk aversion. Among the most vulnerable are countries with

Table 3 **Vulnerability of the regions in developing economies in relation to transmission channels**

	Financial transmission channel	Transmission channel of real economy	Vulnerable countries
Eastern Europe	high	medium high	Baltic countries, Bulgaria, Romania, Hungary, Turkey
Asia	low	medium high	China
Latin America	medium	medium	Venezuela, Ecuador, Argentina, Mexico

Source: Banco de España.

21 *The effects of a fall in real estate prices in Europe will not be as pronounced as in the US, owing to a more conservative mortgage financing.*

22 *These insurance companies (monoline insurers) were assuming, in exchange for a fee, part of the credit risk contained within structured securities. This improved the securities' risk profile, granting them a higher credit assessment. In the fourth quarter of 2007 the two largest credit providers, Ambac and MBIA, published a combined loss in a volume of USD 5.6 billion as a result of the negative development in loan markets. This loss amounted to the aggregate income of these institutions for the preceding 15 quarters. Since the credit guarantors themselves are in a very bad financial situation, the value of securities guaranteed by them is falling and thus creating losses to their holders.*

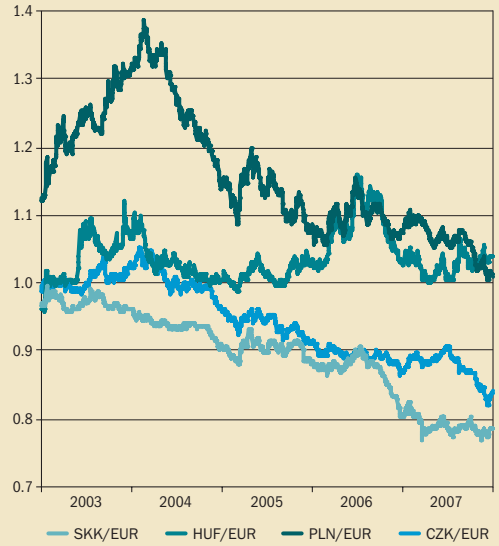
23 *Profitability measured by the return on capital (weighted average of ROE) fell from 18.45% in 2006 to approximately 15% in 2007. The ROE median fell from 17.7% to a level slightly above16% in the same period.*

24 *Solvency indicator (weighted average) fell from 11.53% in 2006 to 10.97% in 2007. The reached capital adequacy figures exceed the minimum limits, which demonstrates that the euro area banking sector has a good capacity for shock absorption.*

25 *A detailed evaluation of the region is available in the IMF publication – Regional Economic Outlook: Europe. April 2008.*

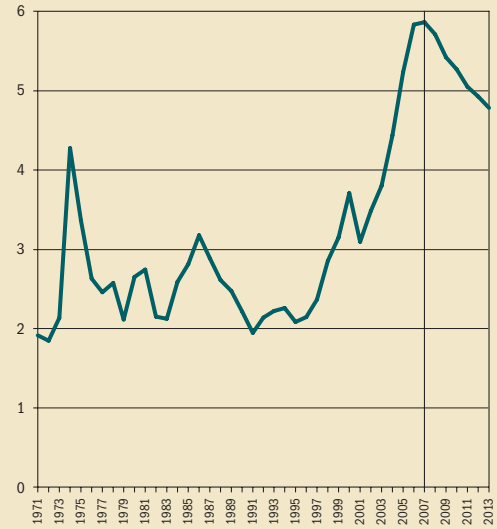
26 *On 14 March 2008, Standard & Poor's changed its outlook for the rating of Hungary's long-term liabilities from stable to negative, which adds to the probability of a future decrease in the rating from its current grade, BBB+ (3 grades above the speculative zone). This change in the outlook was brought about not only by a weak economic outlook (low growth and high inflation) but also by the residents' resistance to government measures aimed at consolidating the budget, which they expressed unequivocally in a referendum held on 9 March 2008.*

Chart 11 **Nominal exchange rates of V4 countries' currencies against the euro (daily data, index, 1 January 2002 = 1)**



Source: Eurostat.
Note: A fall in the index represents the appreciation of currency vis-à-vis euro.

Chart 12 **Global imbalances**



Source: IMF.
Note: Absolute sum of current account balances in percent of world GDP. Values to the right from the line indicale IMF staff projections.

large current account deficits, financed mainly by foreign loans and portfolio investments.[27] A higher rate of investor discrimination among the individual countries or regions can be expected, depending on their economic and financial characteristics.

Only a slight progress in resolving global imbalances

A general correction in the development of global economy supports the solution of global imbalances. However, the continuing low flexibility of exchange rate regimes in countries with large current account surpluses hampers any substantial progress of their decrease. In terms of the geographical composition of capital flowing into the US, East Asian countries and oil-producing countries have maintained their dominating position[28] and the Chinese trade surplus was higher by 48% in 2007 than in the previous year despite a slowdown in the growth rate of its export. The continuing discrepancy between the developments of exchange rate relations and of current account balance deficits of the affected countries may lead to a re-allocation of global imbalances rather than to their substantial reduction.

27 *Here we are talking especially about Eastern European countries (Baltic countries and Southeast Europe) with a fast growth rate of loans to the private sector.*

28 *From November 2007 to March 2008, sovereign wealth funds were the providers of capital for large global financial institutions, amounting to USD 41 of the total USD 105 billion worth of new capital.*

2 Slovak economy developments as they affect financial stability

2.1 Overall development of the Slovak economy

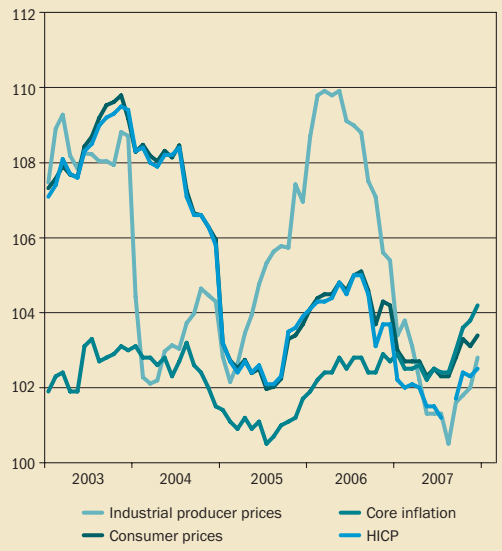
Domestic macroeconomic conditions in 2007 were generally conductive to the maintenance of the country's financial stability. Inflation was falling together with the external imbalance and the economy has not shown any signs of overheating despite an increased growth rate. NBS responded to the deceleration of inflation by lowering its key interest rates. Appreciation of the exchange rate acted towards a tightening of monetary policy. The consolidation of public finances continued and the public administration budget ended with a deficit significantly lower than the reference value of the Maastricht criterion and, at the same time, below its planned level.

Strengthening of the real equilibrium exchange rate of domestic currency was attributable to a rapid improvement of fundamentals in a catching-up economy. Following an agreement by the ERM committee members, these developments were taken into account by revaluating the central parity of The Slovak koruna in the ERM II exchange rate system.

Economic growth based on solid foundations

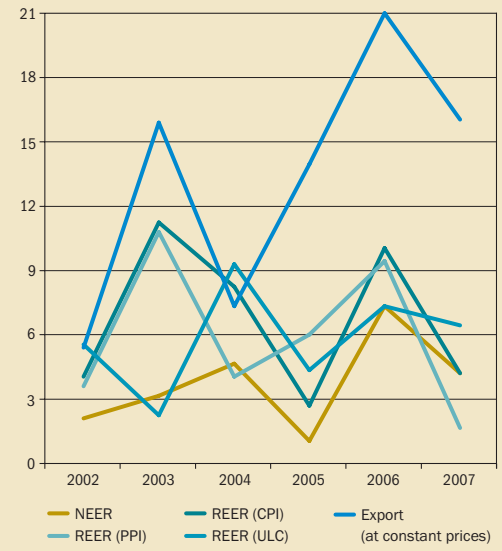
The growth of domestic economy accelerated to 10.4% in 2007, fuelled mainly by domestic as well as foreign demand. The economy found itself in a slightly positive output gap in 2007, closing in the second half. Strong economic growth was accompanied by a growth in labour productivity

Chart 13 **Price development (index, same period a year earlier = 100)**



Source: Statistical Office of the Slovak Republic.

Chart 14 **Price competitiveness and exports (year-on-year change in %)**



Source: NBS, Statistical Office of the Slovak

and employment. Since the growth rate of labour productivity exceeded that of wages, inflation pressures did not occur.

As of September 2007, the growth in consumer as well as industrial producer prices was effected by the global increase in the prices of oil, raw materials and agricultural commodities. Financing of the private sector by loans provided by domestic monetary financial institutions increased to 41.6% of GDP in 2007 (in comparison with 37.8% of GDP in 2006).

Average slowdown of consumer prices in 2007

The harmonized inflation rate slowed year-on-year to 2.5% and the core inflation rate[29] to 2.8%. The exceptionally favourable development started to deteriorate in the second half of 2007 as a result of the increasing food, fuel and industrial goods prices. The risk factors in the further development of prices included developments in the world market with oil and other energy raw materials as well as growing global food prices which also influenced the price development in the domestic market.

Box 2 Oil and food prices

Oil prices have been reaching new highs since the end of 2007. This is caused by a concurrence of several factors:

1. The main cause is a discrepancy between supply and demand. The usage of oil capacities is the subject of an agreement of its main producers associated in the OPEC cartel. The demand side is characterized by a high consumption in the US and an increasing demand in the fast-growing Asian economies.
2. Due to the lack of accurate information on the current state of supply, extraction and refinery capacities, the level of the individual countries' strategic reserves, but also on the current level of consumption, markets tend to attach an often inadequate importance to partial reports on the developments of demand and supply, causing prices to be contingent on the development of expectations which may not be in accord with the actual development of fundamentals.
3. Liquidity crisis on the financial markets influenced commodity markets. These markets started to be increasingly considered as a source of income, encouraging speculations with term contracts and adding to an increase in the volatility of prices. The weakening exchange rate of US dollar is reflected in the growing prices of USD-denominated commodities.
4. Geopolitical tensions in key oil-producing regions.

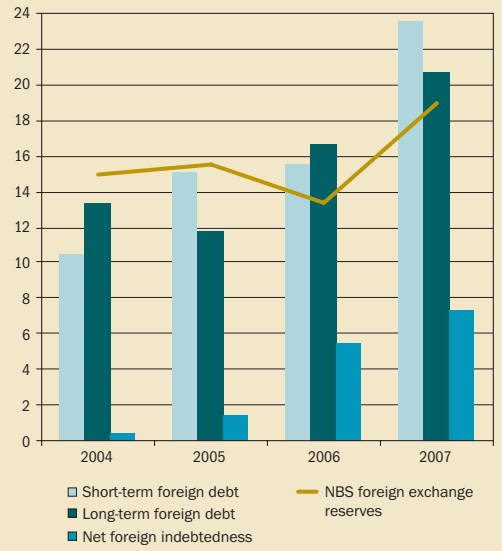
The growth in food prices in recent years has been influenced particularly by three groups of factors:

1. Growing demand resulting from an increase in incomes in the group of fast growing economies (China and India in particular). The increasing standard of living encouraged higher food consumption as well as changes in preferences towards nutritionally richer products. A higher consumption of meat and milk brought about the need for a more wide-scale cultivation of grains as inputs (fodder) for the production of animal products.
2. Growing energy prices which in turn increase the prices of agricultural production inputs (prices of fertilizers and pesticides, irrigation and transport expenses). The influence of energy prices on the output side is a new element, with biofuel production competing with growing crops for food and fodder.
3. Structural problems in the agricultural policy – a long-lasting stagnation of public investments in agriculture as well as in agricultural research in developing countries is one of the reasons why the growth in productivity is lagging behind the demands for production; the administrative stimuli to biofuel production in developed countries led to an expansion of areas designated for their cultivation at the expense of other crops.

These factors were soon accompanied by others. Weather shocks in recent years – probably associated with a long-term climate change – had an adverse impact on the harvest and led to a fall in the food inventories to a historically lowest level. The weakening dollar accelerated the growth in the prices of USD-denominated agricultural commodities whose volatility increased as a result of speculative trades in term contracts on commodity exchanges, increasingly used by investors in order to diversify risks in their portfolios.

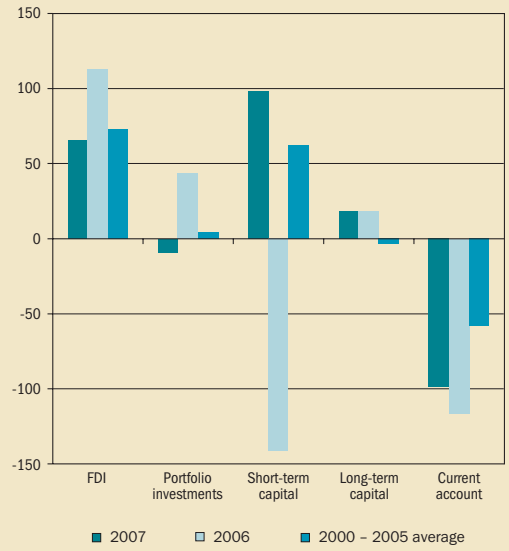
29 *Total inflation excluding energy and non-processed food.*

Chart 15 **Foreign indebtedness and foreign exchange reserves (USD billion)**



Source: NBS.

Chart 16 **Current account deficit coverage (SKK billion)**



Source: NBS.

The rate of fall in price competitiveness slowed

A slowdown in the nominal appreciation of the exchange rate of Slovak koruna in the second half of 2007 contributed to a moderation of the appreciation of real effective exchange rate calculated on the basis of all price indices. The main factor in the appreciation of real exchange rate was the development of nominal rate, with respect to a fall in the inflation differential, in both consumer and industrial producer prices. Despite a fall in price competitiveness, real exports maintained their high dynamics and the position of Slovak exporters in foreign markets remains stable.

Growing exports helped to reduce imbalances in the balance of payments current account

The development of balance of payment improved mainly thanks to a significant improvement in foreign trade balance paralleled by widening of the income and current transfer balance deficit (payment of dividends abroad increased) and a fall in the services balance surplus. Current account deficit fell to a level of 5.3% GDP (SKK 98.8 billion).

The inflow of short-term foreign capital increased again

The surplus of the capital and financial account grew to SKK 183.9 billion (from SKK 32.4 billion at the end of 2006), with the inflow of short-term capital via the banking sector having increased to the greatest extent. The net FDI balance declined and portfolio investments reported net outflow. Such financing structure is less favourable from the viewpoint of financial stability. Nevertheless, in respect to a fall in the current account deficit, its partial coverage by short-term capital does not constitute a problem.

Foreign indebtedness increased

Gross foreign debt increased to USD 44.3 billion, of which the share of short-term debt, particularly in the banking sector, increased to 53.3%. As much as 80.5% of the short-term foreign debt was covered by foreign exchange reserves of NBS. Gross foreign debt relative to GDP reached 54.7% of GDP, net foreign indebtedness relative to the size of economy increased to 9% of GDP.

Monetary stance was restrictive; the rate of restriction fell in the second half

With respect to a favourable inflation development, NBS lowered key interest rates in two steps in the first quarter of 2007, cumulatively by 0.5 percent-

age points to 4.25%. The effect of monetary conditions (evaluation based on the real monetary conditions index) was restrictive, with their components acting in the opposite direction – strengthening of the nominal exchange rate acted towards their tightening, while the decreasing NBS rates brought about their loosening.

Maastricht criteria for the public finance deficit was comfortably fulfilled in 2007

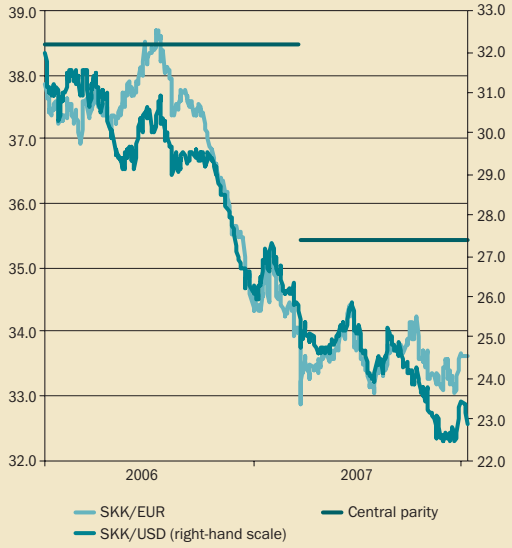
The year 2007 was the reference year when Slovakia's preparedness for entering the euro area was assessed. The public finance deficit was budgeted at 2.9% of GDP including pension reform costs. Nevertheless, the actual performance brought about better results (2.2% of GDP), due to higher employment, an improved collection of consumer taxes, and the GDP having grown faster than expected, but also due to lower expenses of co-financing projects using EU funds. Gross public debt reached 29.4% of GDP as at the end of 2007, far below the level set by the Maastricht criteria.

A lesser need of public budget financing was attributable to a favourable budget development, the possibility to use Treasury resources and issuance in foreign markets. Thus the ARDAL was able not to accept all auction bids, and make an adequate selection. Apart from a single auction in the second half, all bids out of the demand of banks were being repeatedly refused in government bond auctions.

2.2 Domestic financial market developments in terms of risks to financial stability

Developments on the Slovak financial market at the beginning of the year were mostly influenced by the events in the domestic foreign exchange market. The emergence of the crisis on international financial markets which started in August 2007, virtually did not manifest in the domestic markets. The important internal factors included the nature of monetary policy, a change in the central parity of The Slovak koruna in the ERM II mechanism, and expectations of a cut in the NBS rates. These events and changes influenced market expectations, stability and time structure of interest rates and on the shape of the yield curve of government bonds.

Chart 17 **Slovak koruna vis-à-vis the euro and US dollar in 2006–2007**



Source: NBS.

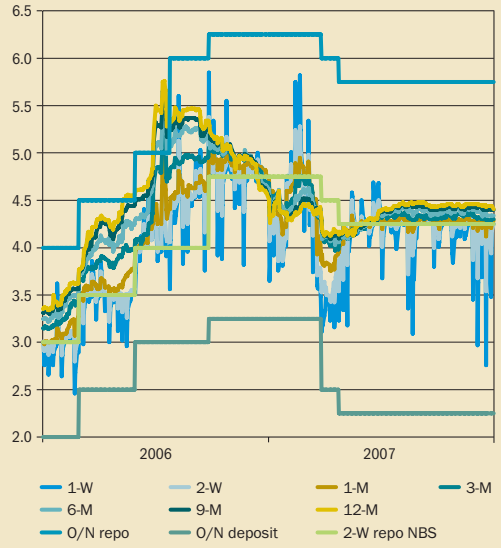
The stability of the foreign exchange market in the first half of 2007 was affected by speculations about a strengthening of the exchange rate of The Slovak koruna. NBS considered this strengthening excessively fast and repeatedly intervened against exchange rate volatility. The situation had stabilised by the end of the second quarter of 2007. The transfer of signals from emerging markets in reaction to developments in the US and European financial markets in August and November 2007 had but a limited influence on the domestic financial market. Since the Maastricht criteria in terms of inflation, public financing and convergence of long-term interest rates were comfortably fulfilled, the sentiment in the domestic market tended to be positive.

Foreign exchange market

Slovak koruna continued its trend of long-term appreciation against the euro, its reference currency

NBS considered the appreciation of the exchange rate as at the end of 2006 and in the first quarter of 2007 as being too fast, and, therefore, repeatedly intervened in the market in March and April 2007.

Chart 18 **Interest rates in the money market (BRIBOR)** (%)



Source: NBS.

(The net sum of foreign exchange interventions in the first half of 2007 comprised a purchase of EUR 2.63 billion). However, the market was still convinced of a long-term appreciation of the domestic currency, and the Slovak koruna kept on strengthening against the euro, even after revaluation of the central parity, up to the level of SKK 35.4424[30] on 19 March 2007. One more direct intervention of NBS was needed in April to stabilize the development of the exchange rate. The exchange rate of koruna weakened slightly due to seasonal factors (dividend payouts) and sensitive reactions of the market to somewhat critical comments about Slovakia's preparedness for the entry into the euro area. In the second half, in August and November in particular, the development in the domestic market was affected by an increased aversion to emerging markets. The exchange rate of the Slovak koruna for the year 2007 strengthened on average by 9.3% vis-à-vis euro and by 16.9% vis-à-vis the US dollar. Koruna oscillated on the appreciation side of the fluctuation band for the whole of 2007.

Interbank money market

Developments in the money market in the first half were influenced by a strengthening tendency of the Slovak koruna and by NBS taking steps to counteract the exchange rate volatility

At the beginning of the year there was a high liquidity surplus in the interbank money market due to the previous cuts in the offers in REPO tenders or their refusal as well as due to no NBS bills auctions taking place. This situation had an effect on a decline in interest rates, which in turn diminished the interest rate differential between rates in the domestic market and euro area rates, partially discouraging speculative motives for trading in the Slovak currency.

In the first half, NBS was repeatedly lowering key interest rates

Growing expectations of a decrease in the central bank's key interest rates caused that only short maturities were traded in. At the end of the first quarter, NBS lowered the key interest rates and implemented an asymmetrical corridor for overnight refinancing and sterilization rates, in an effort to discourage speculations in the interest rate differential. NBS again lowered the interest rates at the end of April. After the situation on the foreign exchange market had become calmer, the central bank returned to the standard conduct of its monetary policy, and after May 2007, the situation in the interbank money market was also stabilised. Interest rates in the money market were falling as at the end of the first half due to an expected easing of NBS monetary policy. The expectations were influenced by the development of euro area rates in light of the expected entry into the euro area. Due to a surplus of liquidity in the sector, it was the rates with the shortest maturities which reacted most noticeably (Chart 18).

Capital market

The primary capital market was dominated by government bond issues

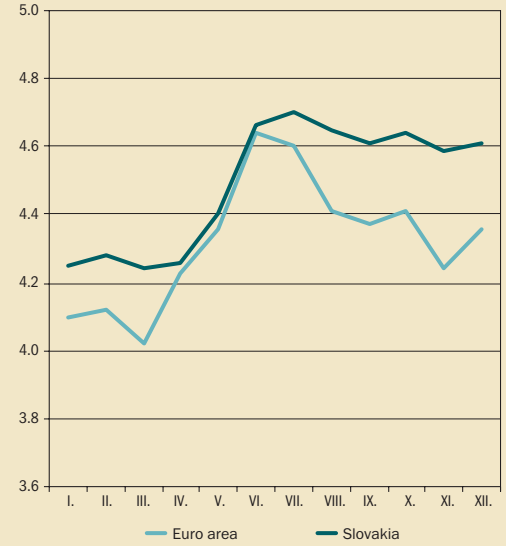
Government bonds in the total nominal value of SKK 71.9 billion were placed in the domestic market. The average interest rate weighted by nominal value (without considering maturity), achieved in

30 *The lower compulsory intervention rate was 30.1260 SKK/EUR and the upper limit was 40.7588 SKK/EUR.*

Chart 19 **BRIBOR yield curves in 2007** **(%)**

Source: NBS.

Chart 20 **10-year government bond yields in 2007** **(% p. a.)**



Source: Eurostat.

auctions in 2007 was 4.160% p. a. (compared to 4,064% p. a. in 2006). With respect to a surplus of liquidity in the domestic market and the possibility to simultaneously use the temporarily free Treasury funds and the issuance on foreign markets (a 10-year bond in the nominal value of EUR 1 billion and a 4.457% p. a. yield to maturity, which was sold without a risk premium which usually adds to the market interest rate), the ARDAL used the possibility to select among auction bids.

Government bond yields grew in the first half of 2007 and have been predominantly stagnating since the second half

At the beginning of the year, the benchmark yield curve had resumed its normal shape which was even more pronounced in March and April following a decline in the base interest rate and a subsequent fall in yields on the short end.

The yield curve of government bonds changed from an inverse to a standard shape in the course of the year and shifted upwards, with the exception of the shortest maturities. From mid-May onwards the growth in bond yields with all maturities was attributable to the weakening of domestic currency and an increase in bond yields in the euro area. From August, the yield curve shifted downwards in connection with the development of exchange rates and the fluctuation of yields in the euro area.

2.3 Medium-term risks from the macroeconomic environment and from financial markets in Slovakia

In the medium-term horizon, possible risks to financial stability are in particular connected with:

- risks of overheating the economy,
- certain capacity limitations in the structure of labour force as well as in the production capacities of some sectors (construction, industrial production), which could add to the acceleration of a growth in costs and prices,
- a growth in consumer and industrial producer prices caused by growing global prices of raw materials, energy and agricultural commodities, which can have an adverse impact on savings in the household and corporate sectors.

Medium-term risks from the domestic macroeconomic environment and from financial markets in Slovakia did not substantially change in 2007

Tendencies in the development of domestic environment were not creating any conditions which would deteriorate financial stability in the

short-term horizon. Developments in the external environment remain the main risk factor. The crisis in financial markets is gradually being reflected in a slowdown in the economic activity of the EU countries which are Slovakia's important business partners. Deterioration of financing conditions in the international money markets had no significant impact on the Slovak economy, owing to the relatively low dependence of both the government and corporate sectors on foreign financing as well as to the sufficiency of sources of financing in the domestic economy. However, if the situation does not improve, a lower availability of financial resources connected with higher financing costs could become a limiting factor in economic activity in the medium-term horizon.

To the contrary, domestic environment may help to mitigate the negative external influences in respect to a worsened global situation. This implies that domestic demand must be kept strong and export sector competitive. High growth rates of economy and a broad access to lending bring with them potential risks of inadequately optimistic expectations of economic entities and a subsequent overheating of economy. Hence NBS unceasingly puts emphasis on monitoring the structure of economic growth, the proportions of the growth in wages and labour productivity and the emergence of any pressures on the growth in prices.

Slovakia's entry into the euro area will be an important modifying factor in its development. Euro area membership presents an opportunity to take advantage of a strong, stable currency and a more stable environment, since the exchange rate risk vis-à-vis the euro will disappear together with speculative motives for using the interest rate differential against the euro area, which conditioned the volatile movement of foreign short-term capital. The maintenance of harmony between the growth in wages and the growth in labour productivity becomes important in the monetary union.

3 Non-financial corporations sector

Lending to non-financial corporations and households in 2007 continued at a slightly slower rate

The indebtedness rate of both non-financial corporations and households increased. Loans to the non-financial corporation and household sector reached a level of 35.7% of GDP in 2007. Amounts of new loans remain high despite a slowdown in the growth rate of loans to non-financial companies and households. Neither companies nor households had difficulties in paying their obligations.

Favourable macroeconomic development was reflected in the economic results of companies and in the growth in real household income.

3.1 Non-financial corporations sector

The profitability of the non-financial corporations sector was high

Corporate financial performance as measured by the profits-to-GDP ratio increased to 16.7% of GDP in 2007. Non-financial corporations reported profits amounting to SKK 308.6 billion. All sectors made profit with an exception of agriculture. Compared to 2006, the largest relative increase in profits was that in the sector of vehicle manufacturing, transport, storage, post and telecommunications as well as in the production of other non-metal mineral products. The highest profitability was recorded in the mining and quarrying sector (16.9%), production and distribution of electrical energy, gas and water (15.9%) and transport, storage, posts and telecommunications (13.6%).

At the aggregate level, corporate performance increased slightly in 2006

The growth of net entrepreneurial income[31] indicates a good financial position of non-financial corporations. The ratio of entrepreneurial income

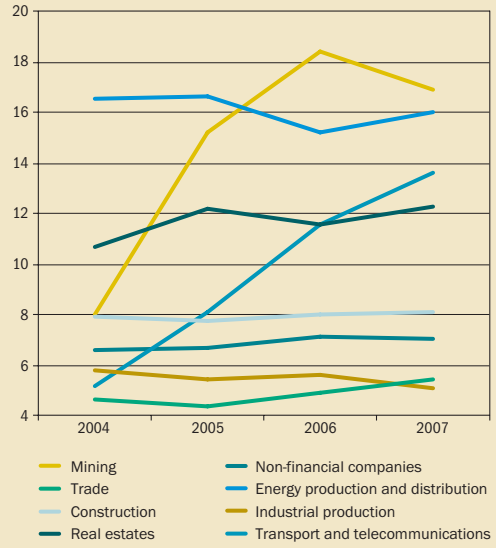
Table 4 **MFI[1)] claims against non-financial companies and households**

	2004	2005	2006	2007
Claims against the private sector, SKK billion, end of the year	397.7	507.5	627.4	770.0
Non-financial companies	225.3	271.4	326.4	399.5
Households and non-profit institutions	128.2	181.0	237.9	304.0
Loans to non-financial companies, % of GDP	16.6	18.3	19.7	21.6
Loans to households, % of GDP	9.4	12.2	14.4	16.4
Loans to non-financial companies,				
year-on-change in SKK billions	-19.3	46.1	55.0	73.1
%	-7.9	20.5	20.3	22.4
Loans to households,				
year-on-change in SKK billions	34.5	52.8	56.9	66.2
%	36.8	41.2	31.4	27.8

Source: NBS, Statistical Office of the Slovak Republic.
1) MFI – monetary financial institutions.

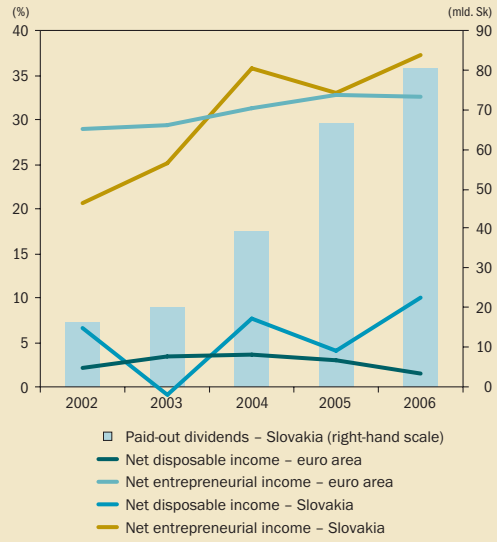
31 *Net entrepreneurial income is an indicator similar to the concept of current income in corporate accounting.*

Chart 21 **Gross profit margin in the non-financial sector (%)**



Source: Statistical Office of the Slovak Republic.

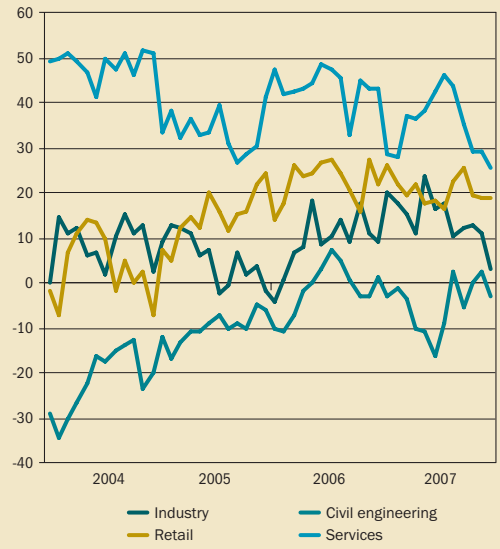
Chart 22 **Net entrepreneurial income (share of net value added)**



Source: Eurostat.

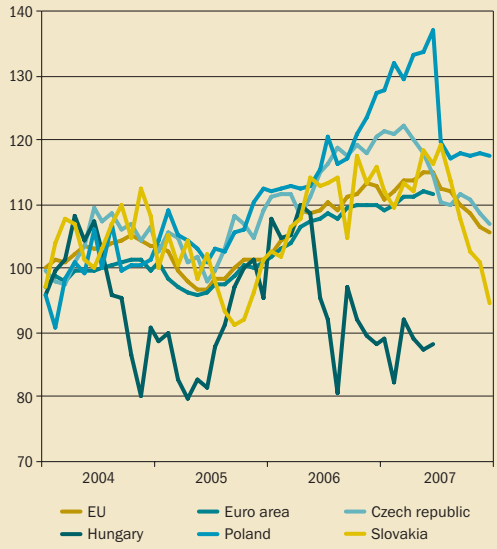
to net value added, approximating the rate of profit before taxes, increased to the level of 37% in 2006. There was also an increase in own funds of financing, expressed as the ratio of net disposable income[32] to net value added. The performance of Slovak companies in recent years was exceeding the parameters of the European average.

Chart 23 **Confidence indicators in economic sectors (business balance)**



Source: Statistical Office of the Slovak Republic.

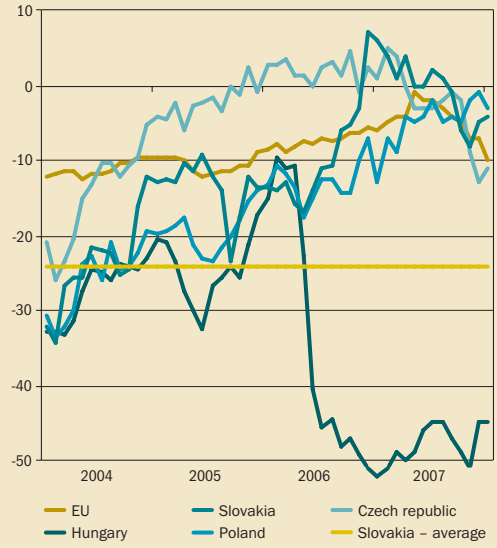
Chart 24 **Economic sentiment indicator (year 2000 = 100)**



Source: Statistical Office of the Slovak Republic, Eurostat.

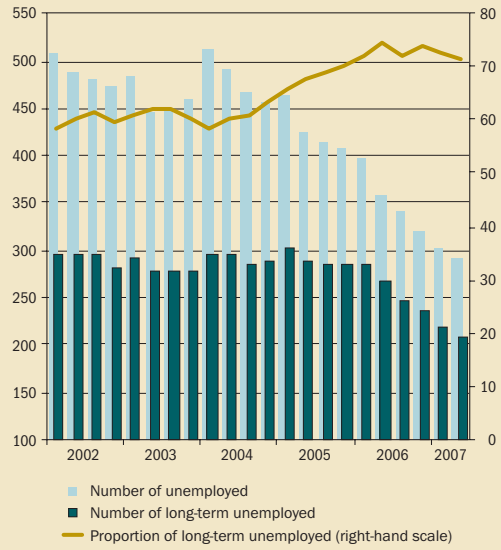
32 *Net disposable income is what stays with companies after they have fulfilled their obligations to their employees, the government, shareholders and other creditors.*

Chart 25 **Consumer confidence indicator (business balance)**



Source: Eurostat.
Note: Net seasonal data.

Chart 26 **Number of unemployed and long-term unemployed people (in thousands)**



Source: Statistical Office of the Slovak Republic.

Economic sentiment deteriorated in the second half

The business survey indicators in 2007 suggested a weakened confidence of corporate entities and a less favourable outlook for the future growth, apart from construction, where moods improved in the second half. The economic sentiment indicator[33] fell below the confidence level of the EU countries.

3.2 Household sector

Consumer confidence was gradually weakening in 2007

Residents' satisfaction, when evaluating the four areas of economic development – the expected development of economy and employment, the financial situation of households and outlook for savings – was decreasing in 2007. Expectations of a growth in consumer prices were growing most markedly. From September onwards, concerns were increasingly overpowering optimistic views in assessing the situation. However, the consumer confidence indicator remained above the historical average even despite this increase in pessimism.

Favourable development on the labour market influenced the growth in household income

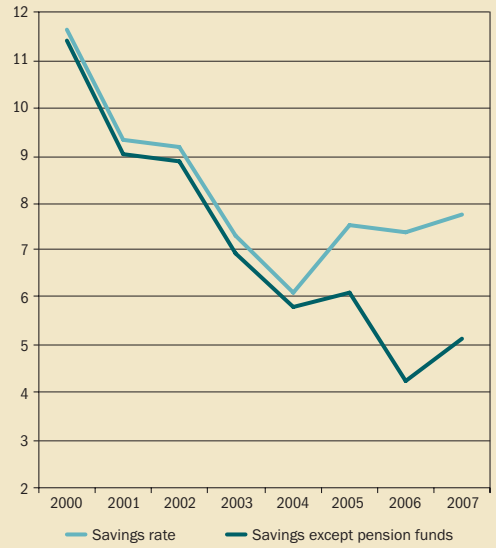
Demand for labour force continued, employment grew at a rate of 2.1% (as per a labour force sample survey), the number of vacancies rose, paralleled by a fall in the unemployment rate to 11%. Nominal wages grew slower than in 2006 but since inflation was lower than in the previous year, the growth rate of real wages accelerated.

Gross disposable income of households was growing especially thanks to the growth in primary income; the gross savings rate increased, too

Gross disposable income of households was growing in 2007 due to the growth in both primary and secondary income[34] and a simultaneous slowdown in the growth in paid income.[35] The gross house-

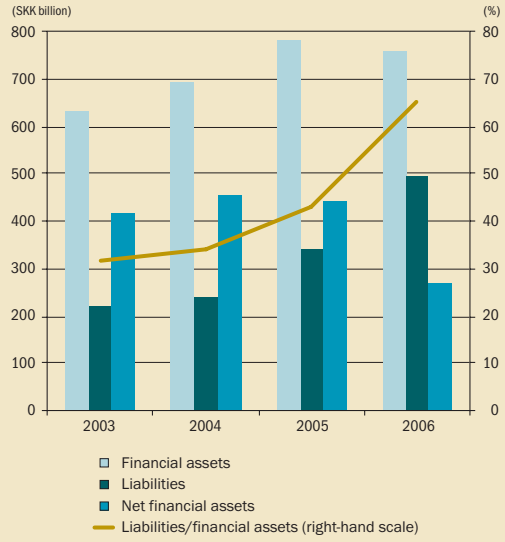
33 *Its components include confidence indicators of the sectors of industry, construction, retail as well as the consumers.*
34 *Primary income comprises income from work (wages and salaries), income from business (gross mixed income) and property income (income less expenditure). Secondary income comprises social benefits and other current income transfers.*
35 *Paid income comprises current taxes on income, property, social contributions and other current expenditure transfers.*

Chart 27 **Gross household savings rate (% of gross disposable income)**



Source: Statistical Office of the Slovak Republic.

Chart 28 **Financial assets and liabilities of households**



Source: Eurostat.

holds savings rate increased to 7.8% of gross disposable income and there was also an increase in household savings outside the pension funds.

The confidence of households in investing in mutual funds was restored

Whereas withdrawals from open-end mutual funds predominated in the household sector in 2006, in 2007 there was a renewed interest in investing in mutual fund units (money market) and, to the contrary, holding of shares and units of mutual funds other than money market mutual funds decreased. The yield rate of foreign currency funds was negatively influenced by the appreciation of the Slovak koruna, whereas the yield rate of equity funds was influenced by a decline in confidence in equity markets. Money market funds and mixed funds reported the best performance. The differences in funds' performances were attributable to the shifts from equity and bond funds into better performing funds.

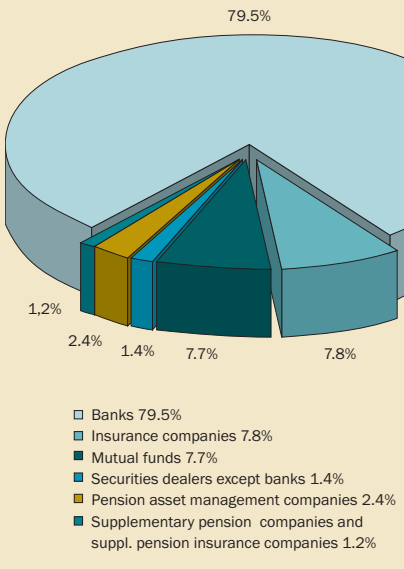
In historical terms, the creditor position of households has been weakening

Net financial assets of households, more or less stagnating in recent years, fell rapidly in 2006 due to a high increase of household obligations and a simultaneous modest decline in accumulated savings in the form of financial assets. The liability-to-asset ratio of households, which indicates the ability of households to meet their obligations in a short-term horizon, increased to the level of 65% in 2006. Household indebtedness in relation to income – the ratio of loan repayments to gross disposable income – increased to 5.3% as at the end of the year.

4 Financial sector[36]

The continuing favourable development of domestic economy in 2007 continued to create an environment supportive of positive trends in the Slovak financial sector. The total value of assets and managed assets of financial institutions regulated by NBS reached SKK 2,088 billion, which represents a year-on-year increase of 19.5%. A high relative growth rate of managed assets in 2007 was recorded especially in the funds of Pillar II of pension saving. There was also a significant increase in the assets of mutual funds and banks. The growth in the volume of assets in some segments of the financial market slowed slightly in the second half due to the ongoing crisis in global financial markets. The banking sector preserved its strong dominant position within the Slovak financial sector, albeit with a longer lasting downward trend (Chart 29). In the course of 2007 the financial sector's exposure to risks increased, too. However, the size of these risks was not threatening the stability of the financial sector as a whole.

Chart 29 **Financial institutions by share of financial sector' assets and managed assets in 2007 (institutions regulated by NBS)**



Source: NBS.
Note: For banks and insurance companies, the share in net assets is evaluated, and for other sectors, the total value of managed assets.

4.1 Banking sector

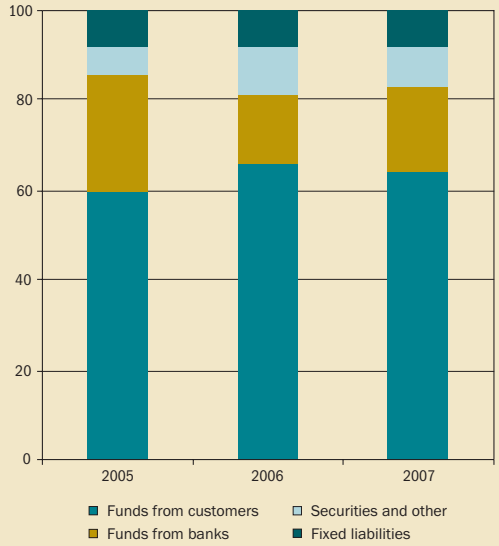
4.1.1 Key performance trends in banking sector liabilities in terms of financial stability

The Slovak banking sector as a whole has so far had sufficient stable domestic funds at its disposal and is not dependent on short-term interbank funds

The fact that interbank deposits were growing faster than other aggregates had the greatest influence on the structure of banking sector liabilities (Chart 30). The largest growth was recorded in the volume of non-resident foreign currency deposits, which, after a decline in the second half of 2006, reached its level as prior to this period. The *loan-to-deposit ratio*[37] resumed its growth in 2007 following a stagnation in 2006, although more modestly than in 2005. Its value of 78% for the entire banking sector as at 31 December 2007 (Chart 31) indicates that the growth in loans to customers in 2007 was again financed predominantly by stable resources of customers. Hence the Slovak banking sector is one of the few EU banking sectors which in financing loans to customers do not depend on short-term interbank funds.

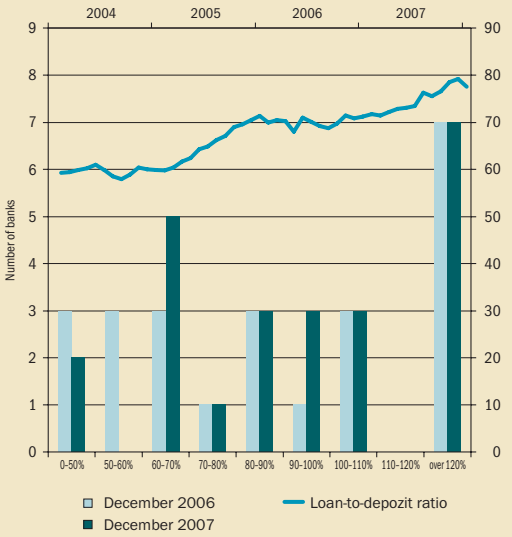
36 *A more detailed financial sector analysis for the year 2007 is in Národná banka Slovenska publication: Slovak financial sector analysis for the year 2007, May 2007.*
37 *Ratio of loans to customers to the sum of retail deposits, corporate deposits and deposits of financial companies and MBs issued.*

Chart 30 **Liabilities structure** **(%)**



Source: NBS.

Chart 31 **Loan-to-deposit ratio: development and distribution** **(%)**

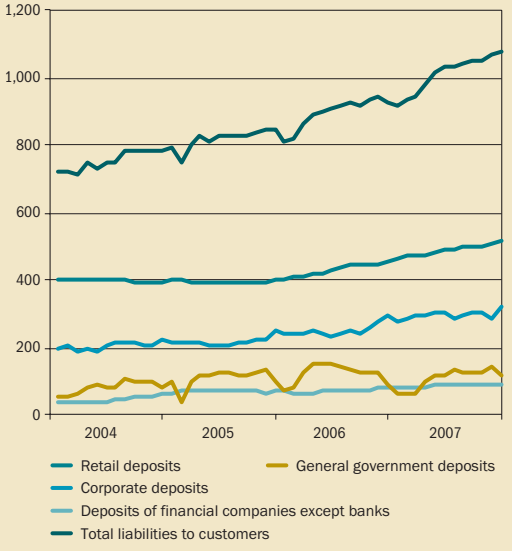


Source: NBS.
Note: The lower horizontal scale shows intervals of the indicator and the left vertical scale the number of banks with the given value. The upper horizontal scale shows the dates of the average indicator values and the right vertical scale shows the average values.

The upward trend of retail deposits continued in 2007; their concentration increased, too

Retail and corporate deposits have the largest share of customer funds (48.3% and29.5%, respectively, as at 31 December 2007; Chart 32). The volume of retail deposits (term as well as demand) was growing despite a slight decline in interest rates on term accounts, and it was one of the reasons why the long-term high correlation between the volume of deposits and interest rates fell to 0.61. This might have been caused by a fall in the yield rate of mutual funds which serve as an alternative for investments of households. There was a modest increase in the concentration of retail deposits when the three largest banks managed 62.7% of all deposits as at the end of 2007 compared to 62.5% as at the end of 2006. As much as 92% of retail deposits are denominated in the Slovak koruna.

Chart 32 **Main aggregates of customer deposits** **(in SKK billions)**

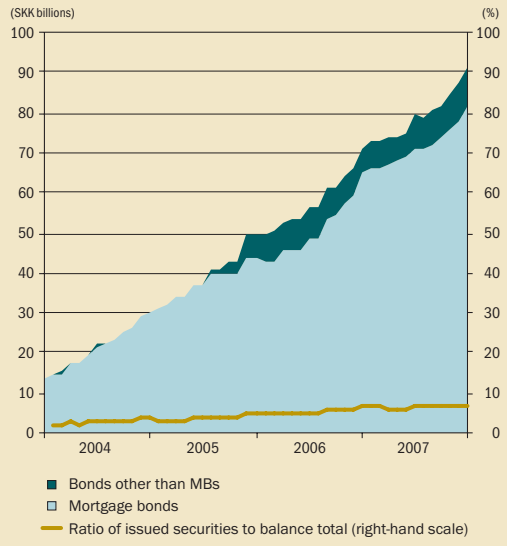


Source: NBS.

The growth in corporate deposits was related to the expansion of corporations; the concentration of corporate deposits was also increasing

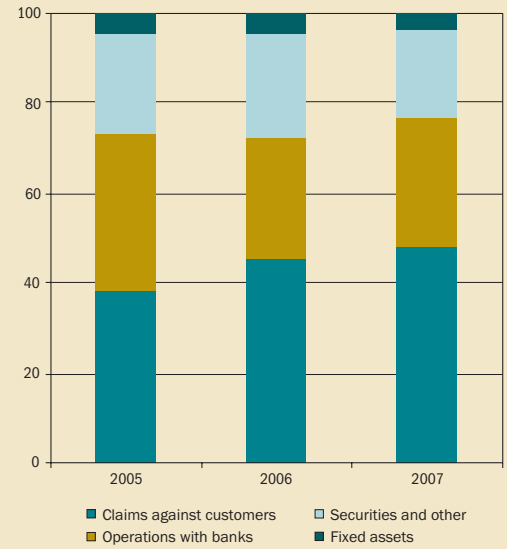
Corporate deposits increased by SKK 27 billion compared to the previous year. Their development, however, was considerably volatile compared to retail deposits. The historical correlation between their volume and the interest rates is low (0.17 as at 31 December 2007). The volume of corporate deposits was determined more by the growth in assets and the state of corporate liquidity. The concentration of corporate deposits was also in-

Chart 33 **Security issues and their ratio to total assets**



Source: NBS.

Chart 34 **Structure of assets** **(%)**



Source: NBS.

creasing – the three largest banks together were managing 54.1% of total corporate deposits as at the end of 2007 (compared to 52.7% as at 31 December 2006). In historical terms, deposits in the Slovak koruna have been fluctuating at the level of 80% of total deposits.

Mortgage bonds are increasingly being bought by investors outside the banking sector – a positive phenomenon for the banking sector liquidity

A much as 57% of issued mortgage bonds (MB) were owned by resident banks as at the end of 2004. This value was gradually decreasing and constituted only 29% as at the end of 2007. MBs were increasingly being bought by mutual funds, non-resident banks and other institutions. The gradual expansion of counterparties to include investors other than resident banks brings with it a better diversification of liquidity risk, thus lowering this risk in the banking sector. The share of MBs in the total volume of issued securities was as large as 51.2%. The ratio of issued securities to total assets of the entire banking sector remains very low (Chart 33), however, they are an important source of stable functioning for certain institutions.

4.1.2 Key performance trends in banking sector assets

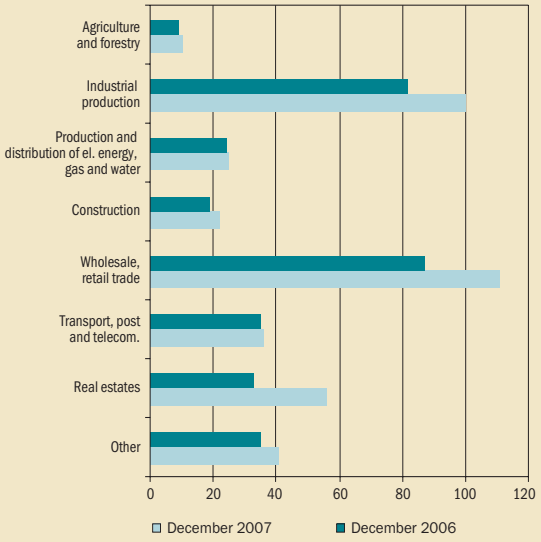
Banking sector assets continued to grow in 2007, largely due to an increase in customer loans

The continuing growth in customer loans constituted as much as 60% of the total year-on-year growth in assets. The ratio of customer loans to assets in the sector increased by 10 percentage points and constituted almost 50% as at the end of 2007 (Chart 34). In 2007, the largest growth was again in household and corporate loans. Operations with banks increased year-on-year by 25% having grown especially in selected branches of foreign banks. Both the ratio and volume of bank investments in securities was falling – this was especially the case of the holding of domestic government bonds. To the contrary, investments in foreign securities increased.

The large volume of provided loans was brought about especially by a strong corporate demand for loans, with a large growth in loans to the industrial production and to the real estate sector

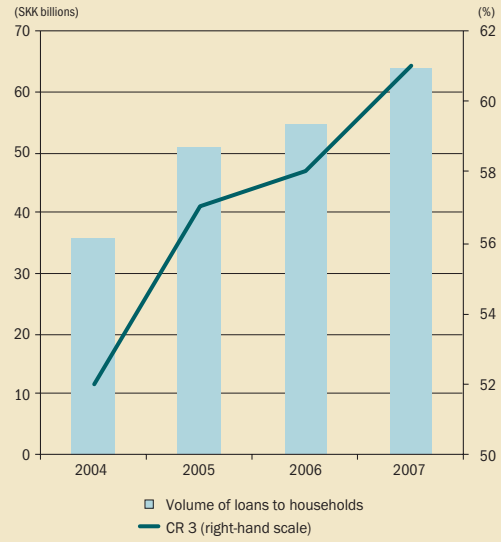
In the course of 2007, banks increased the volume of corporate loans by 21.5%, which constituted an increase by approx. SKK 70.5 billion to SKK 398.7

Chart 35 **Sector structure of corporate loans (in SKK billions)**



Source: NBS.

Chart 36 **Volume of household loans and concentration on the market**



Source: NBS.
Note: CR 3 represents the ratio of three banks with the largest share in the household loan market.

billion. Almost a half of this amount comprised short-term loans. The largest proportion of loans in 2007 was directed towards industrial production, especially the electro-technical industry and activities in the area of real estate and trade (Chart 35). At the end of 2007, loans in the real estate sector constituted as much as 15% of total corporate loans, whereas the year before this was 10%. In some banks the ratio of these loans grew even more significantly.

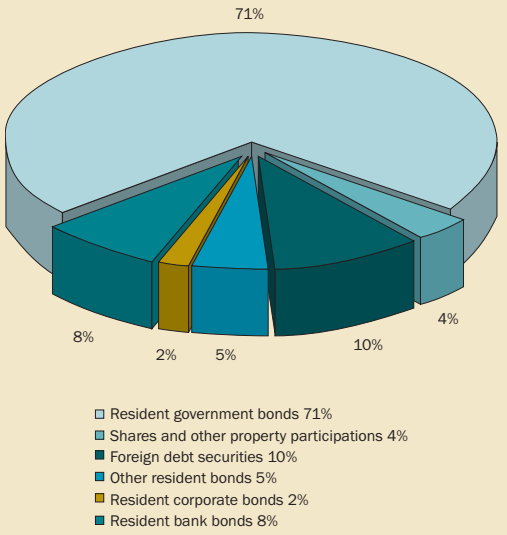
The turbulent development in developed financial markets led banks to tighten the loan standards for large companies and project financing. Banks continued to focus more on small and medium-sized enterprises

Whereas the corporate demand for loans maintained its upward trend throughout 2007, banks started to change their approach in the second half of the same year. Banks were tightening their standards especially in the financing of large enterprise and in project financing, largely due to their concerns over the future macroeconomic development and the riskiness in certain sectors. Some banks recorded changes in their risk appetite and in the capital and liquidity positions, while several other banks were loosening their standards for loans to small and medium-sized enterprises. The interest rate margins of banks in this segment are significantly higher, with a simultaneously lower indebtedness rate. Developments in the corporate loan market in 2008 will probably be influenced by

Chart 37 **Growth in flat prices in 2007 by regions (%)**

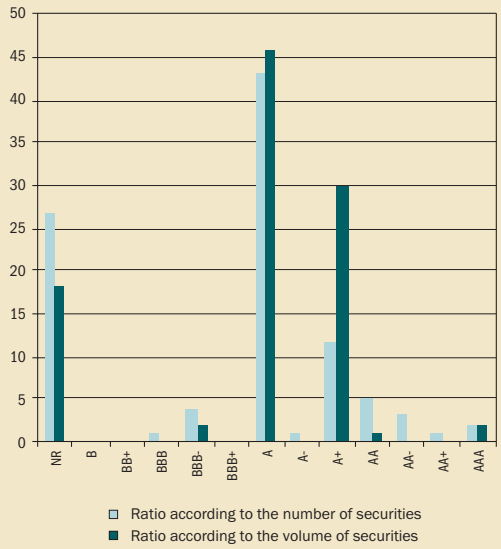
Source: Real estate price map, NBS calculations.

Chart 38 **Structure of the portfolio of securities owned by the bank sector in December 2007 (%)**



Source: NBS.

Chart 39 **Breakdown of debt securities by rating grades (%)**



Source: NBS.
Note: The vertical scale shows the ratio of individual rating grades in the total number or total volume of debt securities. The individual rating grades are expressed as an equivalent of a Standard&Poor's rating grade. NR – debt security with no rating.

a restrained attitude of banks, mainly due to the lasting crisis in financial markets. This refers especially to the financing of the real estate sector and some other selected sectors. We may also expect an increase in competitiveness between banks in lending to small and medium-sized enterprises.

Household demand for loans was mainly caused by the growing real estate prices

The outstanding amount of household loans increased by almost SKK 64 billion in 2007, which is the largest absolute increase in recent years (Chart 36). The largest demand was for loans secured by real estates (special-purpose loans as well as non-purpose loans). There was also an increase in the demand for various forms of consumer loans. Demand for loans in 2007 was significantly influenced by developments in the real estate market (Chart 37), when the growing prices of residential real estates forced households to take loans for their financing. Housing loans grew year-on-year by 30%, to almost SKK 200 billion. Banks expect a similar development also as at the beginning of 2008.

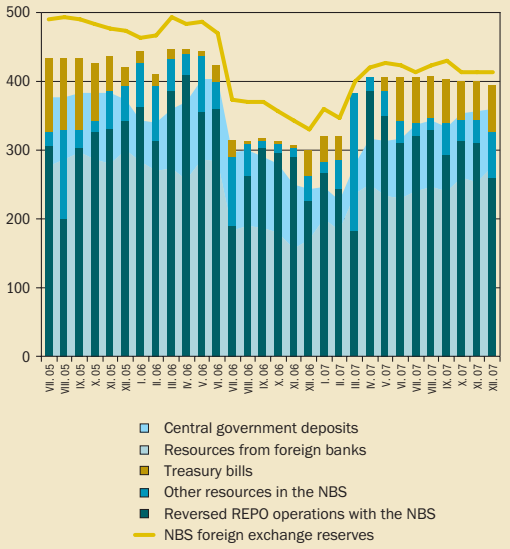
Banks were not changing their loan standards for households, and when they did, the changes were modest

In the case of households, banking sector tended to maintain the standards or to proceed to their partial moderation, mostly in the form of loosening limits on the value and quality of collateral. At the sector level, standards were becoming slightly tighter in credit cards and consumer loans.

From the risk point of view, the portfolio of securities in the banking sector remains conservative

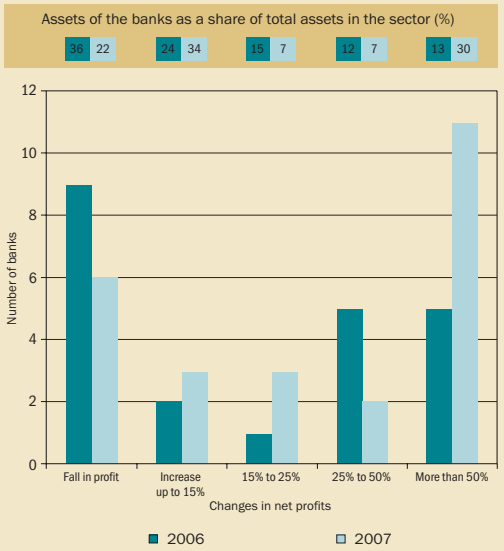
This portfolio is dominated by low-risk government bonds (Chart 38). This portfolio of securities may be characterised as conservative even from the viewpoint of rating grades of debt securities (Chart 39). In 2007, the volume of foreign bank, corporate debt, and equity securities was increasing in some banks. However, the ratio of equity securities to total investments in securities in the banking sector was only at the level of 4%.

Chart 40 **Interbank assets and liabilities and central government funds (SKK billion)**



Source: NBS.
Note: The chart does not include mutual operations between domestic banks.

Chart 41 **Distribution of year-on-year changes in the net profit of banks**



Source: NBS.

4.1.3 Key performance trends in the interbank market

Following an increase in the first half of 2007, the value interbank operations in assets as well as liabilities became stable in the second half

Compared to the end of 2006 the volume of interbank lending operations increased by SKK 99.6 billion (25%) and the volume of interbank deposits operations by SKK 95.9 billion (44.9%). Following a steep increase in asset as well as liability interbank operations in the first half of 2007, their value stabilized itself in the second half at an approximately unchanged level. The development of volumes was volatile in the period monitored.

The repeated increase in the sterilization position of NBS, after a decline in mid-2006, was directly related to the increased koruna liquidity of banks which effected an inflow of funds from foreign banks and interventions of NBS on the foreign exchange market

Funds sterilised by NBS through deposits and loans from commercial banks, minimum reserve requirements or issuance of NBS bills into the banks' portfolios, had the largest share of the increase in interbank assets. The increase in the sterilisation position of NBS was mainly associated with a repeated inflow of funds from non-resident banks (Chart 40). Funds from foreign banks in foreign currency comprised as much as 70.9% of total interbank liabilities. Banks continued to deposit the larger part of these funds in sterilisation trades with NBS after conversion using currency swaps.[38]

4.1.4 Profitability

There was an increase in the number of banks with a year-on-year increase in profits, which is favourable for financial stability

Net profit in the banking sector for the year 2007 was lower year-on-year by 1.3%.[39] In 2007 there were fewer banks with a year-on-year fall in profits and, at the same time, more banks with the high-

38 *Funds from non-resident banks report a high correlation with NBS foreign exchange reserves. The correlation coefficient between the first differences had the value of 0.73 as at 31 December 2007.*
39 *The aggregate fall was caused by a substantial fall in profits in one bank. Without considering this bank's results, the sector's profitability would have increased by 17.3%.*

Table 5 **Year-on-year changes in basic expense and income categories** **(SKK billion)**

	XII. 2006	XII. 2007	Change
(a) Operating costs	30.04	33.72	12%
(b) Gross income	55.08	56.97	3%
Net interest income	34.59	40.10	16%
Net non-interest income	20.49	16.87	-18%
Net income (b minus a)	25.04	23.24	-7%
Net profit after taxes	17.78	17.55	-1%

Source: NBS.

est growth in profits (Chart 41). Despite a relatively lower increase in the net profit in the three largest banks, their share in the absolute creation of profits in the sector rose to 61% in 2007 compared to 57% in 2006.

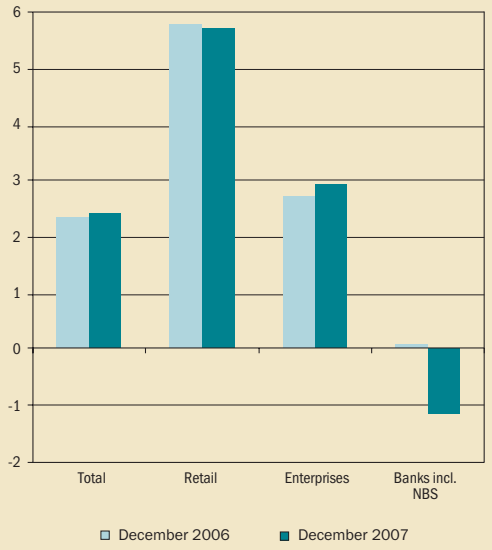
Less favourable was the ratio of net profit to own capital of banks

The average ROE value (weighted by the volume of own funds) reached the level of 18% in December 2007, whereas this was 22% at the same period of the previous year. This indicator was negatively influenced by an increase in own capital in several banks as well as by profitability.

Gross income from banking activities was growing very poorly in 2007

Whereas in 2006 the gross income from banking activities grew year-on-year by almost 30%, in 2007 this was only 3% (Table 5). Almost all banks reported a weaker growth, reasons of which varied between banks. Interest income within the sector maintained its positive upward trend in 2007, especially in the largest banks whose share of the absolute growth of interest income was almost 70%. The lower growth in gross income was particularly influenced by the development of non-interest income, which fell in eleven banks. Several banks reported lower growth than in 2006. The reasons for this fall in non-interest income were many and the trend in the sector cannot be considered as clear-cut. Other operating income fell in several banks. Some banks recorded a year-on-year fall in trading income.[40]

Chart 42 **Interest rate spread in the banking sector** **(%)**



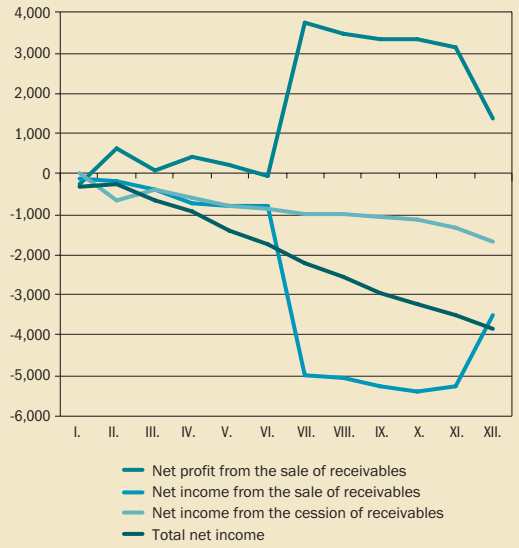
Source: NBS.
Note: The interest rate spread represents the difference between, on one hand, the share of cumulative interest income in the average value of selected assets provided to a given counterparty, and, on the other hand, the share of cumulative expenses in the average value of selected liabilities provided to this counterparty.

In 2007 the net interest income of banks was growing mainly in large banks, owing to an increase in the volume of provided loans

The proportion of interest income in gross income was as high as 70% in 2007 (63% in 2006). Banks managed to increase interest income more significantly than interest expenses. The increase in interest yields was influenced to the greatest extent by an increase in the volume of loans provided to

40 *With respect to the methodology used to calculate non-interest income, their level is also negatively influenced by the costs of sales of receivables.*

Chart 43 **Income from the creation of provisions, writing off and sale of receivables in 2007 (SKK million)**



Source: NBS.

households and the corporate sector. The overall interest rate spread grew but modestly. In the case of households, the interest rate spread even fell on a year-on-year basis. Banks have a relatively low spread in corporate loans which is associated mainly with a strong competition in this sector. The interest rate spread of banks from corporate loans increased in 2007 (Chart 42).

After a slight decline in 2006, banks recorded an increase in income from fees

Compared to 2006 there was both a relative and a positive increase in the income from fees, which is particularly related to a growing number and volume of customer banking transactions. The total volume of income from trade changed but modestly year-on-year – almost all income originated in currency operations. The crisis on financial markets did not have an impact on trading income in the banking sector as a whole, however, it was negatively reflected in the revaluation of debt securities of selected banks.

The volume of provisions in the sector was falling due to a substantial fall in one institution. Credit loss from the sector's loan portfolio reached SKK 3.8 billion

The volume of provisions in the banking sector fell by almost SKK 650 million in 2007. However, the volume of provisions was growing in several banks in 2007 and the fall in the sector as a whole was caused to a great extent by a significant fall in one of the institutions. In most banks there was also an increase in the net costs of sale of customer receivables. Net income from writing off and sale of receivables and from the creation of provisions in the banking sector was negative, reaching SKK -3.8 billion at the end of 2007 (Chart 43). In other words, this figure represents a credit loss from the banking sector's loan portfolio.

Operating efficiency deteriorated in the banking sector

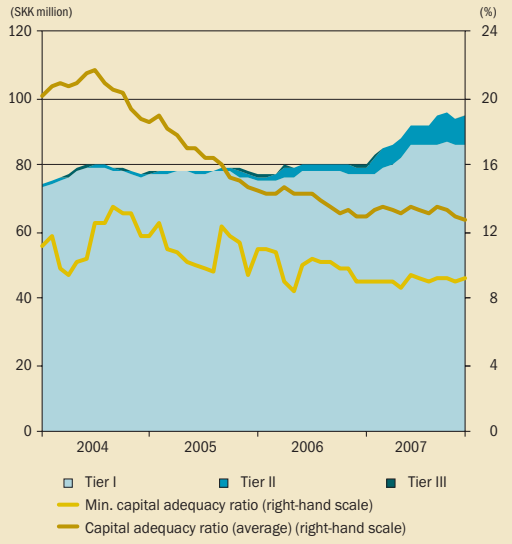
Operating costs in the sector increased year-on-year by 12%. This increase was caused to the greatest extent by purchased services, especially in relation to the administration and maintenance of information technology and costs associated with the adoption of euro, i.e. more or less by one-off factors. Operating efficiency, as measured by the *cost-to-income ratio*, recorded a year-on-year decline in the banking sector, with the indicator having increased from 55% to 59%.

4.1.5 Capital adequacy

The downward trend in the average value of capital adequacy moderated in 2007, except for certain banks. The quality of capital remained high

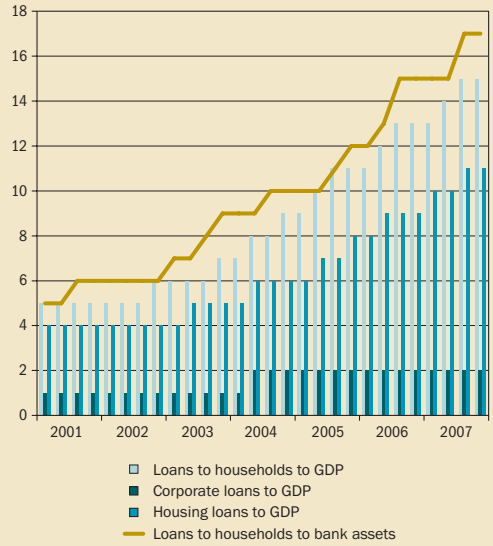
In the course of 2007 there was a moderation in the trend of a gradual fall in capital adequacy in the banking sector observed during 2005 and 2006 (Chart 44). The average capital adequacy ratio (weighted by the size of risk-weighted assets) decreased year-on-year from 13% to 12.8%. One of the reasons for this slowdown in the downward trend in capital adequacy was an increase in the volume of capital which tended to be rather stable in previous years. The quality of capital remains high despite an increase in the ratio of additional capital (Tier II) to total capital from 5.6% to 12.2% on a year-on-year basis. All banks met the prescribed capital adequacy limits (8%) in 2007, however, in some banks the fall in capital adequacy

Chart 44 **Capital adequacy ratio in the banking sector**



Source: NBS.
Note: The average value of CAR represents an average weighted by the size of risk-weighted assets.

Chart 45 **Loans to households by share of GDP and of bank assets** **(%)**



Source: Statistical Office of the Slovak Republic, NBS.

ratio did not stop and its value was approaching the critical 8% threshold. In the case of certain banks it will be necessary to increase the capital not only with regard to an expected further growth of loans but also due to the implementation of Basel II.[41]

4.1.6 Risks in the banking sector

CREDIT RISK[42]

Household credit risk

The high growth in loans to households continued in the domestic sector in 2007, causing a higher exposure of banks to credit risk from these loans

Indebtedness in the household sector at the macro level was reaching low levels in 2007 (Chart 45), largely owing to the fact that only a small number of households drew bank loans. This is also shown by the regional concentration, as the largest proportion of loans was provided in the Bratislava region.

Households were becoming more and more burdened by loan repayments in relation to their disposable income

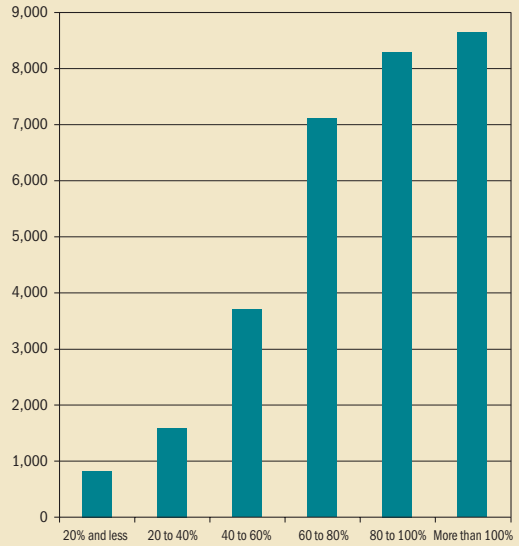
The level of the burden of repayments in 2007 was particularly influenced by the increase in real estate prices. Households were forced to finance the purchase of real estates using loans of a higher amount, which subsequently increased the repayments. To moderate this situation, maturities of loans were extended and interest rates decreased. However, the overall repayment burden of households was growing (reaching a level of 5.3% in December 2007). Thus from the viewpoint of credit risk, households were becoming more sensitive especially to a fall in income.[43]

41 *According to Basel II, three banks reported a capital adequacy ratio ranging between 8% and 9% as at 31 December 2007, meeting the prescribed limit by a very tight margin. The main reason lies in the implementation of an additional capital adequacy requirement for the coverage of operating risk.*

42 *Part 3 includes a more detailed evaluation of the financial position of households and companies from the viewpoint of credit risks.*

43 *When interpreting this indicator it has to be remembered that the numerator only includes loan repayments of households with a loan, whereas the denominator includes disposable income of all households. Loan repayments only include repayments of bank loans. The ratio of bank loans to total household liabilities was approximately 65% in 2006.*

Chart 46 **Ratio of the volume of real estate loans in the second half of 2007 to the value of real estates (SKK million)**



Source: NBS.

From the microeconomic point of view, the burden of repayments in individual households is reaching relatively high levels – they are sensitive to increases in consumer prices and living expenses

The latest available data from 2006 (Survey of Income and Living Conditions – EU SILC 2006) indicate a relatively high indebtedness of individual households. After deducting common expenses (e.g. food, housing expenses) from disposable income, loan repayments constituted approximately 24% of the remaining income in a median household. This share increased year-on-year by 3 percentage points. The indicator value in the most burdened households (third quartile of distribution) reached 41%. The number of households whose repayments exceeded their disposable income less common expenses was also relatively high, constituting 7.3% of the total number of households in 2006 according to survey data. These households had been provided 8.1% of the total volume of outstanding loans.[44] Risks may be posed by factors such as growth in the consumer prices and living expenses of indebted households, which could further increase the tensions within the budget of these households. At the moment these risks appear higher than e.g. loss of income due to unemployment.

As per the data on the development of loan standards, obtained from a regular questionnaire survey of NBS, loan standards in banks were being loosened in recent years

Banks loosened their standards as a result of increasing real estate prices, a positive economic development and the influence of competitive pressure. In 2007, several banks recorded a significant increase in the amount of loans with an LTV[45] over 100% (Chart 46) despite a fall in the overall dynamism of loosening the standards. Thus the risk of loans to households is becoming more sensitive to changes in real estate prices. The growing LTV also brings with it an increase in the moral hazard of customers who, in this way, participate in the financing of their investments to a lesser extent. At the same time, a certain spiral has been created, where banks are supporting the demand for flats and houses by loosening the LTV standards, thus creating more space for a further growth in real estate prices. This, together with the banks' effort to increase their market share, will exert pressure on a further loosening of standards.

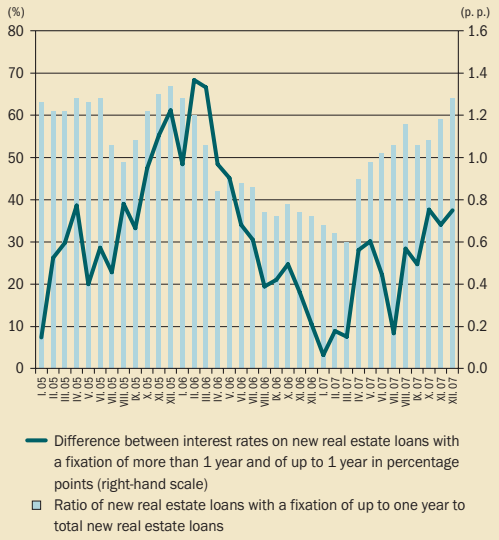
In 2007, banks continued to report a high proportion of new housing loans with a short-term fixation of interest rates

When choosing the length of interest rate fixation, households take into account the current interest rates and only minimally consider the risk that the rates may increase. In the second half of 2007 there was an increased number of loans with fixation of up to one year in new loans (Chart 47), paralleled with an increase in the differential between long-term rates and rates with fixation of up to one year.

The quality of household loan portfolio, as measured by the ratio of non-performing loans to total

44 *Imperfections in data obtained in the survey are further described in the NBS publication "Report on the results of the Slovak financial sector analysis" of June 2006.*
45 *The loan-to-value ratio represents the volume of provided loans and the value of collaterals.*

Chart 47 **New loans to households by the period of interest rate fixation**



Source: NBS.

Chart 48 **Ratio of bank loans to corporate assets** **(%)**

Source: Statistical Office of the Slovak Republic, NBS.
Note: The chart contains a complete statistical sample of companies, i.e. including companies without any bank loans. Where the reported capital of companies was negative, the ratio of bank loans to capital was assumed as being 150%. The values of on-balance sheet items were calculated as an arithmetic average of the respective quarterly values.

loans, did not change significantly in the banking sector in 2007

The loan default rate recorded just a modest increase, from 3.1% to 3.5% but it was falling in several banks, especially those with the highest values in 2006 (Table 6). However, this indicator is backward-looking and thus only partially indicating the size of risk in the loan portfolio.

Corporate credit risk

All categories of companies showed low median values in an indebtedness analysis measured by the ratio of loans to corporate assets

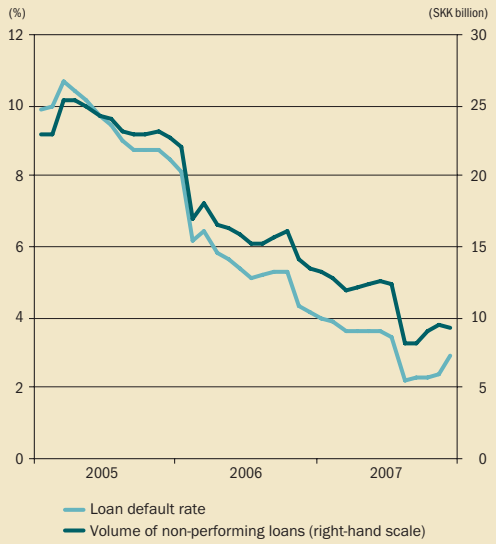
Companies are in little or no debt associated with bank loans (Chart 48). The median value in micro companies is even at the level of 0%, meaning that there are more companies on the market which do not have any loans than those which do. Small and medium-sized enterprises have the greatest median value (as well as average value) of loans, since large enterprises have more financing possibilities (bond issues, funds from parent companies etc.). Throughout the year there were no significant changes in the ratio of loans to assets of all companies, and it was at just a slightly higher level than in 2006 and 2005.

Table 6 **Loan default rate for the household sector** **(%)**

	XII.06	XII.07
Total loans to households	3.1	3.5
Mortgage loans	1.3	1.4
Building loans	1.6	1.5
Intermediate loans	4.3	3.8
Consumer loans	6.0	8.3
Credit cards	1.9	6.4
Other real estate loans	1.8	2.5

Source: NBS.

Chart 49 **Ratio and volume of non-performing loans to companies**



Source: NBS.

The trend of improving the quality of corporate loan portfolio continued in 2007

The ratio of non-performing loans to total loans reached 2.9% in 2007, which represents a year-on-year fall by 1.1 percentage points. The volume of non-performing loans fell, too (Chart 49). The most noticeable fall in the loan default rate, compared to December 2006, occurred in banks where it had exceeded 8%. The situation varied from bank to bank. In five banks there was an increase in both the ratio and the volume of non-performing loans. As many as eleven banks registered no non-performing loans as at the end of 2007. The decline in loan default rates in other banks was caused both by a fall in the volume of non-performing loans and a fast growth in loans to companies.

FOREIGN EXCHANGE RISK

Foreign exchange risk in the banking sector remained at a low level in 2007

Almost all banks were closing their open foreign exchange positions in the on-balance sheet – which was usually short – by currency derivatives in the off-balance sheet.[46] The short open foreign exchange position in the on-balance sheet was caused particularly by a high volume of foreign exchange reserves of foreign banks.

In most banks, value at risk in 2007 did not exceed 2% of own funds

Low correlation between the individual exchange rates may cause losses to banks even in the case of a closed foreign exchange position. In most banks the *VaR* as at the end of each month of 2007 did not exceed 2% of own funds.[47] However, it has to be noted that this analysis takes into account neither the time structure of the individual instruments which close currency positions nor, therefore, the risk of various oscillations of the domestic and foreign interest rates.

Indirect foreign exchange risk is difficult to evaluate clearly, however, it will be significantly reduced upon entering the euro area

Apart from their direct exposure to foreign exchange risk, which seems to be insignificant, banks are indirectly exposed to the effects of exchange rate fluctuations. As mainly enterprises and financial corporations receive a rising amount of foreign currency loans[48] (almost exclusively in euro), their ability to meet the repayments could come under threat in the event of weakening of the domestic currency. Although there are no relevant data available for a more detailed analysis of this fact, this risk will be reduced significantly upon Slovakia's entry into the euro area.

INTEREST RATE RISK

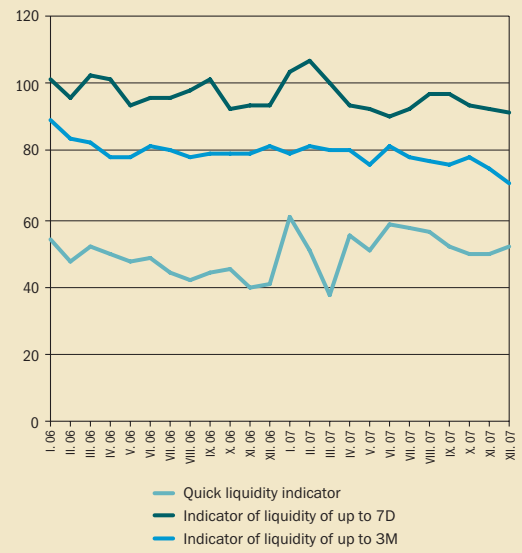
Interest rate risk was concentrated in the banking book, i.e. without any impact on capital

46 *Especially some branches of foreign banks were an exception to this rule but in their case it is possible to close the open position at the bank group level.*

47 *The VaR shows loss which should not be exceeded with a 99% probability, whereas it is assumed that the distribution of future movements in exchange rates may be simulated using the distribution of movements during the previous year (250 business days) and that the portfolio remains unchanged for 10 days.*

48 *Foreign exchange risk in households is negligible, since only about 2.5% of loans to households are in foreign currency, as opposed to loans to companies where this share is 35%.*

Chart 50 **Median values of liquidity ratios**
(%)



Source: NBS.
Note: The chart does not include branches of foreign banks whose market share is lower than 2% of total assets in the sector.

adequacy. The interest rate risk of the banking sector as measured by VaR is low

Since assets outweigh liabilities in longer maturities, the rising interest rates, especially for longer maturities, would adversely affect banks (by reducing net financial worth). Interest rate risk arises mainly from positions in the banking book, comprising mainly securities. In the event of a movement in interest rates, however, this risk would not affect the reported gain or loss, and therefore not the capital adequacy ratio, either. By contrast, interest rate positions in the trading book are basically closed. This is mainly the case with positions that have longer fixed interest rate periods, where the interest rate risk generally has a greater impact. The overall low open position in the banking book is mainly due to the relatively low volumes of trading book compared to banking book. The aggregation of the results for each bank shows that, with this loss taken into account,[49] the median capital adequacy ratio of the banking sector would decline to 15.3% (by 0.4 percentage points). The largest VaR is reported especially by banks with a higher ratio of government bonds to total assets.

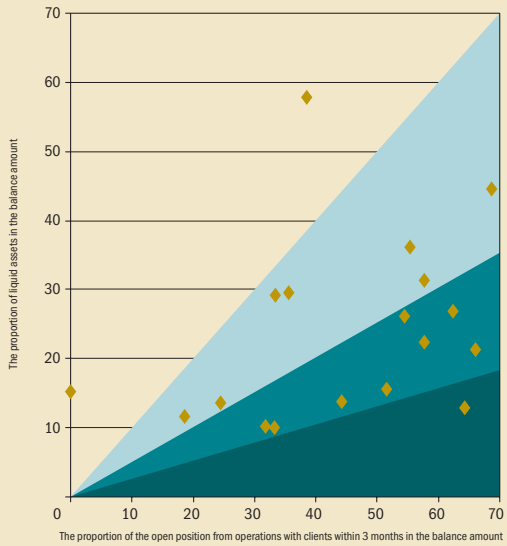
LIQUIDITY RISK

Although liquidity from a short-term point of view did not change substantially for the banking sector as a whole, some banks recorded a partial deterioration of it during the second half of 2007

From a short-term point of view of liquidity, there were no significant changes in the banking sector as a whole (Chart 50). The lower values of the indicator of liquidity of up to 3 months (calculated as the ratio of liquid assets of up to 3 months to liabilities with residual maturity of up to 3 months) indicate that the favourable condition of liquidity in these banks is based largely on the requirement of a stable core of deposits – some deposits must remain in the bank for a longer period than their real maturity. However, as we can see by comparing the liquidity cushion[50] and the open position for up to 3 months[51] in total assets (Chart 51), the significance of this requirement differs between banks. If the ratio of the open position on customer transactions to total assets equals the ratio of liquidity cushion to total assets, it means that the bank is able to cover the entire open position by the liquidity cushion. This situation is depicted in the upper half of the chart. These banks not only have a sufficient liquidity cushion, but they also have a very small open position on customer transactions. The central band includes banks whose liquidity cushion is sufficient to cover more than a half of the open position on customer transactions. Within this group, it is necessary to distinguish between banks according to the ratio of the open position to total assets. The majority of banks are concentrated below the line denoting 50% coverage of the

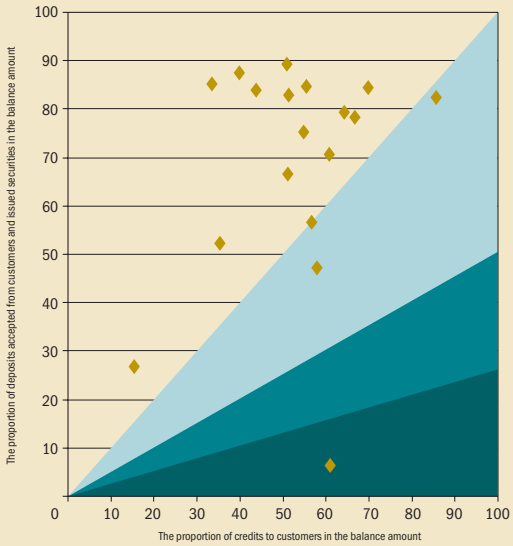
49 *For the assessment of risks, VaR was calculated as the maximum loss over a period of 10 days that will not be exceeded in 99% of cases.*
50 *The liquidity cushion is the sum of cash in vault, government bonds, Treasury bills, NBS bills, deposits with NBS and current accounts with other banks, after deducting banks' liabilities (except long-term liabilities) towards foreign banks and the ARDAL and assets provided as collateral.*
51 *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 to customers and issued securities which have a residual maturity of up to 3 months.*

Chart 51 **Comparison between the liquidity cushion and the open position of up to 3 months** (%)



Source: NBS.
Note: The chart does not include branches of foreign banks whose market share is lower than 2% of total assets in the sector.

Chart 52 **Comparison between the ratio of loans to total assets and the ratio of deposits and issued securities to total assets** (%)



Source: NBS.
Note: The chart does not include branches of foreign banks whose market share is lower than 2% of total assets in the sector.

open position on customer transactions for up to three months.

The long-term view on liquidity in the banking sector is favourable

In the long-term view on liquidity it is essential, in terms of sustainability of credit activities, that in most banks these activities are financed from customer deposits or from the issuance of longer-term securities rather than short-term funds from the interbank market (Chart 52). However, the ratio of loans to deposits and issued securities has a growing trend in several banks and its value within the banking sector as a whole increased year-on-year from 64% to 69%.

4.1.7 Stress testing[52]

The focus of this part is how to estimate the banking sector's sensitivity to exceptional but plausible changes in market conditions from the view of risks identified earlier in this report. Stress testing was based on estimating the impact of stress scenarios on individual banks, and these impacts are presented in an aggregate form. When interpreting individual results, however, the assumptions and limitations of the methodology used in the particular type of stress test need to be taken into account. First of all it should be remembered that the *estimates of the extent of the impact (e.g. on capital adequacy) are only informative*, since all the applied scenarios contain substantial simplifications. It makes much more sense to analyze the test results from the viewpoint of a mutual comparison of the sensitivity of changes in these quantities to shocks in the input parameters. Furthermore, *the models utilized assume a linear relationship*[53] *between the extent of the shock and its impact on quantities monitored,* whereas in reality, if the extent of shock exceeds a certain threshold, its effect on the given quantity may be non-linear and thus many times greater. Since extreme events occur very seldom, or rather we have no relevant

52 *A detailed methodology of the individual stress tests can be found in the NBS document "Annexes to the Slovak Financial Sector Analysis for the Year 2007", available on the website of Národná banka Slovenska.*
53 *The extent of response is proportional to the extent of shock.*

historical data at our disposal, it is very difficult to estimate the effect of non-linearity on the basis of historical data.

CREDIT RISK

Although credit risk should not substantially threaten the stability of the banking sector, the sensitivity of some banks to this risk increased during the second half of 2007. However, the main reason is that there was a fall in the capital adequacy ratio. The increase in riskiness in loan portfolios appears to be a less significant factor. The default rate of loans to companies as well as the growth rate of non-performing loans were lower than in the first half. The capital adequacy of two banks would fall below the level of 8% in a horizon of one year in a scenario with a twofold increase in the corporate loan default rate. From the viewpoint of credit risk in retail loans, most banks were not exposed to a significant deterioration in their quality or to a fall in real estate prices. The reason was that in the past the majority of these loans were secured by real estates whose value exceeded the value of loans. However, the sensitivity to a fall in real estate prices may increase in the case of loans that exceed the value of the respective real estates.

The first scenario simulates an increase in the default rate of old loans, combined with a credit crunch. The impairment of credit portfolios is based on either the historically largest rise in non-performing loans in the given bank (variant 1), or the existing default rates obtained from the Register of Bank Loans and Guarantees (variant 2), the respective values are further stressed by the factor M. The meaning of the multiplier varies between variants. In variant 1, M can be understood as the number of months in which there would be a repetition of the largest increase, but in the second variant it should be interpreted as a coefficient of the rise in the loan default rate. The evaluation of the effects of both versions of the first scenario is based mainly on the results obtained for multipliers M=2 or M=5. Whereas the lower parameter value represents a slight and rather probable impairment of the portfolio, the higher one should cover the situation of an exceptionally unfavourable development in the bank.

An extreme (fivefold) increase in the corporate loan default rate combined with a credit crunch would have an adverse impact only in particular banks, and in some of them could lead to serious problems with capital adequacy

A fivefold increase in the existing default rates (variant 2) would result in a fall in the median value of capital adequacy ratio by only 1.1%. However, when we look at the value of the first quartile of capital adequacy distribution which would fall from its real value of 11.1% (December 2007) to the stress figure of 5.9%, it becomes clear that the impact of such a scenario may not be considered negligible anymore. The considerably different changes in the median and the first quartile indicate that the effect on particular banks in the sector was uneven. Since the given scenario only takes into account the corporate credit risk, it projects banks with a main focus on retail as trouble-free. As many as 6 banks which would be most adversely affected by this scenario would have difficulty to meet the capital adequacy requirement. Should we also consider the possible impairment of the retail portfolio, losses thus combined could become really serious, especially for banks which cover both the segments considered (as many as five of the six most affected banks provide corporate as well as retail loans). In the case of a much more realistic twofold increase in the loan default rate, two banks would not be able to meet the capital adequacy requirement. The impact of the first variant of Scenario 1 would be substantially milder than the second variant, even despite the fact that it takes into account both corporate and retail loans. More discernible negative impacts would appear only in the case of a significant change to requirements represented by the option M=5. Three banks would fall below the capital adequacy limit of 8%, albeit two of them by only a very tight margin. The respective fall in the capital adequacy median would not even reach the level of a single percentage point.

Scenario 2 depicts a situation in which banks seeking to increase their market share offer an abundance of new loans; in doing so, they also lend to customers of lower financial standing , which leads to these loans having a higher default rate. This scenario is also realized in two variants, and uses a pairing of

multipliers M_1 and M_2, each of which has the same meaning in both variants. Multiplier M_1 expresses the relationship between, on the one hand, what was in 2007 the highest proportion of total loans that were non-performing, and, on the other hand, the proportion of new loans that will in future be non-performing. Multiplier M_2 is used for simulating an increase in bank lending given the average month-on-month relative changes in the lending volume over the past year. The second interpretation involves extending the time period during which the stress test scenario applies. The analysis of the second scenario is similar to that of the first scenario, based on two simulations capturing the more moderate (M_1=2, M_2=2) and more adverse (M_1=5, M_2=5) development of credit risk.

Individual banks and the sector as a whole showed low sensitivity to the scenario of an increase in loans to creditworthy customers and their subsequent default

With the exception of one bank, the impact of the second variant it basically very limited. Even in the first variant, significant changes would occur only if the situation in banks corresponded to stress parameters with the value of M1=M2=5. Such inputs would see the median capital adequacy ratio fall to 12.8%, i.e. by 3 percentage points. Except for some cases, the impact of the first variant of the scenario was distributed relatively evenly throughout the entire sector.

The third scenario focuses on assessing the impacts of changes in real estate prices and is based on detailed microeconomic data. The potential effect that a decline in the prices of real estates provided as collateral would have on the additional creation of provisions and, subsequently, on the capital adequacy ratio, was assessed. The scenario of declining real estate prices works on the assumption that the unsecured parts of loans in different credit categories (three in all) are sequentially covered by provisions to the extent of 0%, 10% and 100%. The decrease in prices on the property market is set at 30% or 50%.

The scenario of a decline in the prices of real estates used as collateral for bank loans had little effect on banks

Despite a considerable recession in the real estate market (a fall in prices by 50%), more than two thirds of banks would be affected by a fall in the capital adequacy ratio by less than 1 percentage point. Four banks would be exposed to a more significant reduction (by approx. 3 percentage points) in this indicator, should these circumstances persist. The most likely rationale behind the low vulnerability of banks in this scenario is that they pursue a conservative approach to the amount of loans provided with respect to the value of collaterals, and that this approach was predominant in the past.

The fourth scenario includes the combination of two input macroeconomic shocks. The scenario assumes that the unemployment rate rises by 10 percentage points, which through a fall in the disposable income in some households would effect an increase in the proportion of non-performing loans by 5 percentage points. Another two assumptions in this scenario are a fall in real estate prices by 50% and the creation of provisions for non-performing loans in the entire volume of uncollateralized value (i.e. amounting to 100%).

Not even a combined extreme scenario poses a threat to the stability of particular banks or the banking sector as a whole

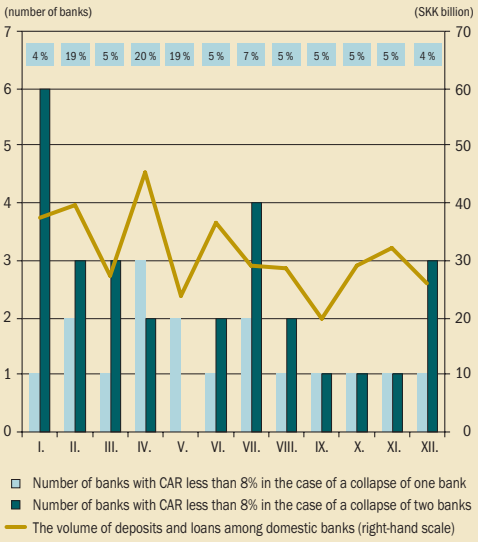
Although the scenario is really extreme, test results indicate a good resilience of the sector to such development. Only three banks would be affected by a more pronounced fall in the capital adequacy ratio (by approx. 6 p.p.). The high rate of own funds in these companies ensures that even a fall of such a degree does not pose a serious threat to their financial stability.

SYSTEMIC RISK[54]

The results of SYSTEMIC risk stress testing show that a direct impact of a collapse of any bank,

54 *In this analysis, contagion risk denotes that the collapse of one domestic bank brings about deterioration in the situation, or eve n collapse, of other banks. The principal reason for this may be the links between banks in the form of deposit and loan transactions in the interbank market. In this respect, therefore, contagion risk is related to the credit risk arising from interbank claims and it depends on the diversification of the portfolio of claims in the interbank market.*

Chart 53 **The impact of systemic risk stress testing on the domestic interbank market in 2007** (%)



Source: NBS.
Note: The left vertical scale shows the number of banks whose capital adequacy would fall below 8% in the event of the collapse of one or two banks. The right-hand scale shows the amount of deposits and loans made between domestic banks, in SKK billions (outstanding amount as at the month-end). Figures above the chart show the assets of banks whose CAR would fall below 8% after the collapse of one bank as a share of the total assets of the banking sector.

resulting from defaulted interbank receivables, on other banks would be relatively low owing to a relatively low ratio of interbank deposits and loans to banking sector assets as well as to their relatively high diversification. The results of stress testing show that as at the end of each month in 2006, the sector included no more than four banks whose capital adequacy ratio would fall below the 8% limit in the event of another bank failing to meet its liabilities (Chart 53).

Thus the systemic risk in the Slovak banking can be generally evaluated as low

Systemic risk can be said to have decreased in the second half of 2007 compared to the first half, which was simultaneously associated with a fall in the entire volume of deposits and loans in the domestic interbank market. The analysis further shows that even though a collapse of one bank causes the capital to fall below the prescribed level, the likelihood of any further spread of defaults is low if no other conditions deteriorate.

LIQUIDITY RISK

From the liquidity point of view it is positive that the banking sector has a sufficiently large volume of liquid assets with which it could cover an unexpected withdrawal of 20% of customer deposits or 90% of the volume of deposits of foreign banks. In both cases the change in liquidity indicators would not constitute more than twice the average month-on-month change in most banks.

Two scenarios were chosen for liquidity risk stress testing: 1. a fall in the volume of customer deposits by 20%; and 2. a fall in the volume of deposits of foreign banks by 90%. The analysis of the impact of these scenarios is based on the sensitivity of three selected liquidity indicators. Each indicator is calculated as the ratio of liquid assets and volatile funds in the respective category. The size of shock was considered in regard to the absolute value of the average month-on-month change in these ratios.

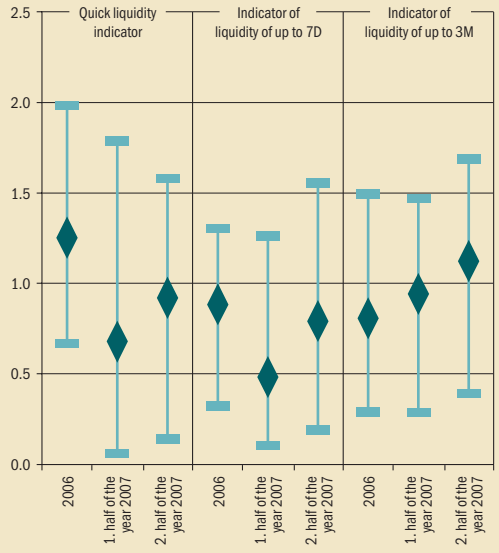
A scenario where 20% of customer deposits are withdrawn would not have a significant impact on the situation in most banks in terms of their liquidity

As shown in Chart 54, the impact of a withdrawal of 20% of customer deposits on the particular liquidity indicators would not extremely exceed the average month-on-month changes in at least a half of the banks. At the same time we can see that the sensitivity of the first two indicators to this scenario decreased during the first half and increased slightly during the second half of 2007, mainly owing to an increase in deposits fixed for a short period, without any significant increase in liquid assets in some banks.

The impact of a scenario of a fall in the deposits of non-resident banks by 90% did not change substantially during 2007 (Chart 55)

The results of the second scenario indicate that all banks would be able to cover a 90% fall in the deposits of non-resident banks by assets with liquidity of up to one month. For most banks it would even be sufficient to use highly liquid assets.

Chart 54 **The impact of a scenario with a 20% fall in customer deposits**



Source: NBS.
Note: The chart shows the lower quartile, median, and upper quartile of the distribution of the share of changes in the liquidity indicators after applying the scenario to the average month-on-month changes during the previous 12 months.

Chart 55 **The impact of a scenario with a 90% fall in the volume of deposits of foreign banks**

Source: NBS.
Note: The chart shows the lower quartile, median, and upper quartile of the distribution of the share of changes in the liquidity indicators after applying the scenario to the average month-on-month changes during the previous 12 months.

MARKET RISKS

Stress testing has shown that equity risk and direct foreign exchange risks in the banking sector are low, or rather comfortably covered by own capital. At the level of the banking sector as a whole, the impact of unexpected changes to the NBS base rate on profitability would be relatively low. This is because the changes to the real value of securities revaluated to fair value against profit and loss are secured by interest derivatives. The impact on interest income from deposits and loans would also be relatively low. However, should the interest rates increase, banks would be subjected to a relatively significant fall in the economic value of securities held to maturity and for sale. This may have a negative impact on the sector's profitability, should it be necessary to sell some of these securities prior to their maturity.

Foreign exchange risk

The analysis of the impact of a simulated significant strengthening or weakening of the domestic currency against other currencies on the individual segments of the financial market includes two scenarios, calculated on the basis of an expected movement in the exchange rate of SKK/EUR by 15%. The movements in other exchange rates were calculated using an estimate of correlations during stressed periods which are generally higher than correlations in quiet periods (no less than twice as much in some currencies). The size of risk is approximately threefold compared to the most significant movements in exchange rates which occurred within a period of ten business days in the remaining years. Simulated movements in exchange rates and their comparison with historical scenarios are shown in Table 7.[55]

The simulation indicates that the exposure of the banking sector to foreign exchange risk is very low

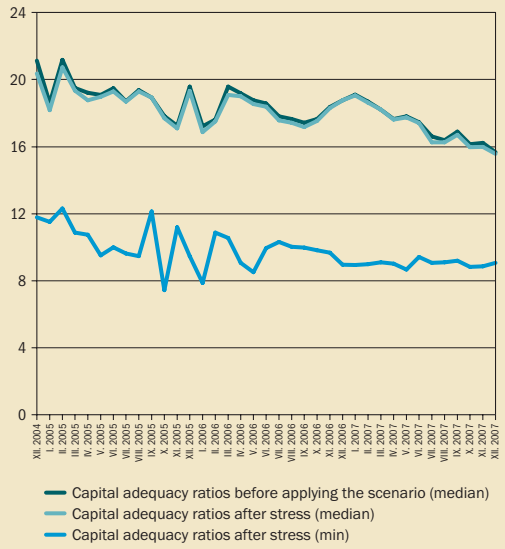
55 *For a more detailed description of the model which served as the basis for the above scenario, refer to the NBS document "Annexes to the Report on the results of the Slovak Financial Sector Analysis for the Year 2007", available on the website of Národná banka Slovenska.*

Table 7 **Simulated movements in exchange rates, obtained by estimating mutual correlations in stressed periods (%)**

Currency	Estimated change upon the koruna weakening against the euro by 15%	Estimated change upon the koruna strengthening against the euro by 15%
CHF	16	-16
CZK	10	-10
DKK	15	-15
EUR	15	-15
GBP	14	-14
HUF	6	-7
JPY	17	-18
PLN	5	-5
SEK	14	-15
USD	16	-17

Source: NBS.

Chart 56 **Time series of the effects that the exchange rate movements given in Table 7 have on capital adequacy ratios**



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

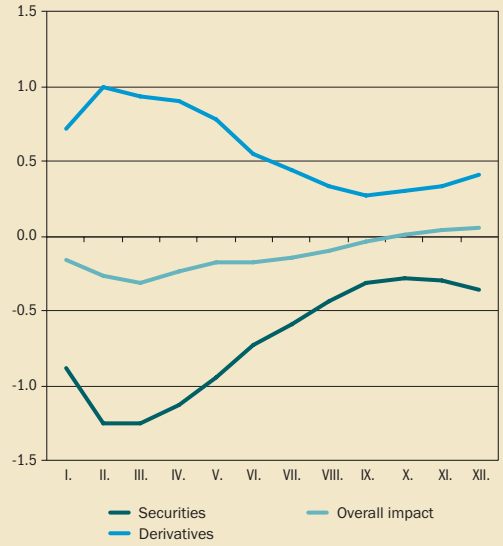
A possible loss should not exceed 0.2% of assets in most banks and branches of foreign banks even in the case of extreme movements in exchange rates. The conclusion as to the low impact of extreme movements on the banking sector was valid not only as at the end of 2007, but also during the period of 2005-2007 (Chart 56). In the case of simulated extreme movements in exchange rates shown in Table 17, stress testing of foreign exchange risk as at the end of each month did not reveal any possible decline in the capital adequacy ratio below the 8% threshold.[56]

Interest rate risk

In interest rate risk stress testing we estimate the profit/loss during the period of January to December 2008 in case of unexpected movements in the NBS base rate, therefore it is necessary to determine which movements in this rate are expected in the financial sector. Two-week seasonal interbank market rates were calculated from interest rate curves by interpolation, the expected NBS base rate was then calculated using these rates and the EC model. On the basis of estimates, the financial market did not expect any movements in the base interest rate, for which reason any changes are considered unexpected and any impact of the changes an impact of the interest rate risk. The stress scenario was, therefore, set as an increase/decrease in the NBS interest rate by 2 percentage points as at 1 January 2008, without any movements in the rate in the following period. When interpreting the scenario results we have to remember that the only impact considered is that on net interest income or on net income from the revaluation of debt securities or of interest rate derivatives. Impacts on the change to other non-interest income (e.g. income from fees or from net creation of provisions due to the impact on customers' financial position and ability to repay loans) have not been estimated. When simulating a decrease/increase in the NBS rate by 2 percentage points, the development of interbank, discount and customer interest rates was estimated using the EC model. For stress testing of interest risk for the banking sector (excluding branches of foreign banks), the impact of a movement in the NBS base rate was calculated separately for the portfolios of securities, interest rate derivatives and deposits and loans. Two approaches were used in the calculation. The first calculates the profit or loss solely from products that are reported in real value and revaluated

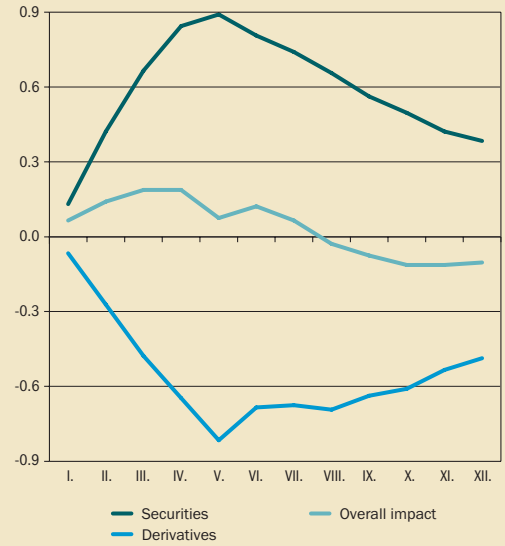
56 *A different situation would occur if the calculation of the open foreign exchange position also included off-balance sheet claims and liabilities from loan commitments and guarantees.*

Chart 57 **The impact of an increase in the NBS rate on the banking sector in 2008, 1st approach (SKK billion)**



Source: NBS.

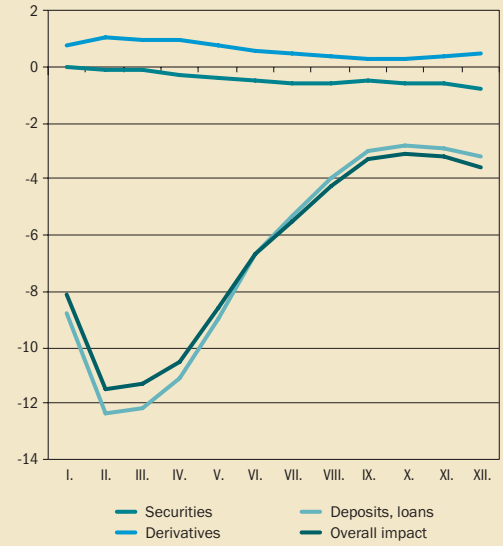
Chart 58 **The impact of a decrease in the NBS rate on the banking sector in 2008, 1st approach (SKK billion)**



Source: NBS.

against profit and loss, while the second approach is based on the fact that if necessary, banks can also sell those instruments that are not revaluated against profit and loss.

Chart 59 **The impact of an increase in the NBS rate on the banking sector in 2008, 2nd approach (SKK billion)**



Source: NBS.

An increase in interest rates would have a more significant impact on net financial worth

The overall impact on the banking sector of a shock caused by an unexpected increase in the NBS interest rate, resulting from the revaluation of instruments reported in real value, would be moderate (Chart 57). On the other hand, the banking sector would be negatively affected by a decline in NBS base rates, when losses in the portfolio of interest rate derivatives would exceed the profits from securities portfolio as at the end of period monitored (Chart 58). An increase in the NBS base rate would have a clear-cut negative influence if there is a need of banks to sell instruments which are otherwise not revaluated against profit and loss (Chart 59).

Macro stress testing of interest rate risks

The following scenario was created for the testing of a possible impact of a negative development on foreign markets: the value of shares fell by 20%, koruna appreciated by 5% against the euro and by 6% against the dollar, and there was a parallel increase in dollar and euro interest rates by 1 percentage point. The movements in other exchange rates were evaluated

Table 8 **Value at risk and the impact of stress scenarios on the banking sector** **(%)**

Capital adequacy ratio	Situation as at 30 December 2007	Ratio of income to risk-weighted assets	Foreign exchange risk[1]			Interest rate risk			Total market risks	Credit risk		
			VaR[2]	EUR/SKK +15%[3]	EUR/SKK -15%[3]	VaR[2]	Increase by 2 p.p. 1st approach[4]	Decrease by 2 p.p. 2nd approach[5]	VaR[2]	Scenario 1[6]	Scenario 2[7]	Scenario 5[8]
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
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
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

Source: NBS.
1) The calculation of the foreign exchange position only includes on-balance sheet assets and liabilities (with the exception of positive and negative derivative values) and the nominal values of spot and forward transactions and option transactions.
2) The capital adequacy ratio after taking into account the highest loss that a bank will suffer over a period of 10 business days in 99% of cases (calculated on the basis of historical simulations using data for one year).
3) The capital adequacy ratio after taking into account revaluation under a simulated depreciation of the Slovak koruna against the euro of 15%; the movements of other exchange rates were estimated on the basis of correlations in the stress test periods.
4) The capital adequacy ratio after taking into account changes in net interest income and revaluation of the portfolio of debt securities and interest rate derivatives reported in real value, in a time horizon of one year from when the NBS base rate is lowered by 2 percentage points.
5) The capital adequacy ratio after taking into account changes in net interest income and revaluation of the portfolio of debt securities and interest rate derivatives in both the trading book and banking book, in a time horizon of one year from when the base rate is raised by 2 percentage points.
6) A credit crunch with the assumption that the increase in non-performing loans recorded in 2006 will double (1-month time horizon).
7) The provision of loans with a higher default rate together with the assumption that the proportion of non-performing new loans to total new loans increases fivefold in comparison with the existing proportion of non-performing loans and that the average month-on-month increase in lending volume rises fivefold (1-month time horizon).
8) The unemployment rate rises by 10 percentage points and real estate prices decline by 50% (1-month time horizon, taking into account only the effect on retail loans).

while taking into account the historical correlations in stressed periods. The extent to which the value of shares decreased was based on historical data. The expected increase in foreign interest rates is related to the emergence of insecurity and a fall in liquidity in the financial markets in a more volatile period.

The crisis on foreign financial markets did not notably affect the domestic banking sector

This scenario would have virtually no impact on banks, since their direct exposure against foreign financial markets is minimal. The current crisis on developed financial markets, whose scenario is just a gross approximation, has had no directly noticeable impact on the banking sector as a whole. However, it was negatively reflected in the revaluation of debt securities of selected banks. The banking sector, usually the most sensitive sector in terms of liquidity situation, reported a sufficient quantity of domestic primary resources.

4.2 Insurance sector

4.2.1 Premiums written and technical premiums written[57]

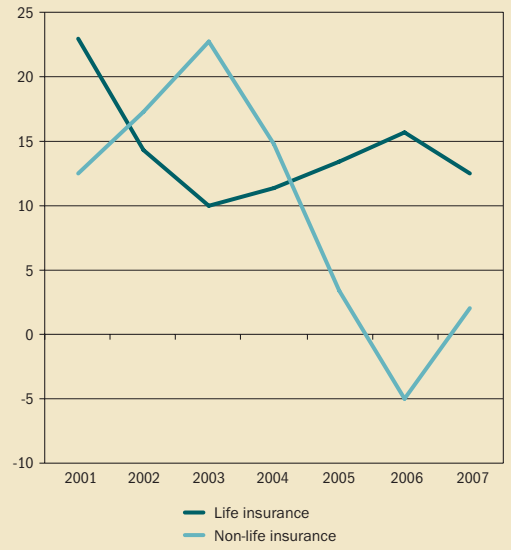
The trend of a fast growth in life insurance and stagnation of non-life insurance continued

Technical premiums written reached the value of SKK 57.4 in 2007. Technical premiums written in life insurance reached SKK 28.5 billion and technical premiums written in non-life insurance SKK 28,9 billion. This means that the difference between technical premiums written in life insurance and in non-life insurance shrank to SKK 0.4 billion, the lowest difference in history. If this development continues, we may expect that technical premiums written in life insurance will surpass technical premiums written in non-life insurance. This shows that the trend of a fast growth in technical premiums written in life insurance, observed since 2005, continued, paralleled by a simultaneous

57 *Because premiums written were reported in accordance with Slovak accounting standards up to the end of 2005 and in accordance with IAS/IFRS standards from 2006, NBS analysed technical premiums written; these may be defined as the price agreed in individual insurance contracts without regard to the method of their financial reporting. Gross premiums written as defined by IAS/IFRS standards amounted to SKK 54.1 billion as at 31 December 2007.*

Chart 60 **Growth rate of premiums**

(%)



Source: NBS.

stagnation in non-life insurance (Chart 60). This does not mean, however, that there were fewer insurance contracts in non-life insurance but rather that the insurance coverage was getting cheaper. Whereas technical premiums written in life insurance increased by 12.4% in 2007, the growth in non-life insurance was just 2.15%.

Technical premiums ceded to reinsurers recorded another year-on-year decline in 2007

Premiums ceded to reinsurance companies amounted to SKK 9.7 billion in 2007, which represents a decline of 5.2% compared to 2006. This means that the ratio of premiums ceded to reinsurance companies to total technical premiums has been falling continuously since 2006. Premiums ceded to reinsurers declined in both life insurance and non-life insurance (Table 9). As much as 87% of ceded premiums fall on non-life insurance.

4.2.2 Claims incurred and[58] loss ratio

Claims incurred were growing faster in life insurance

Claims incurred reached SKK 22.8 billion in 2007. Claims incurred in life insurance grew by 14.5% in 2007, reaching the value of SKK 10.7 billion. In non-life insurance, claims incurred were growing slightly slower (by 11.6%) and reached SKK 13.2 billion.

Loss ratio has grown[59]

The loss ratio for the whole of non-life insurance in 2006 stood at 48.47%, which represents an increase of 2.6 percentage points. It has grown in the largest non-life insurance category – motor vehicle third party liability insurance – by 10.3 percentage points. This increase was caused both by a growth in claims incurred and by a fall in earned premiums which has been falling year-on-year since 2004. Claims incurred in comprehensive motor insurance and in property insurance fell by 4 percentage points or 1.5 percentage point as a result of an increase in earned premiums at a simultaneous growth in claims incurred.

Table 9 **Ceding of technical premiums to reinsurers**

	2007 (SKK billion)	2006 (SKK billion)	Share of technical premiums written in 2007 (%)
Total	9,7	10,2	16,9
Life insurance	1,3	1,4	4,4
Non-life insurance	8,4	8,9	29,3

Source: NBS.

58 *As it did with technical premiums written, NBS, for the purposes of this report, analysed technical claims incurred (in this report "claims incurred" shall be understood to mean "technical claims incurred").*

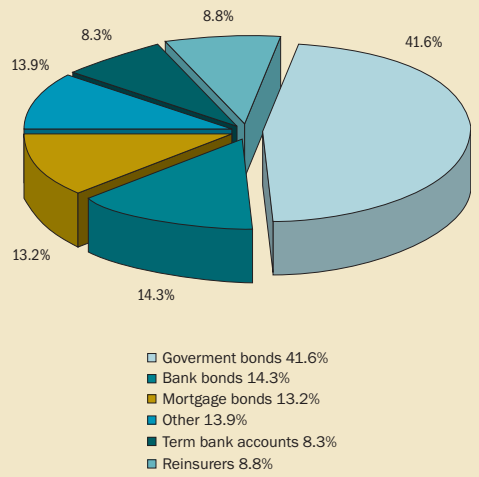
59 *The loss ratio is a percentage ratio of the following: the sum of claims incurred and the change in the gross technical provision for claims (PC) to gross technical premiums written after deducting the change in the gross technical provision for unearned premiums (PUP) – i.e. premiums earned. The loss ratio is tracked only in non-life insurance.*

4.2.3 Technical provisions and their investment by the insurance companies

As insurance products develop and the liabilities of insurance companies rise, so technical provisions are increasing. They are invested conservatively

Gross technical provisions without taking into account the reinsurers' share of technical provisions totalled SKK 113.5 billion as at 31 December 2007. Gross technical provisions less reserve for the coverage of liabilities arising from investments on behalf of the insured[60] totalled SKK 99.3 billion as at 31 December 2007. Assets covering technical provisions reached the value of SKK 107.1 billion, which represents 107.8% of created technical provisions less reserve for the coverage of liabilities from investments on behalf of the insured. Investments are still conservative, in low-risk assets (Chart 61).

Chart 61 **Investment of technical provisions (%)**



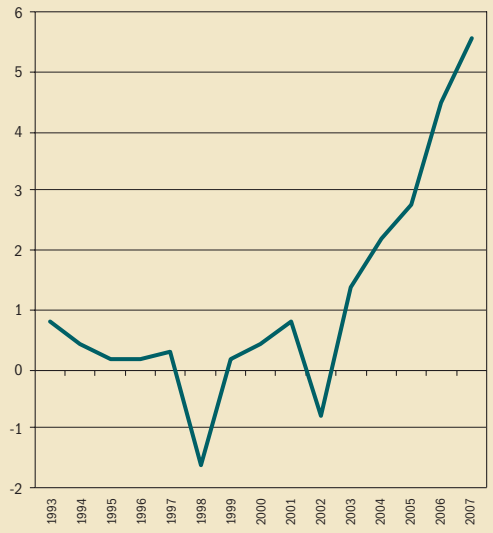
Source: NBS.
Note: The term "government bonds" means bonds issued by the Slovak or other EU governments, bonds issued by NBS or other central banks, bonds guaranteed by Slovakia, and bonds issued by the EIB, EBRD or IBRD.

4.2.4 Financial position of the insurance sector

Profitability in the insurance sector recorded a favourable development

The profits of insurance companies grew 24.8% compared to 2006, reaching the value of SKK 5.6 billion. This means that the period of a robust growth in income in the insurance sector has been continuing since 2004 (Chart 62). Together with growing profits there was also a rise in the return on assets and return on equity. In 2007 the loss in the technical account of life insurance increased by SKK 216 million, to SKK 1.3 billion. The lower profit or greater loss in the technical account of life insurance in most insurance companies was caused by a higher growth in technical provisions. Profit from financial transactions constituted SKK 5.1 billion, which represents an increase of SKK 335 million compared to 2006, allowing a sufficient coverage of loss in the technical account of life insurance. To the contrary, the profit in the technical account of non-life insurance increased SKK 1.1 billion to SKK 3.3 billion, particularly due to a faster growth in earned premiums in comparison with technical costs, not only for the insurance sector as a whole but also in most insurance com-

Chart 62 **Total profits of insurance companies (SKK billion)**



Source: NBS.

60 *In the Unit-Linked insurance, the economic investment risk is borne by the policyholder. For this reason, the investment of technical provisions is tracked after the Unit-Linked reserve has been deducted.*

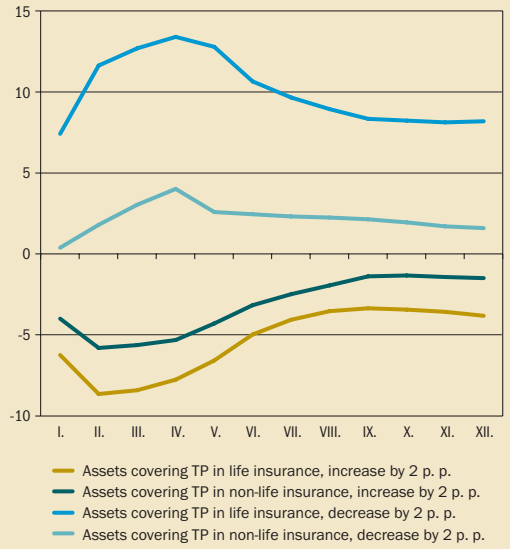
panies individually. Three insurance companies made loss in 2007.

4.2.5 Solvency of the insurance companies

All insurance companies met the regulatory solvency requirements. In 4 insurance companies, the value of the guarantee fund did not reach the required minimum value

In terms of assessing the solvency of insurance companies it is required that their real solvency ratio (own funds) be higher than the prescribed limit and also that the value of guarantee fund be at least the same as the minimum value of guarantee fund. The proportion of total real solvency ratio in the required solvency ratio was 2.8 (2.9 in life insurance and 2.7 in non-life insurance), having grown year-on-year by 0.2. The reason behind this was an increase in own funds using profit made in 2006. The value of the guarantee fund in all insurance companies was at the level of its minimum value in non-life insurance and, with the exception of four insurance companies, the same applied to life insurance.

Chart 63 **The impact of a change in the NBS rates on assets covering technical provisions of insurance companies in 2008**



Source: NBS.
Note: The vertical scale shows the median of the ratio of estimated profit/loss from revaluation and change in interest yields in the debt securities portfolio to total value of assets covering technical provisions (calculated cumulatively from the beginning of the period).

4.2.6 Risks in the insurance sector[61]

Insurance companies (especially life) would be exposed to a negative impact particularly in the case of an increase in interest rates, which would effect a fall in the interest income from invested technical provisions

An increase in the NBS base rate in the insurance sector has a relatively significant impact on the value of the debt securities portfolio, especially in life insurance (Chart 63). In insurance companies, as shown by VaR measurements, there is a 1% probability that in the course of 10 days the value of assets covering provisions may fall by 2.3% in life insurance and by 0.7% in non-life insurance (median values), due to a relatively large ratio of debt securities to assets covering technical provisions of insurance companies (77%) and their high duration, especially in some insurance companies. On the other hand, only a small proportion of debt securities portfolios is revaluated to fair value against profit and loss. Hence interest rate risk will not be reflected in the profitability of insurance companies immediately after a possible change in the interest rates. The impact will only be gradual, through lower interest yields. Payout of funds to customers in some life insurance products may be agreed with a fixed interest rate or a longer period of interest rate revaluation, which effects a decrease in the estimated exposure against interest rate risk.

The insurance market as a whole was exposed to a relatively low equity risk

The volume of investments in shares and units comprised only 3% of the total volume of assets covering technical provisions. Only nine insurance companies were using these investments to cover technical provisions, mostly in life insurance. The

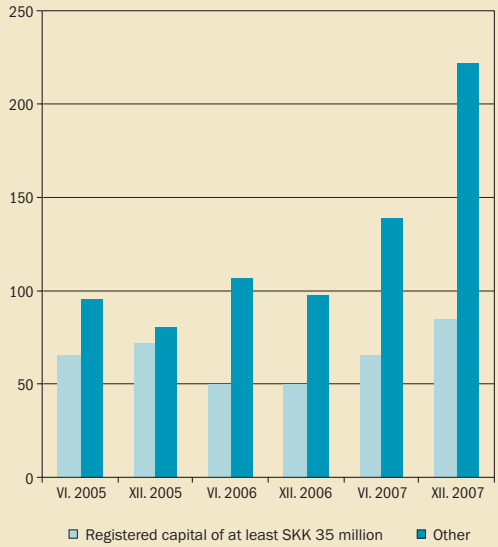
61 *Due to a lack of available data for a detailed analysis of the insurance companies' exposure against insurance risks, this analysis is only concerned with the impact of market risks. The analysis only relates to assets covering those technical provisions in which the risk is borne by the insurance company. It does not deal with assets which do not cover technical provisions and assets invested on behalf of the insured.*

investments of insurance companies were mainly directed to shares and units of foreign funds or to units of domestic bond, money and special mutual funds, which, however, may cause an additional exposure of insurance companies to foreign exchange and interest rate risks. It is impossible to evaluate these risks accurately despite the prescribed limits on foreign exchange risk.

The direct foreign exchange risk of assets covering technical provisions is negligible in most insurance companies. In some insurance companies, a strengthening of koruna vis-à-vis the euro would have a slightly negative impact on the value of assets covering technical provisions. Insurance companies are indirectly exposed to foreign exchange risk through investments in mutual funds

VaR for foreign exchange risk does not exceed 0.6% of the total value of technical provisions in any of the insurance companies. In those insurance companies which have an open foreign exchange position, this position is long as the liabilities of insurance companies are usually denominated in domestic currency. The position in euro comprises 63% of the total open position. Significant movements in foreign exchange rates would not have a significant impact on most insurance companies, since the size of open foreign exchange companies in technical provisions and assets covering technical provisions is limited by law. Apart from four insurance companies, the evaluated loss would not exceed 0.3% of assets covering technical provisions in both life and non-life insurance. However, it should be noted that although foreign exchange positions are virtually closed in all the other insurance companies, significant movements in foreign exchange rates may have an indirect impact through investments in mutual funds. Although the units of these funds are denominated in the Slovak koruna, foreign exchange risk may be reflected in a fall in their value since the mutual funds themselves may not have their foreign exchange positions closed. At the same time, insurance companies may be exposed to the foreign exchange risk through assets which do not cover technical provisions.

Chart 64 **Average capital adequacy ratio of non-bank securities dealers (%)**



Source: NBS.

4.3 Securities dealers

The capital adequacy ratio fluctuated above the statutory minimum limit of 8%

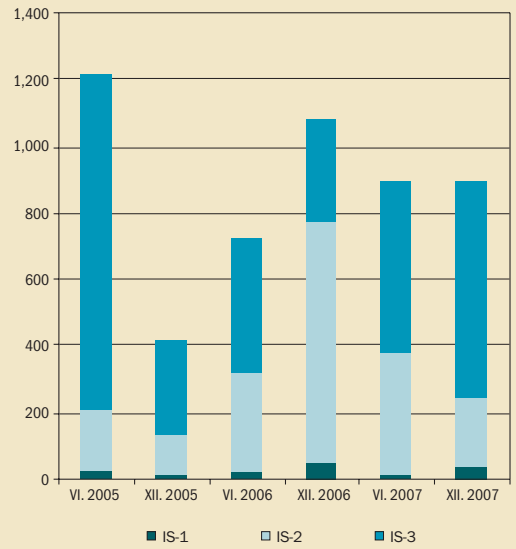
During 2006, the capital adequacy ratios of all non-bank securities dealers fluctuated above the statutory minimum limit of 8% (Chart 64).

There were only minor modifications in the volume of customer transactions, but their structure was changing

Customer transactions conducted within provided investment services IS-1 to IS-3[62] had a total value of SKK 1,793 billion in 2007, and transac-

62 *IS-1= investment service as defined in Article 6(2)(a) of the Securities Act, i.e. acceptance of a 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 in Article 6(2)(b) of the Securities Act, i.e. the acceptance of a customer's instruction to buy or sell an investment instruments and its execution for an account other than the account of the service provider.
IS-3 = investment service as defined in Act 6(2)(c) of the Securities Act, i.e. the acceptance of a customer's order to buy or sell an investment instrument and its execution for own account.

Chart 65 **Amount and structure of customer transactions by type of investment service (SKK billion)**



Source: NBS.

Chart 66 **Investments in open-end mutual funds in Slovakia (SKK billion)**

Source: NBS.

tions accounting for 95% of that figure were made through banks. This volume changed but modestly in comparison with 2006, when the total volume of transactions was SKK 1,810 billion. However, there was a year-on-year change in the structure of transactions within the individual types of investment services (Chart 65).

Changes also occurred in the structure of traded financial instruments

Whereas in 2006 bond transactions comprised as much as 47% of all trades, in 2007 this fell to only 22%. There was a significant increase in the trading in derivative instruments, especially forwards, options, swaps and futurities. The proportion of trades in these instruments increased year-on-year from 36% to 60%.

4.4 Collective investment

4.4.1 The sector in 2007

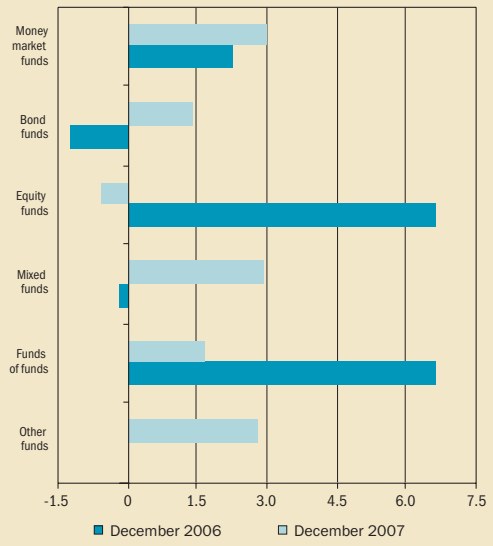
After a modest stagnation in 2006, the net asset value of mutual funds increased in 2007

The total net asset value of domestic mutual funds and foreign collective investment entities publicly offered in the Slovak Republic, insofar as they pertain to sales to investors in the Slovak Republic, increased by SKK 32 billion or 25% in 2007 (Chart 66). Net sales totalled SKK 26.5 billion, whereas in 2006 this value was negative. Equity funds, from which investors withdrew SKK 6.2 billion in 2007, were the most redeemed. Redemptions of bond funds also continued, totalling SKK 4.5 billion. In the course of the year the funds thus received, as well as new capital, were invested by investors particularly in money funds (net sales totalling SKK 14 billion), other funds – especially the hedge funds (SKK 9 billion) and mixed funds (SKK 8 billion). A sum of SKK 3.3 billion was invested in the newly created special real estate funds.

The average annual performance of open-end mutual funds was weaker than in 2006

As at the end of 2007, open-end mutual funds reported a slightly decreased year-on-year performance in comparison with December 2006, which was caused by a moderate rise in interest rates, stagnation on the world stock markets and strengthening of the Slovak koruna. This development of market factors was favourable especially for money and mixed funds which recorded a higher performance than in the previous year (Chart 67).

Chart 67 **The performance of domestic open-end mutual funds (% p. a.)**



Source: NBS.
Note: Funds are weighted by net asset value.

4.4.2 Risks in collective investment

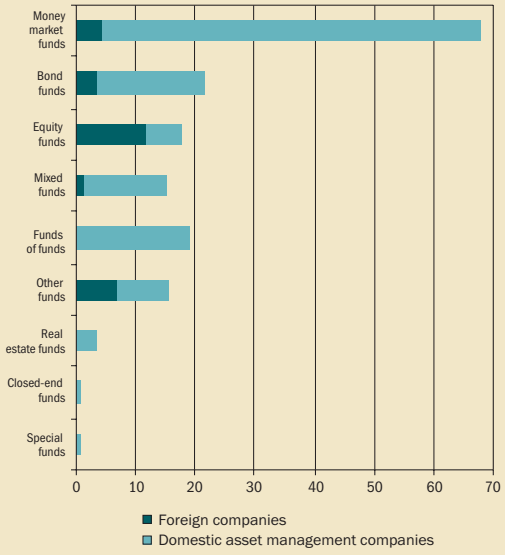
The most significant risk was the foreign exchange risk, with the equity risk also rising

Foreign exchange risk constitutes a relatively significant risk for mutual funds. The reason is that the funds of several mutual funds contain equity and debt securities denominated in foreign currencies. Funds of funds are the only funds with a low VaR, but they may also be exposed to foreign exchange risk, though indirectly, through the effect that the risk has on the value of units held in the funds' portfolios. The VaR for foreign exchange risk did not exceed the value of 7% of net asset value of any of the funds. Equity funds and funds of funds were the ones most exposed to a simulated appreciation of domestic currency (Table 7). Equity risk was calculated using the positions of funds in shares and units of other mutual funds. This risk may have a significant impact on the value of investments, especially in equity mutual funds. The level of this risk increased during the second half of 2007 due to the growing volatility in stock markets. On the basis of development in 2007 we may assume that with a 99% probability, the value of units of equity mutual funds should not fall by more than 10%, which is a relatively high value. The macro stress testing scenario (p. 54) would be important especially for mutual funds with a higher proportion of shares (Table 10).

Interest rate risk was low

The exposure against interest rate risk is relatively low, even in funds with a higher share of the bond

Chart 68 **Assets in the individual types of funds as at 31 December 2007 (SKK billion)**



Source: NBS.

Table 10 **The impact of macro stress testing (negative devepolments in foreign markets) (%)**

	Lower quartile	Median	Upper quartile
Mutual funds	-9	-6	-1
of which: equity	-25	-25	-24
bond	-3	0	0
mixed	-13	-7	-3
funds of funds	-19	-18	-16

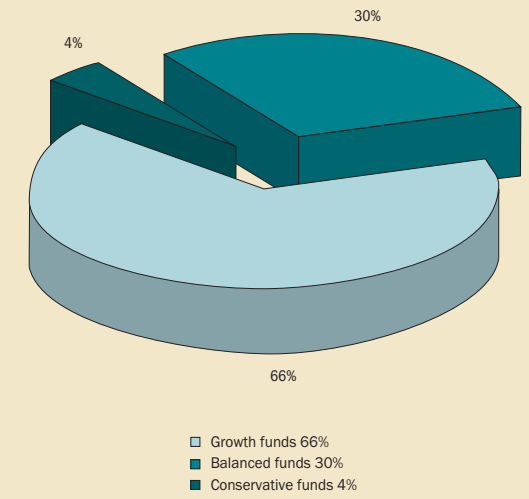
Source: NBS.
Note: The table shows the quartiles of the profit- or loss-to-asset ratio.

component. The VaR of interest rate risk does not exceed 1% of NAV in almost all mutual funds. Thus most funds would not record a more significant impact on the fair value of securities in the case of an unexpected movement in interest rates. However, if interest rates fall, their profitability would gradually decline.

Mutual funds were mainly invested in low-risk assets

Most total assets of mutual funds, as much as 64%, have a VaR of up to 1% of NAV, which means that the majority of mutual fund assets are invested in low-risk instruments. This is because almost a half of assets is concentrated in money funds (Chart 68) whose VaR oscillates within the interval of up to 1% of NAV. Equity funds, whose share of the total NAV is 5%, are the riskiest.

Chart 69 **Total managed assets by individual fund types in 2007 (%)**



Source: NBS.

4.5 Pension saving

4.5.1 The sector in 2007

PILLAR II

The growth in the number of savers in pension fund management companies (PFMCs) became more moderate

Already in 2007 Pillar II of pension insurance was closed to voluntary entries. Thus the number of savers only increased by less than 20 thousand and their total number reached 1,558,650 as at 31 December 2007. The net asset value accumulated in the funds of Pillar II of pension insurance exceeded SKK 51 billion by the end of 2007.

Although the vast majority of pension fund assets are placed in growth funds, the investment of assets is largely conservative despite a shift in the aggregate composition of the pension funds portfolio towards more volatile assets in 2007

Almost two thirds of all PFMC-managed assets are invested in growth funds (Chart 69). Such type of investment diversification is primarily a reflection of the initial state of the system's operation, when all savers are in the early stage of the saving cycle, expecting the highest possible long-term appreciation of their contributions, particularly in growth or balanced funds. The aggregate composition of the pension funds portfolio shifted slightly towards the potentially more profitable but also more volatile assets (Chart 70).

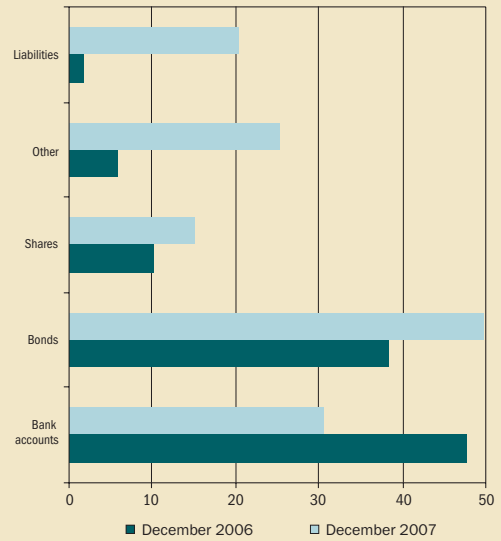
In 2007 the performance of funds was mainly influenced by a change in the structure of fund investments

The change in the structure of fund investments in the first half of 2007, associated with growth in stock markets, brought an increased performance in all funds.[63] There was an improvement especially in balanced and growth funds whose performance oscillated between 5% and 8% as at 30 June 2007. In the second half, however, the

63 *The average annual return on pension funds was calculated as a weighted average of percentage year-on-year changes in the daily values of pension units of the respective pension funds. The percentage year-on-year change in the daily values of pension units was calculated as at 31 December 2007 (PMZDHDJ31/12/07) in the following manner:*

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

Chart 70 **Total managed assets by investment type in Pillar II funds** **(%)**



Source: NBS.

negative developments on the markets, associated with the US mortgage crisis, caused the performance of these two types of funds to decline below the levels as at the end of 2006 in most asset management companies. Thus as at the last day of December 2007, the performances ranged in a band between 2% and 4.3% in the case of balanced funds and 2.1% to 4.3% in growth funds. The performance of conservative funds was between 3.7% and 4.5% (Table 11).[64]

Table 11 **Annual return on pension funds as at 31 December 2007** **(% p. a.)**

Types of funds	Arithmetic average	Weighted average
Conservative funds	4,0	4,1
Balanced funds	3,6	3,8
Growth funds	3,5	3,6

Source: NBS.
Note: A detailed methodology for this table is described in the Footnote 63.

Asset management companies improved their results

All companies but one significantly reduced their losses. Two companies ended their accounting year with a profit, bringing about the first two occurrences of a positive result ever since the creation of the system.

PILLAR III

Net value of assets managed in the funds of Pillar III of pension insurance reached SKK 25.3 billion

The total number of residents who were saving for their pensions through the five companies of voluntary Pillar III was 792 thousand as at the end of December 2007, 763 thousand were saving in contribution funds. The growth rate of the net asset value for all funds was 19% in 2007 and reached the level of SKK 25.3 billion as at the end of the year.[65] The greater portion of this increase as well as of the total volume (97%) refers to contribution funds.

The structure of Pillar III portfolio was significantly conservative at the end of 2007. In the course of 2007 there was a structural change in the composition of assets

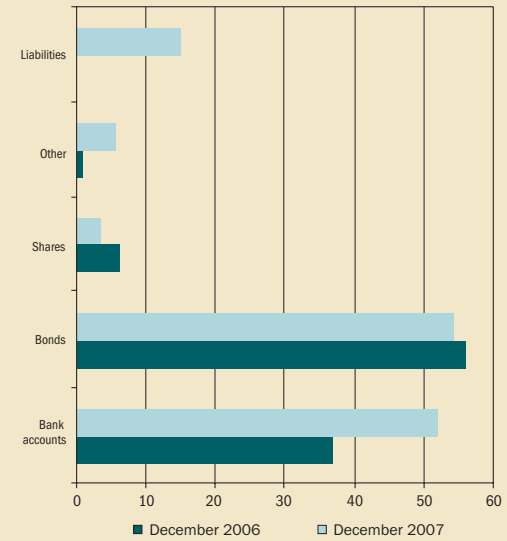
Almost all collected contributions were invested in bank accounts or bonds. As in Pillar II, a structural change in the composition of assets in 2007 occurred in the funds of supplementary pension

where DJ is the value of the pension unit for the respective date. If daily average is indicated, then weight is the ratio of the respective fund's net asset value to the sum of NAV of funds of the same type. The indicated return is nominal, which means that inflation has not been deducted. When determining the return of the various forms of investments, nominal value is usually indicated using a standard legal methodology for the calculation. However, the indicated return does not constitute the savers' yield on their personal pension account which is different for each individual.
The input data used were the values of pension units of the individual pension funds submitted to Národná banka Slovenska by pension asset management companies for 29 December 2006 (the last business day of 2006) and 31 December 2007, the data also available on the website of Národná banka Slovenska.

64 *The decisive factor for the saver is the average appreciation for the entire period of participation in Pillar II as at the date of retirement. For this reason it is necessary to evaluate the performance of funds in a long-term horizon.*

65 *The NAV for December 2006, which is part of the calculation of the year-on-year increment, also includes the NAV of the then supplementary pension insurance company Stabilita. However, this value is only informative due to the unavailability of accurate data.*

Chart 71 **Total managed assets by investment type in Pillar III funds** (%)



Source: NBS.

insurance companies. However, the nature of this change was virtually opposite to that in Pillar II – from the volume point of view there was a rise in the relative significance of funds held in bank accounts and a decline in the number of bonds (Chart 71).

The performance of Pillar III funds was very low, partly due to high fees collected by the SPICs.

The annual performance of contribution funds in Pillar III oscillated between 0.1% and 5.4% as at 31 December 2007.[66] However, the funds' NAV-weighted average was at a relatively low level of 1.0%. Considering that the year-on-year inflation rate was 2.5%, it means that the residents' savings were partly depreciated on average. The weaker performance of Pillar III funds (especially so when compared to Pillar II) is most probably to be traced to the supplementary pension companies' fee policy. That is to say that as at the end of 2007 the fund administration fees amounted on average to as much as 2.4% (simple arithmetic average for all funds) of the fund's net asset value. In three funds this rate was even set at the maximum legally permitted limit value of 3%. Moreover, the participants in Pillar III have the performance of their funds reduced by other expenses such as taxes, depository fees, fees for compensating trading in securities and others, which are paid using the fund's assets as opposed to Pillar II where these are borne by the asset management company itself. Three of five SPICs made profit in 2007.

4.5.2 Risks in pension saving

The funds of pension asset management companies are exposed to various market risks. While interest rate risk is the only relevant risk for conservative funds, growth and balanced funds are mainly exposed to equity risk

Table 12 **Pension funds and their exposure to risks** (%)

	Conservative funds			Balanced funds			Growth funds		
	Minimum	Median	Maximum	Minimum	Median	Maximum	Median	Maximum	Minimum
Equity risk	0.0	0.0	0.0	0.8	1.0	1.7	0.9	1.3	2.0
Interest rate risk	0.1	0.1	0.2	0.0	0.1	0.2	0.1	0.2	0.2
Foreign exchange risk	0.0	0.0	0.0	0.0	0.1	0.3	0.0	0.2	0.3
Total risk	0.1	0.1	0.2	0.7	1.0	1.9	0.8	1.3	2.2
Equity risk to equity portfolio	–	–	–	4.4	5.7	7.8	4.4	5.8	7.7
Interest rate risk to debt securities portfolio	0.1	0.2	0.6	0.1	0.3	0.9	0.2	0.3	0.9

Source: NBS.
Notes: The values in the table represent the ratio of VaR (at the probability level of 99% and an assumed 10-day holding of an unchanged portfolio) to NAV or to an equity or debt securities portfolio. In interest rate risk, the interest rate risk arising from the liability of time deposits is not taken into account.

66 *In this case we are talking about annual performance results provided by asset management companies, while the methods used for their calculation vary between companies.*

Conservative funds are only exposed to interest rate risk, having no open equity or foreign exchange positions. However, as indicated by VaR calculations, this risk is relatively low (Table 12). The funds usually hold SKK-denominated bonds with a relatively short duration. The most significant risk to which growth and balanced funds are exposed is equity risk, in comparison with which the foreign exchange and interest rate risks are relatively insignificant. Compared to the period at the end of the first half of 2007, the riskiness of equity portfolios increased due to the growing volatility in stock markets.

The contribution growth funds appear to be the riskiest within Pillar III SPICs

The majority of the SPICs' contribution funds are exposed to both equity and interest rate risks, albeit in different proportions. Funds are exposed to foreign exchange risk mainly due to a non-secured long position arising from investments in securities denominated in foreign currencies. Payout funds hold almost all of their funds in current or time accounts or in bonds with a short duration. The contribution growth funds investing in shares and units on a large scale were the riskiest from among supplementary pension insurance funds. The riskiness of these funds increased during the second half of 2007 due to a higher volatility in stock markets. However, their market share is relatively low.

4.6 Risks arising from financial sector developments in 2007

- The negative development in developed financial markets caused by the crisis in the US *sub-prime mortgage sector* led to a decline in the performance of some domestic funds through an increase in equity risk. Banks were not affected in a significant way.
- An increase in tensions in the budgets of indebted households, with respect to a repeated increase in prices attributable to global development, and loosening of the household lending standards.
- Changes in the sector structure of lending, where the proportion of lending to the real estate sector is growing.
- A potential risk in the conditions of the Slovak banking sector may result from the tendency of EU bank regulation to be more and more centralised.

Within the domestic financial market, the negative development on the world financial markets was especially felt in the performance of funds with a higher proportion of shares in their portfolios

The development on world financial markets from the beginning of the second half of 2007 effected an overall modest increase in risks within the domestic financial sector. The financial sector's exposure against the US sub-prime mortgage loans and structured products associated with these bad loans was negligible. In individual financial institutions which hold such instruments, there was a high uncertainty as to the credit quality, liquidity and valuation of these instruments. The overall increase in volatility and uncertainty on capital markets increased the equity risk. This was reflected in a decline particularly in the performance of growth and balanced funds of pension asset management companies, contribution growth funds of supplementary pension insurance companies and equity mutual funds. The overall fall in liquidity which is accompanying the current situation on developed financial markets, has not had a significant impact on the domestic financial sector. The banking sector, usually the most sensitive sector in terms of liquidity conditions, reported a sufficient quantity of domestic primary resources.

The sensitivity of households to a fall in their income increased as well as the sensitivity of the credit risk of banks to a fall in real estate prices

The high growth in loans to households continued in the domestic sector in 2007, effecting a rise in the exposure of banks to credit risk from these loans. Indebtedness in the household sector at the macro level was reaching low values in 2007 (Chart 45). On the other hand, the indebtedness of households which have been already provided a loan is increasing. The burden of repayments in 2007 was influenced especially by an increase in real estate prices. Households were forced to

finance the purchases of real estates using loans of a higher amount, which subsequently increased the amount of repayments. To moderate this situation, maturities of loans were extended and interest rates decreased, but the overall repayment burden of households continued to grow. Thus from the viewpoint of credit risk, households were becoming more sensitive especially to a fall in income. In relation to the growth in consumer prices, attributable to the global situation, the probability that tensions will increase in the budgets of indebted households is increasing. Banks loosened their standards as a result of, on the one hand, the increasing real estate prices and, on the other hand, their effort to maintain their market shares. In 2007, several banks recorded an increased amount of loans with an LTV over 100% (Chart 46) despite a fall in the overall dynamism of loosening standards. This makes the risk of loans to households more sensitive to changes in real estate prices, too. The growing LTV also brings with it an increase in the moral hazard of customers whose initial participation in the financing of their investments is lower. From the viewpoint of credit risk, in 2007 households continued to report in banks a high proportion of new housing loans with a short-term fixation of interest rates.

There was a notable increase in the banks' exposure against the real estate sector, but in the second half banks were tightening their standards for these loans

Banks recorded a high growth in loans in relation to the corporate sector as well, with a significant increase especially in exposure against the real estate sector. These loans comprised a substantial proportion of their total loans. The riskiness of loans for commercial real estates is directly related to the development of costs of rent as well as to the occupancy of real estates. Costs of rent were falling modestly in the second half of 2007. Occupancy is greatly dependent on the particular stages of the economic cycle. The second half saw changes in the attitude of banks to these loans. With the current crisis on the financial markets as one of the reasons, banks chose to pursue a rather prudential approach and tightened the standards for these loans. In enterprises there is a continuously high sensitivity to any movements in the exchange rate, since a major part of loans is denominated in foreign currencies.

Financial stability in Slovakia may be exposed to higher risks due to the shift in the European banking sector regulation towards increasing the competences of home regulators at the expense of host regulators, and also due to the fact that regulatory requirements focus more on bank groups rather than on their individual parts

The Slovak banking sector is almost entirely owned by foreign investors, while the domestic, mostly foreign-owned banks, which are of vital importance for the system, may represent a relatively small part of the worth of their parent groups. Národná banka Slovenska is responsible for the stability of the domestic financial system. If the regulatory competences of NBS in relation to organizational units of international bank groups operating in the Slovak financial system shrink or if the regulatory requirements (e.g. for capital and liquidity) are shifted to its parent company (its headquarters in another jurisdiction), NBS may become limited in its provision of necessary timely and adequate responses. This would create a conflict between the responsibility and the competences of NBS, increasing the risk for the domestic financial stability.

5 The Slovak Interbank Payment System – security and reliability in 2007

From the viewpoint of financial stability, the operation of the SIPS in 2006 may be evaluated as positive

The SIPS worked reliably and without disruptions in 2007. The payment system functions are being continuously developed so as to deliver a more efficient and operationally reliable system. Testing of emergency transmission of data is performed on a regular basis.

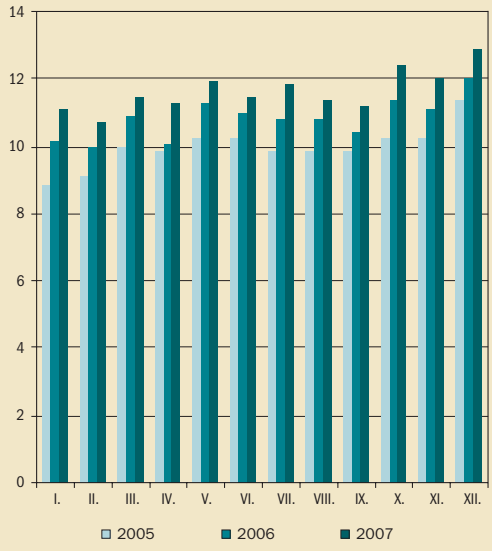
The number of direct participants was expanded in 2007 by the inclusion of two branches of foreign banks operating in Slovakia under the single banking licence

The year ended with NBS operating the Slovak Interbank Payment System for 32 participants, of which 30 were direct participants and 2 were third parties.

The new concept for the payment system in Slovakia is the outcome of a consensus between Národná banka Slovenska and the SIPS participants

In connection with the preparations for implementing the TARGET2 system[67], Národná banka Slovenska started to arrange the transformation of the current SIPS system to a new retail payment system, EUROSIPS. Upon Slovakia's entry into the euro area this system will be implemented as a domestic multilateral netting and settlement system for retail payments. The system will not be based on final settlement, because it will process low value and low priority customer payments (high value interbank payments will be redirected to the TARGET2 system). During each accounting day the payments accepted will be continuously processed on technical accounts and the final settlement will take place twice a day on RTGS accounts in the TARGET2 system. The transmission of data between the EUROSIPS and TARGET2 systems will take place in the form of data transmission in a defined structure via the SWIFT-Net network. The EUROSIPS payment system will be operated by Národná banka Slovenska.

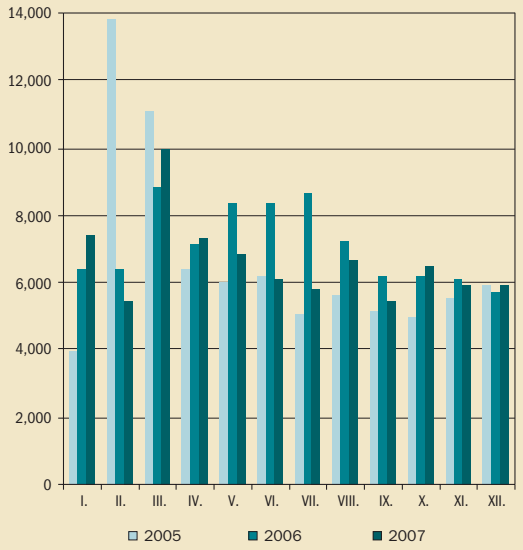
Chart 72 **Number of transactions processed in the SIPS (SKK million)**



Source: NBS.

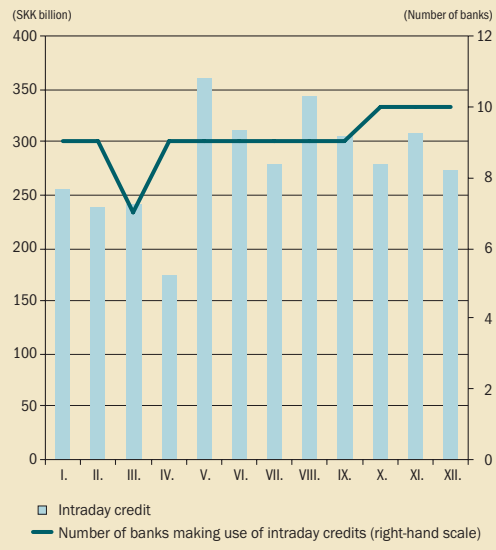
67 *TARGET2 is a real-time gross settlement system (RTGS) provided by central banks within the Eurosystem. The use of this system is compulsory for the central banks of all countries which adopted the euro as their currency. The TARGET2 system is based on a single shared technical platform which provides all users within the Eurosystem with a harmonized access to this system. In legal terms, however, TARGET2 comprises a set of systems. The system operated by Národná banka Slovenska will be referred to as TARGET2-SK.*

Chart 73 **Value of transactions processed in the SIPS (SKK billion)**



Source: NBS.

Chart 74 **Intraday credit in 2007 (SKK billion)**



Source: NBS.

The number of transactions made through SIPS increased by 7.5% in comparison with 2006

Altogether, the SIPS processed almost 140 million transactions in 2007, thereby maintaining the stable rising trend of recent years (Chart 72).

In contrast to the previous years, the value of processed transactions fell in 2007

The total value of transactions processed in the SIPS was less than SKK 79,545 billion, falling by 7.1% in comparison with 2006 (Chart 73). This decrease may have been effected to a great degree by a more stable development of the domestic currency.[68]

The considerable dynamism of the number and value of priority payments in recent years was superseded by a period of consolidation

The number of priority payments in 2007 fell by no less than 20%. The total number of processed and settled priority payments reached less than 275 thousand, compared to more than 320 thousand in the previous year. However, their share of the total number of transactions did not change substantially – it constitutes a little less than 0.2%, compared to 0.25% in 2006. The value of priority payments also declined, though by less than three percent (to SKK 53.959 billion) which,[69] however, is a significant change in contrast with the previous year, considering that the value of priority payments grew almost threefold in 2004-2006.

The smooth functioning of the payment system is supported by the provision of intraday credit

In 2007 intraday credit in the total amount of more than SKK 3,442 billion was provided to participants upon their request (Chart 74). The amount of provided intraday credit to participants is monitored on a daily basis. Národná banka Slovenska was providing intraday credit on a weekly basis in an average amount of SKK 66.092 billion.[70] Národná

68 *For instance, the significant increase in the value of payments in February 2005 was directly related to the conduct of NBS sterilisation operations.*

69 *The value settled by priority payments constituted 68% of the total value of all processed transactions (compared to 65% in 2006).*

70 *The amount of intraday credit represents the value of securities (less deduction) that NBS accepted from participants as collateral for the credit. This is the limit up to which participants may draw the intraday credit. The actual drawing of the credit is not at present subject to statistical tracking.*

banka Slovenska provides intraday credit to those SIPS participants that maintain minimum reserve requirements. It is extended as a facility to draw funds from a monetary reserve account, up to the stipulated overdraft limit. Intraday credit is payable only within a single business day and must be fully secured by collateral, i.e. securities in a sufficient quantity and the relevant value, which are registered in the Central Register of Short-Term Securities maintained by NBS.

Among the most used instruments of the non-cash payment system are electronic payment instruments (mainly bank payment cards and electronic banking applications).

In 2007 the number of issued payment cards increased by 6% to almost 4.75 million, of which debit cards constituted almost 76% and credit cards 24%. As at 31 December 2007 bank customers in the Slovak Republic were able to use a network of 2,166 ATMs and 25,826 EFT POS payment terminals.

NBS cooperates closely with international institutions involved in the area of the payment systems

NBS is providing cooperation in the drafting of European legislation,[71] in the collection of statistical data for compilation of the Blue Book, and in preparations for the SEPA[72] and TARGET2.

Credit risk in the payment system is small. Requirements regarding the system's operational reliability are increasing

The Slovak Interbank Payment System features a high degree of reliability and a low credit risk for both its operator (NBS) and participants. Credit risk is eliminated by the fact that a payment will only be made if the participant has sufficient funds on account with NBS or is able to cover it by drawing intraday credit secured by collateral. The increase in both the number and average value of priority payments and the further automating of payment system operations is putting added demands on the operational reliability of the payment system, on its software and hardware specifications, and on its organization.

71 *In 2007, the Directive of the European Parliament and of the Council 2007/64/EC of 13 November 2007 on payment services in the internal market amending Directives 97/7/EC, 2002/65/EC, 2005/60/EC a 2006/48/EC and repealing Directive 97/5/EC was adopted.*

72 *The Single Euro Payments Area, whose purpose is to ensure that all payments made in the euro area (and later on in the whole of the EU + Iceland, Norway, Liechtenstein and Switzerland) are equal to domestic payments in regard to their speed, security and costs. The introduction of the SEPA will involve mainly a transition from national payment instruments – credit transfers, direct debits and payment cards – to European ones. 28 January 2008 was set as the commencement date for making payments and 1 November 2009 for launching direct debits.*

C Annexes

1 Policies to support the sustainability of the convergence process

Is Slovakia in danger of being subject to the same development as the countries on the euro area periphery?

The aim behind the introduction of a single currency was to bring advantages to the members of the economic and monetary union, particularly those associated with price stability and economic integration. The objective to provide member countries[73] with price stability can be said to have been met, especially in the case of countries with historically higher inflation rates and less credible monetary policies. The adoption of the euro was associated with a period of price stability: thanks to the credibility of the common monetary policy, a generally lower inflation rate and inflation expectations were recorded.

However, benefits from economic integration became apparent in but a few ways. The integration through trade in goods improved, but the trade in services integrated in a lesser extent. Financial markets integrated considerably, bringing benefits mainly to corporate customers, while retail and mortgage banking were integrated to a lesser extent. The synchronisation of the economic cycle in the euro area countries increased, but divergences between the economic levels of particular countries (regions) still persist.

Some of these divergences arose due to the process of catching up in countries whose economic strength at the time of entering into the euro area was below the euro area average. Whereas the growth in these countries was quite dynamic during the period of nominal convergence[74] prior to the creation of the euro area, their growth potential exhausted itself relatively quickly upon the actual entering into the euro area and several of them are losing parts of their acquired (relative) purchasing power. In respect to Slovakia's ambition to enter the euro area and its nature of a catching-up country, we shall focus on the convergence scenarios of catching-up countries which are euro area members (Portugal, Spain, Greece and partly Ireland[75]), on the inherent instabilities and also on possible corrections that may be effected by the countries' economic policy.

The direction of macroeconomic development during the years prior to the euro area and the situation during the first years afterwards may be summarised,[76] in the following manner:

1. In the period before the euro area had been created (1992-1998), the average growth rate of countries was lower than afterwards (1999-2005). The growth rate accelerated especially in the case of Greece, Spain, Finland and Luxemburg. To the contrary, Germany, Italy, The Netherlands and Portugal recorded a decline in growth in the period from 1995 to 2005.

73 *In the context of this report, euro area countries are to be understood as those 11 countries which formed the monetary union in 2001.*
74 *The period 1992-1998 was considered.*
75 *Ireland, due to its dynamic growth, exceeded the euro area purchasing price parity average, but its starting position was that of a catching-up country.*
76 *European Commission (2006) Adjustment dynamics in the euro area – Experiences and challenges, European Economy 6/2006. European Commission (2008) EMU: successes and challenges after 10 years of Economic and Monetary Union, European Economy 2/2008.*

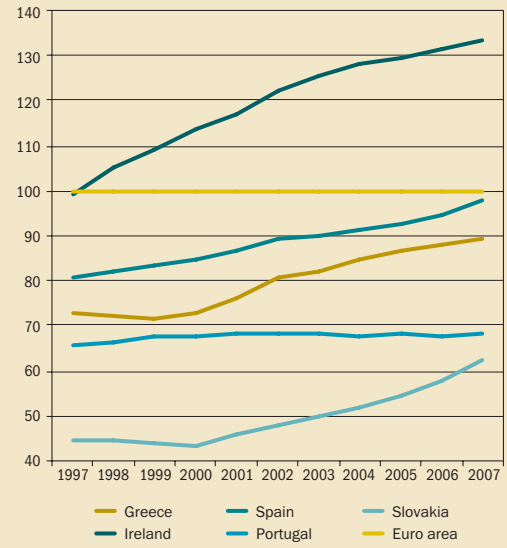
The synchronisation of economic development – evaluated on the basis of a standard deviation of the year-on-year quarterly growth rate of euro area countries – started to increase in the second half of the 90's.

2. From the viewpoint of growth structure the contribution of domestic demand increased after the creation of the euro area, while the contribution of net exports underwent a substantial decline (with the exception of Germany which recorded growth due to foreign demand and a significant fall in the contribution of domestic demand). Both consumer and investment demand accelerated after the creation of the euro area, especially in Greece, Spain and Finland. The development of investments was related to the course of the business cycle – they were growing fast until 2001, then fell in connection with the global slowdown in that period, and have been growing again since 2004. Ireland, Greece and Spain recorded the highest relative investment increases and these investments had the highest share of the GDP.

3. Development on the labour market after the euro area creation was characterised by a more significant growth in employment rate than before it, with the exception of the Netherlands and Greece which recorded a slowdown. At the same time, the nominal growth rate of wages slowed.[77] It maintained its level of 2%, virtually meaning that real wages were not growing at all. This slowdown was reflected in the growth in the ratio of profit to added value (especially in Austria, Germany and Spain).

4. The growth rate of labour productivity underwent a slowdown in most countries on average, except Greece, Netherlands and Luxemburg. Austria and Germany were the only countries within the euro area whose overall competitiveness, as measured by the development of nominal unit labour costs, have been increasing since the introduction of the common currency. In Ireland, Portugal and the Netherlands it declined the most.

Chart 75 **GDP per capita in the purchasing power standard (euro area = 100)**



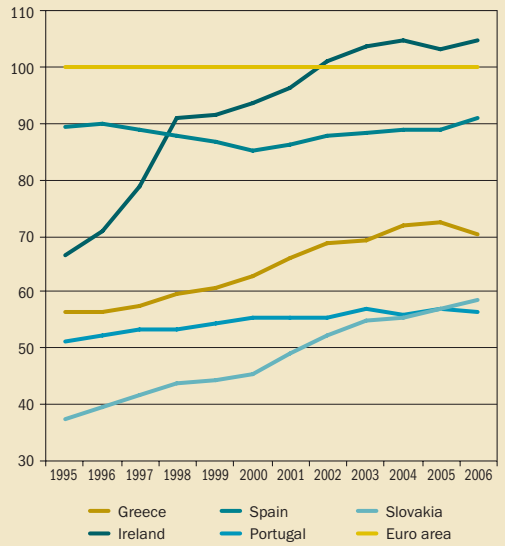
Source: Eurostat.

5. Inflation was slowing during the period of nominal convergence. In most countries it converged down to the level of 1% and after the euro area creation it oscillated around 2%. The inflation differential between countries persisted – they were above or below the average for a longer period of time. There were greater differences in the price level of services than in the price level of goods.

6. In the 90's, countries in their effort to adopt the euro were lowering the public indebtedness towards the limits stipulated by the Maastricht criteria. After 1999 the trend of fiscal consolidation slowed or stopped. This change occurred in an environment of an economic slowdown which placed an extra burden on the euro area countries' public finances. Several countries approached or even exceeded the 3% limit. The Stability and Growth Pact was revised in 2005 in order to provide greater flexibility for the assessment of medium-term budget plans. The slowdown in consolidation may be explained by the fact that approximately one half of the reduction in costs in 1995-1999 was achieved due to a decline in financial costs associated

77 *Apart from France, Luxemburg, Netherlands, Finland and Ireland.*

Chart 76 **Labour productivity per hour worked (euro area = 100)**



Source: Eurostat.

with interest payments for the government debt[78]. The public debt to GDP ratio remained virtually unchanged at the aggregate level. Countries were not creating reserves for "bad days".

7. Particularly in the catching-up countries the integration of financial markets granted households a greater access to loans, which was associated with a decline in interest rates. Credit resources were then stimulating investments on the real estate market and encouraging a boom on the asset market.

The progress of the convergence process

Developments in the converging countries had several common features. Converging economies are generally characterised by a high return on capital, which results from a relatively low capital-labour ratio, and this makes them an attractive destination for the flows of foreign investments. Households have a reason to expect a growth in their future income and subsequently, if they have access to credit resources, are motivated to increase their current consumption through indebtedness[79]. In an ideal case, both investors and households are able to correctly assess investment risks as well as future income. A sufficient risk premium prevents the development from becoming unsustainable and maintains capital flows as well as the growth in loans on a balanced trajectory. The nature of current account financing is also stable, best if in the form of foreign direct investments. However, this ideal scenario may not always come true. If economic agents start to have overly optimistic expectations and if they fail to correctly assess the current situation and the prospective development, underestimation of investment risks and overestimation of future income ensue. In this case the risk premium is of a procyclic nature. The fast growth in domestic loans may be allocated incorrectly – it does not increase production capacities in the economy but acts towards an increase in demand and/or is directed into the non-tradable sector where it effects an unbalanced growth in asset prices (creating a bubble on the real estate market, or a bubble of asset prices in general). High domestic demand and a weakening of the performance of the export sector act together as an incentive for increases in the current account deficit, which is then often and increasingly financed by less stable forms of capital (such as volatile short-term non-hedged capital and debt resources). If the self-corrective mechanism fails or appears too late (households do not respond to their excessive indebtedness by limiting their consumption, the financial sector does not respond by limiting the accessibility of resources, investors do not postpone the realisation of higher-risk projects), the economy may become overheated. The accumulated imbalances may result in a crisis if a domestic or foreign shock is triggered. If the respective country has a flexible exchange rate regime, these imbalances resolve themselves by a sharp weakening of the exchange rate and a possible subsequent phase of a falling output. If, on the other hand, it has any of the variants of fixed exchange rate regimes, the adap-

78 *Fats, A. And Mihiv, I. (2003) On Constraining Fiscal Policy Discretion in EMU, ISEAD and CEPR.*
79 *This behaviour is most symptomatic for European converging economies. In Asian converging economies, due to their heavily under-dimensioned social systems, households tend to prefer creation of precautionary savings to consumption.*

tation is accomplished through relative domestic prices and wages. The speed of shock absorption depends on the flexibility of real economy. If there are rigidities in the movements of domestic prices and wages, a long-term slowdown in growth may follow, breaking off or even halting the convergence process.

The financial sector may facilitate the emergence of these imbalances in several ways[80]:

1. It may increase the volatility of economy by collateralising a loan (financial accelerator). Financial intermediaries usually require the loan to be collateralised. Growth in asset prices and in the value of collaterals increases the applicants' qualification for being provided a loan. However, the growth in asset prices may be the result of an increased demand for these assets, owing to the willingness of financial intermediaries to provide loans. The backward effect of lending and of the rise in the value of collaterals increases the volatility of asset prices.

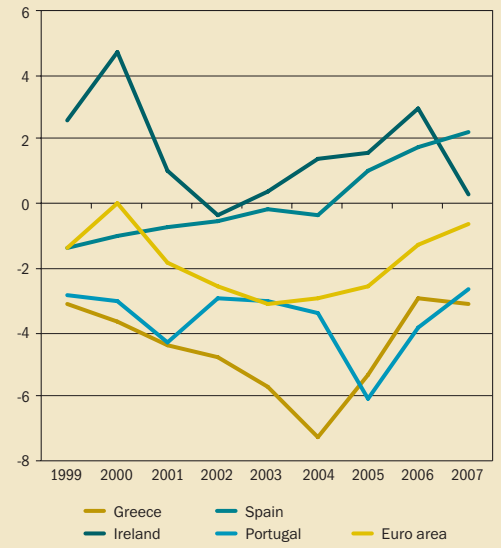
2. The competition among financial intermediaries may lead to a loosening of credit standards. Both households and companies thus assume an excessively high level of indebtedness under excessively risky conditions, which may cause them problems with paying their obligations.

3. By lending to entities with extremely optimistic expectations as to the growth in their income.

4. By contagion from foreign banks. The exposure to common-lender contagion risk arises if several foreign banks with similar activities operate on the market.

Developments after the entry into the euro area indicate that the convergence process in some catching-up euro area countries has acquired some of the above features of an unbalanced growth. The joint effect of the 90's nominal convergence process, extended access to resources through the use of EU funds, and the liberalization and a subsequent integration of financial sectors in EU

Chart 77 **Balance of public finances (% GDP)**



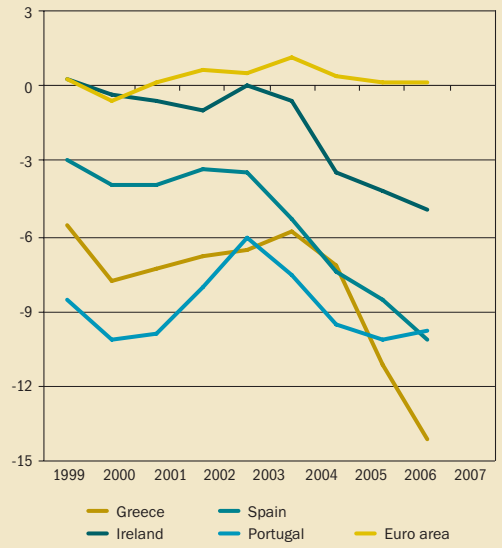
Source: OECD.

countries, was playing an important role here. The lowering of nominal interest rates, aimed at reaching the level of core EU countries, effected a very low level of real interest rates as the inflation rate remained relatively high. This created conditions for a credit expansion owing to low costs of indebtedness, willingness of the financial sector to provide loans, and the economic entities' expectations of a higher income as the outlook for euro area membership was becoming clearer and clearer. Investment stimuli which were directed mainly into the infrastructure and which were financed from EU funds induced growth in the non-tradable sector. On one hand, this advancement of domestic activity added to a decrease in the unemployment rate, but at the same time it accelerated the growth in wages which had an adverse impact on the competitiveness of the tradable sector. This growth in the non-tradable sector and decline in the performance of the export sector resulted in an increased current account deficit.

In the case of Portugal and partly also Spain and Greece, the convergence process assumed a form that seems to be unsustainable in the long-term. Development in Ireland has so far been the smoothest.

80 *Bems, R. and Schellekens, P. (2007) Finance and Convergence: What s Ahead for Emerging Europe? IMF, WP/07/244.*

Chart 78 **Current account balance**
(% GDP)



Source: OECD.

In **Portugal,** economic growth was based on domestic demand without a corresponding growth in production capabilities. The inflow of capital was concentrated in the non-tradable sector and encouraged an increase in domestic demand. The tradable sector, mainly comprising sectors exposed to the competition of Asian economies, was losing its competitiveness due to the growth in unit labour costs as well as the liberalization of textile and shoe trade. Excessive optimism (on the basis of available information) in the area of fiscal policy led to a relatively slow consolidation[81]. Slow and insufficient consolidation of public finances together with a decline in the savings of households and corporations led to a widening of current account deficit.

When the boom created by domestic demand was exhausted in 2001, the economy found itself in a position when there was no longer a possibility to respond to the situation through the exchange rate channel, and in the area of public finances there was no room for a fiscal stimulus.

Spain faced a similar situation, however, due to a better position of the export sector and a more prudential fiscal policy, the imbalances did not accumulate to such a great extent, although the country's current account deficit remains high and symptoms of an emerging bubble are developing in the real estate sector.

Greece was growing fast from mid-90's onwards and maintained its growth even after 2001 when several euro area countries were affected by a global slowdown. The country also won a significant growth impetus from credit expansion in the nominal convergence period. Another growth stimulus was related to investment activities associated with the coming Olympic Games 2004 and also to the drawing of EU cohesion and structural funds, which constituted a boom in the non-tradable sector at the expense of the tradable sector's competitiveness. The high increase in domestic demand was reflected in a high and growing current account deficit. Even after entering the euro area, the inflation rate remained at a higher level than in other member countries. Attempts to remove structural rigidities on the labour market, reflected in a high unemployment rate and a low mobility of labour, failed. The fiscal policy is again being consolidated following a period of growing expansion, but the country still has a high level of indebtedness.

Ireland may be used as a counter-example of sustainability of the convergence process. However, the Irish "convergence miracle" is somewhat atypical due to its being attributable to an exceptionally high activity of foreign direct investments, due to its historical interconnections with English-speaking countries, and due to a high flexibility of its labour market effected by the migration of labour force into the country. A high inflow of FDI into the industrial production sector contributed to a dynamical growth in the tradable sector and to export. A moderate growth in wages in comparison with the total factor productivity was one of the reasons behind an increase in the export sector's profitability and the accumulation of savings of non-financial corporations. Stability of the domestic environment was also assisted by a disciplined fiscal policy which managed to effect an increase in savings in the government sector. The investment

81 *Abreu, O. (2006) Portugal's boom and bust: lessons for euro newcomers, European Commission, Ecfin Country Focus, 2006/16.*

boom had no negative effects on the current account balance which, to the contrary, ended with a surplus. However, Ireland's dynamical growth is partly attributable to the declaration of profits of foreign companies in the country, motivated by low tax rates. This increases the reported output in the country's territory – the GDP as well as the increase in labour productivity.

Policies conducive to the adaptability to shocks in the monetary union

Euro area membership means that an economy functions in the common monetary area with a single monetary policy. The single monetary policy allows to create a low-inflation environment and to maintain stable inflation expectations. However, it may not be able to respond to the specific needs of a particular country if its economy responds to a possible shock from an external environment asymmetrically to other euro area members or if the shock originates in the domestic environment. In the case of an asymmetrical shock, other policies and markets have to play the role of a stabilizer – the fiscal policy, the structural policy (particularly labour market and the wage policy) and the financial market – which by virtue of their flexibility will help to restore balance.

Fiscal policy is an important component in the elimination of cyclic fluctuations, through the actions of automatic stabilizers (automatic changes in receipts and expenditures in response to changes in the output and in the employment rate). The efficiency of automatic stabilizers is largely dependent on the size of the government sector, progressiveness of the tax system, composition of income (the proportion of cyclically sensitive tax bases), and the scope of the social security system. If automatic stabilizers are insufficient, the government may reinforce the correction by active policies (discretionary interventions). However, there are practical limits to the speed and scope in which fiscal policy is able to respond to shocks. On the one hand it is limited by obligations and programmes lasting for several years and on the other hand it is subject to a political consensus and thus not very flexible when it comes to responding to unexpected events. The main task of fiscal policy[82] in regard to macroeconomic stabilization is to create space for an active functioning of the flexibility of prices and wages by consolidating public finances.

Structural policies aim at supporting the resiliency and stability of economy. Reforms in the production factors (labour and capital) and products market are desirable not only within the individual countries, but it is also necessary to remove the limitations of their free movement within the entire monetary union. On the labour market it is necessary to decrease imbalances such as a high unemployment rate and a low employment rate. The tax system and the social security system must be set so that people are motivated to work. Apart from their social dimension, the labour legislation and wage negotiations are supposed to sustain efficiency and flexibility of the labour market. In order to maintain growth in productivity it is necessary to uphold the country's innovative potential by supporting research and development and by making the educational system effective.

The integration of national financial markets may help eliminate the effects of shocks originating in the domestic environment. The emergence of a crisis in financial markets exposed some negative aspects of an intensified competition within the financial sector – a decrease in the profit margin was provoking an aggressive search for yield, transfer of risks to clients and a subsequent greater fragility of the financial system, increasing the probability of negative impacts on real economy. This may be prevented by pursuing a **prudential supervision over financial market entities**, whose aim is to limit an incorrect allocation of credit resources caused by imperfections in the market (moral hazard, asymmetrical information). The risks associated with excessive lending (indebting) as well as the concentration of these risks are assessed by an independent regulator. It may prevent the occurrence of boom–bust cycles to a certain degree, since the financial sector tends to behave procyclically. However, both the market and the management of financial companies should bear the consequences of their short-sighted behaviour.

82 *Its other tasks apart from macroeconomic stabilization include the redistribution and effective allocation of funds.*

What are the possible solutions to a situation when the convergence trajectory becomes unsustainable after a country's entry into the euro area?

The theoretical framework is well-known but to search for particular solutions in the circumstances of a particular country may be difficult. In his 2005 publication[83], O. Blanchard gives solutions to the situation which occurred in Portugal, seeing the loss of growth in productivity as the greatest problem in this country. With respect to the condition of economy, the loss of competitiveness resulting from pressures on growth in wages during the boom period does not allow to diminish the high current account deficit.

If no corrections take place, the most probable scenario is that of a competitive disinflation – a relatively long period of high unemployment lasting until competitiveness is restored (a low growth in nominal wages unless there is a fall in relative unit labour costs), the current account deficit decreased and domestic demand revived.

Blanchard sees the response of economic policy as working in two directions:

- achieving a sustainable growth in labour productivity so that it is no more than partially reflected in the growth of wages, until the unemployment rate and current account deficit are reduced.
- lower growth in nominal wages, which might help prevent the loss of competitiveness at a price of a high unemployment rate. With respect to a relatively low rate of wage inflation in both the euro area and Portugal, this strategy would require a significant decline in nominal wages. This, however, is not practically executable in regard to the current Portuguese legislation.

Fiscal policy could be theoretically used to increase the aggregate demand and reduce unemployment, however, it is not able to tackle both issues simultaneously – competitiveness and unemployment. If it were to be used, the price for it would be that the current account deficit would increase and the improvement in competitiveness would be slowed down or even come to a halt due to the fall in the unemployment rate. Hence instead solving the situation, this would merely postpone the necessary corrections until a later date.

Another hypothetical solution – through the movement of labour, by economic migration – is still limited in the euro area among the individual countries and, considering the size of the existing imbalances, this would have to be a very large-scale movement if it were to correct this particular situation.

To provide a possible solution, Blanchard gives the example of Germany. After re-uniting in early 90's, the subsequent economic boom led to a strong appreciation of currency and a decline in competitiveness. After a relatively long period during which growth in nominal wages was slower than growth in labour productivity, a slow but lasting rise in competitiveness was achieved. However, this result came at a price: the growth of the German economy was for a longer period of time lower than the euro area average, and there was but a slow and moderate revival of domestic consumer and investment demand. A decline in nominal wages may be difficult to push through but its effect is similar to that of depreciation of currency.

What is the condition of Slovak economy and what is applicable to Slovakia?

What, then, are the most serious pitfalls in the convergence process after entering the monetary union which Slovakia should try to avoid in view of the experience of the current euro area members?[84]

1. During a period when demand is increasing in connection with credit expansion, the budget policy has to be sufficiently restrictive.

2. The environment of a high growth creates the risk of an inappropriate assessment of the growth of economic potential and with it also a procyclical effect of the fiscal policy (only detected

83 *Blanchard, O. (2006) Adjustment within the euro. The difficult case of Portugal.*
84 *Abreu, O. (2006) Portugal's boom and bust: lessons for euro newcomers, European Commission, Ecfin Country Focus, 2006/16.*

afterwards).[85] It needs to be remembered that budget income during a boom period is largely attributable to the contribution of consumption and income from the growth in asset prices.

3. Structural reforms need to be supported in "the good times" so that the private sector is able to react more flexibly to changes in demand, otherwise the effects of a strong domestic demand may "leak" abroad through imports.

4. The mechanism of creation of wages should be based on realistic expectations as to the development of future income, in accord with productivity.

5. An open financial system may complicate the assessment of adequacy and proper allocation of financial flows but a strict and prudential supervision may assist in eliminating imbalances.

However, there are several differences which might help make the convergence stable:

1. Unlike in "cohesion" countries, the inflow of DFI in Slovakia was concentrated in the tradable sector, in sectors with a medium or high added value, creating a base for a better competitive position of the Slovak export sector.

2. The proportions of development of productivity and wages can be said to be well maintained. With respect to a high proportion of profits in value added, enterprises have a sufficient space for the creation of savings and investments.

3. In Slovakia, especially in recent periods, it has also been possible to observe sector changes which led to the increase in non-tradable sector in comparison with the tradable sector. Similarly, real estate loans to households account for a larger part of total loans than consumer loans. However, with respect to the dynamic growth in lending to the non-tradable sector in the euro area countries and in several new member states, the growth rate in Slovakia is relatively low.

Fiscal policy plays in important role in creating signals and maintaining confidence for a proper direction of economy.[86] The basic rules should include: the prevention of a procyclic effect on the economy, a reasonable assessment of income during the boom period, and maintaining the confidence level of investors – by upholding conformity with the presented consolidation strategy, so that enough room is created for the absorption of possible shocks.

The country is still in need of structural reforms. The unemployment rate continues to be at a high level in Slovakia. It has declined in recent years but there is still a high level of structural unemployment (an exceptionally high proportion of long-term unemployed), which indicates that flexibility in the labour market must be improved. The low share of public budget that is allotted for science and development, together with a slow education reform do not create a base for an expansion of the technological base. A modernization programme[87], focusing on the areas of education, research, development, innovations, improving the quality of entrepreneurial environment and employment, is aiming to start modernizing the key areas of public policy. The proposed measures aim to improve social mobility and the adaptability of economy to changes in the absence of own currency. Since it is financially demanding to put the proposed measures into practice,[88] it is necessary to concentrate the disposable financial resources on a precisely specified hierarchy of objectives. An effort to simultaneously pursue a great number of objectives may lead to a weakening of the potential effects of support by public finances.

For Slovakia as a small open economy, it is crucial to maintain growth in productivity and competitiveness of the export sector.

85 *The correctness of decisions as to the nature of fiscal policy depends on the estimates of a real time output gap. However, economic data often tend to be additionally revisited. The expansive nature of fiscal policy may thus stem not only from political decisions but also from overly optimistic estimates of the economy's cyclic position. These issues are addressed for instance in a work by Orphanides and van Norden (Orphanides, A. and van Norden, S. (2002) The unreliability of output – gap estimates in real time, The Review of Economics and Statistics 84 (4)).*

86 *Steinlein, S. (2005) Will Slovak Convergence be Steep and Stable? European Commission, Ecofin Country Focus, 2005/12.*

87 *MF SR (2008) Modernizačný program Slovensko 21.*

88 *The estimated costs of carrying out short-term measures amount to SKK 17.7 billion in the course of three years.*

2 Flat and house prices in Slovakia – some observations on the developments and on a regional cross-section

Real estate prices in Slovakia were growing dynamically after 2001[89]. The main factors behind this growth were an increasing demand and limited supply. In the process, the increased demand was based on a fast growth in income in the economy, an improving availability and increasing volume of mortgage and building loans. It was supported by the development of interest rates and provisions of the flat policy, and modified (usually instigated) especially by the expected price development[90]. Another important factor was an increase in the number of residents between 25 and 34 years of age[91].

Another important common factor in the development on the real estate market was a favourable economic development supported by the advancing transformation of economy and by several reforms. Restructuring of banks was of great importance. These changes effected an acceleration of the process of catching-up with the economic and price levels of developed EU countries (in terms of real convergence) both generally and specifically, on the residential real estate market.

Residential property prices (flats and houses, SKK/m2) have increased since 2002 to 2.5-times the level as in 2002[92]. Their growth was based on an increase in the economic level. It is defined by the growth of, for example, (nominal) GDP per resident expressed in the parity of purchasing price.

Regional disparities in development

The Slovak economy was characterised by great regional differences during the transformation period. These large differences still persist and have widened in some areas of economy[93]. In other areas they are gradually evening out as development impulses are spreading into the various regions. For instance, the inflow of foreign direct investments first accelerated the economic performance and the levels of economy and prices in some markets in Bratislava and its vicinity. Later on there was a fast growth in some economic centres in other regions, too. With the conditions for economic activity gradually developing, investors were becoming more and more interested in investing outside the economic development centres, too. However, economic activity is still polarised. In regard to this it may be said that the development in Slovakia does not differ significantly from developments in other countries that underwent the process of

89 *NBS regularly evaluates the development of residential property prices in association with the National Association of Real Estate Agencies – NARKS. More information available at: www.nbs.sk – Residential property prices. Also in: Cár, M.: Development of residential property prices and rent prices in the Slovak Republic in the 1st quarter of 2008, Biatec No. 6/2008.*

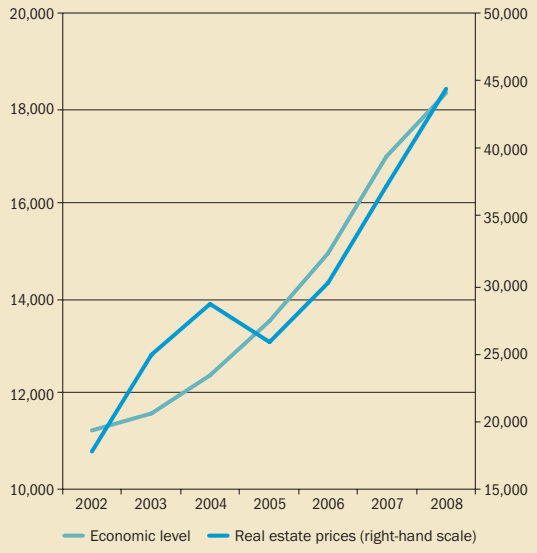
90 *The effects of various factors on residential property prices in the Slovak environment are assessed in the report: Beka, J.: Real estate prices, credit growth and implications for monetary policy, Biatec No. 12/2007.*

91 *This age group represents the "demographic potential" for growth in the housing demand.*

92 *1Q2008/Y2002. This relates to average prices per m2 of the area of flats and houses. The methodological problems in measuring residential property prices are dealt with in the publication: Cár, M.: Monitoring Residential Property Prices in Slovakia, Biatec No.1/2006, also in (www.nbs.sk).*

93 *The statistical GDP-based evaluation has some well-known shortcomings, especially in terms of matching particular economic activities with particular regions, because the existing data often do not enable to match a created product with the region in which the economic activity that created the product was actually taking place. This causes that the created product is matched on the basis of the company's registered office (headquarters), resulting in an overestimation of data for the created product in Bratislava and underestimation of data for other regions.*

Chart 79 **Economic level in the Slovak Republic (nominal GDP per resident in PPS) and residential property prices in Slovakia (Sk/m²)**



Source: NARKS, NBS, Statistical Office of the Slovak Republic.
Note: Data for the years 2007 and 2008 are estimates by Eurostat.

international integration and in which the catching-up process was carried out without any substantial interventions by the government[94].

The above processes were also reflected in the development of residential property prices in the regions (territorial units) of Slovakia. The process of real convergence, catching up with the economic level and with residential property prices differed significantly between regions, as shown in Charts 80 and 81, because the overall favourable economic development did not manifest uniformly in the Slovak regions and their real estate markets.

The process of catching up with the price level and its obstacles on the residential real estate market

The catching-up process has certain regularities. One of them is that there is a connection between the achieved economic output and the price level in the country – countries with a relatively higher

Chart 80 **Residential property prices by regions of Slovakia (Sk/m²)**

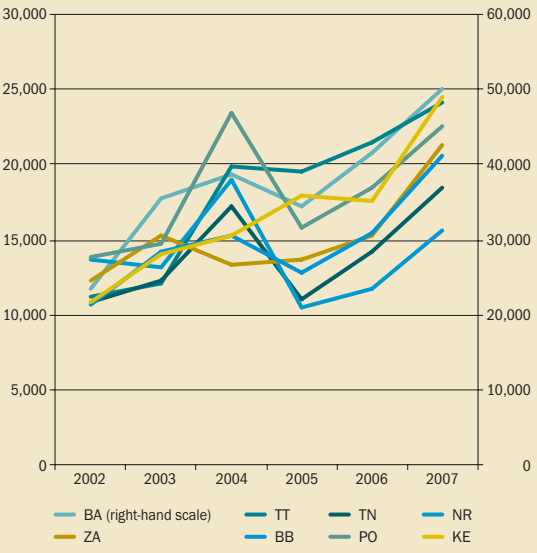


Chart 81 **Economic level in the regions of Slovakia (nominal GDP per resident in PPS)**

Source: NARKS, NBS. *Source: Statistical Office of the Slovak Republic.*
Note: Due to considerable differences between the economic level and the level of residential property prices in Bratislava and those in other regions, a chart with two vertical scales was chosen – the right-hand scale for Bratislava and the left-hand scale for other regions.
BA – Bratislava region, TT – Trnava region, TN – Trenčín region, NR – Nitra region, ZA – Žilina region, BB – Banská Bystrica region, PO – Prešov region, KE – Košice region

94 *The resources for active measures of regional policies used to be limited in the past. We assume that the extensive resources of structural funds, the development of traffic infrastructure in the form of PPP projects as well as the regional focus of investment support may change the situation to a certain degree.*

economic level (usually) have higher relative prices. This regularity is manifesting in the real convergence of Slovak real economy, too.[95]

Detailed analyses show that price adaptation and correction of price relations are carried out not only on an aggregate level but also tend to put through themselves at the level of categories of goods and services as well as in particular goods. As shown by some studies, the tendency to bring prices closer to the European levels also put through to the residential real estate market.[96] Adaptation of price levels to specific markets is usually put through with a greater variability resulting from the differences between specific conditions in the respective markets. The possible occurrence of adaptation of price levels and price relations as well as its rate depends on whether or not it is subject to institutional or system limitations.

The process of adaptation of residential property prices in Slovakia (their harmonization with the economic level) used to be (until 2000) hampered by several matters:

1. The degree of financial sector development. In contrast with advanced foreign countries, the Slovak financial (banking) sector in the past did not permit purchasing residential real estates on a long-term credit to a comparable degree. It was only when banks were privatized as a result of the arrival of foreign investors that the offer of long-term financing of purchases of residential real estates started to develop massively (especially mortgage financing was developing parallel to the existing building savings),

2. High interest rates. On one hand, low household indebtedness rate – in absolute as well as relative terms compared to abroad – was improving the chances of households to become eligible for being provided a loan and to make a purchase or construction of real estates at the expense of future consumption. However, the real economic availability of long-term financing of real estate purchases on credit is associated with a decline in interest rates so as to ensure that debt repayments (including interest) match the income level of households. This decline was gradually achieved in Slovakia in relation to its progression towards the euro area. However, it should be added that a large number of households had, and still has, low income, which disqualifies them from being provided a housing loan.[97]

3. Low level of development of the real estate market. It was only the gradual privatization of the housing fund and liberalization of rent[98] which created basic system and institutional foundations for the development of the real estate market,

4. Non-preparedness of areas for flat construction. No sooner than the territorial decentralization took place was there an improvement in the conditions for development and availability of estates. Some problems in this area persist even to this day and are an important factor in the limited supply of residential real estates.[99]

Relationship between the economic level and residential property prices in Slovakia

Several of the above obstacles have been removed or their impact has declined after the economy was stabilized and banking sector restructured in 2000. As a result, a long-term relationship between the economic and price levels have been

95 *Šuster, M. et. al.: The effects of euro adoption on the Slovak economy. The NBS Research Department, March 2006, p 57. Document also available at www.nbs.sk.*

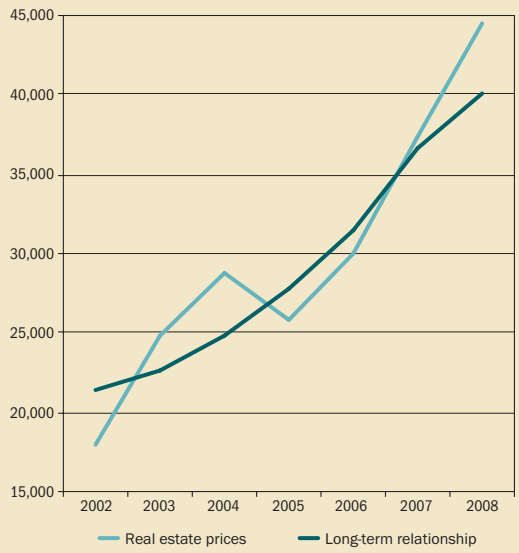
96 *This was confirmed, among other sources, by a real estate market study by the UniCredit Group: Residential Real Estate in CEE. Supply Shortage: Clear Driver for Sustainability, May 2008, which analyses the development of real estate prices in the Central and Eastern European region.*

97 *The GfK agency has found that no more than one tenth of households were able to create savings amounting to more than SKK 5,000 per month. In our opinion it was only when a household was able to create this amount of monthly savings, with respect to the then prices of residential real estates, that it was qualified for being provided a housing loan.*

98 *The process of liberalization of the amount of rent is still ongoing. For example, there are still some restrictions on the amount of rent in restituted flats and dwelling houses.*

99 *Another significant limiting factor is that ownership of land is often unclear and/or split into many parts.*

Chart 82 **Economic level and its relation to residential property prices in Slovakia**



Source: NARKS, NBS, Statistical Office of the Slovak Republic, Eurostat.
Note: Data for the year 2008 refer to the 1st quarter of 2008.

assumed, associated with a fast growth in prices in the residential real estate market. The development of residential property prices after 2002 was characterised by two periods during which the growth rate of prices accelerated. Chart 82 shows this development and compares it to the development which corresponds to the "long-term" relationship between residential property prices and the economic level.

The application of a simple model on the above data shows that after the initial acceleration from a low price level in 2002, which did not correspond to the development of economy, in 2004 (the year of Slovakia's entry into the EU) residential property prices reached a level which represented an "overshoot" within the long-term relationship. The correction in 2005 (below the assumed long-term trend) and fast growth of economy in 2006 and 2007 created a foundation for a further growth in real estate prices. At the same time it seems that the growth as at the end of 2007 and at the beginning of 2008 (the most recent data are for the 1st quarter of 2008), i.e. in the period preceding the entry into the euro area, can be considered another "overshoot" of the level ensuing from the long-term relationship and will probably necessitate a correction of the price development during 2008 or later.

Note 3: The model assumes a dependence of the nominal price level in EUR/m^2 on nominal GDP per resident in the purchasing price parity. Such an expression of the price level corresponds to the process of catching up with the price level rather than to a process of approximating price relations. It needs to be said, however, that we are not able to identify the "softening" in the catching-up process with sufficient accuracy, due to a fast growth rate of real estates, methodological problems in their measuring and an insufficient number of observations. The above assessment of the market's position is based on a simplified assumption that elasticity equals one[100].

Economic level and the level of real estate prices – regional differences and fluctuations in time

An evaluation of regional situation in flat prices is made difficult by the fact that the data on GDP in a regional cross-section are only available with a substantial delay. The most recent data are available for 2005. Thus it is only possible to give an approximate opinion on it, on the basis of a simple model[101] in which dependence of real estate prices on the region's economic level is the decisive factor for establishing real estate prices, in the same way as in the previous case. However, this model also assumes that real estate prices are, apart from economic levels, subject to other specific (random) *regional* influences and also to specific (random) circumstances typical for *the individual periods* (years).

The results of the model indicate, for the most part, that residential property prices in the regions were changing in dependence on economic levels and

100 The found elasticity of prices to the economic level was higher than one, but the hypothesis that elasticity equals one could not be turned down (Wald test was used). Elasticity higher than one is partly related to the acceleration of real estate prices from a low level.
101 A panel assessment with random effects in cross-section and in time was applied.

that regional differences in the residential property prices resulted from regional differences in the economic level.

Price differences among the regions were caused by two groups of factors:

- regional random causes – various regionally conditioned facts that are beyond sufficient identification (as yet),
- regional factors acting in a systematic manner, which were in effect during the given period (2002 – 2005).

Regional differences in residential property prices in Slovakia were caused predominantly by regional differences in the economic level and also by regionally conditioned facts which are not explicitly expressed in the model and thus seemingly "random". Systematic regional causes were less significant. Systematically higher regional prices were identified for Bratislava and especially for the east of Slovakia – the Prešov and Košice regions. Whereas the regional difference for Bratislava seems justifiable, for the Prešov and Košice regions it may be surprising. Several explanations are possible:

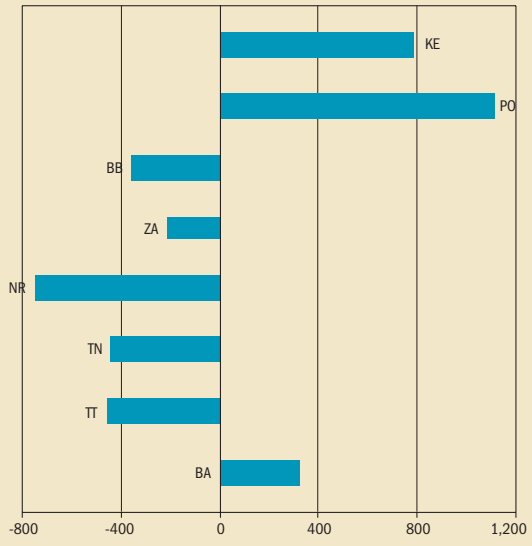
1. The economic (statistical) level of these regions is probably underrated as a result of the method used for measuring regional GDP, since several companies from the east of Slovakia operate in faster developing regions in the west of Slovakia, in Bratislava in particular, where a major part of added value is accounted statistically.

2. High unemployment rate and low wages as well as a high proportion of non-registered economy in the east of Slovakia are behind the high employment of the local residents outside this region or abroad. Income from non-registered economy is largely used for investments in real estates in Bratislava and in the east of Slovakia.

3. The identification of regional differences may be distorted by the nature of data on real estate prices which represent but a fraction of registered offering prices, whereas most of registered prices are in the place of operation of real estate agencies, i.e. especially in larger cities.

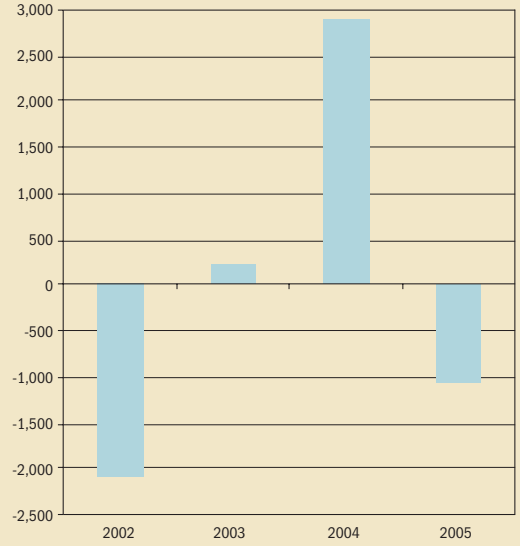
Regions "in the centre" of Slovakia (Trnava, Trenčín, Nitra, Banská Bystrica and Žilina) found themselves on the opposite pole of regional differences in the period of 2002-2005, whereas especially the real estate prices in the Nitra region seem to be substantially below the "normal" level which corresponds to the economic level.

Chart 83 **Regional differences between real estate prices and the impact of systematic regional factors in the period of 2002-2005 (Sk/m²)**



Source: Estimation based on a model.

Chart 84 **Fluctuations in real estate prices in time (SKK/m²) – deviations from the basic relationship between real estate prices and the economic level**



Source: Estimation based on a model.

The regional prices of residential real estates during the analysed period (2002-2005) were characterised by great fluctuations in time, among other things. As in the regional cross-section, so in time, powerful random influences and factors were in effect and could not be expressed in the model. However, some of these events were of a "systematic" nature. Their qualitative assessment is identical with the interpretation of results of an analysis of residential property prices for the whole of Slovakia.

Prices of residential real estates were low in 2002, which was largely associated with the fact that mortgage financing and the real estate market were just "getting off the ground". The development in 2003 and 2004 seems to have been a "boom" brought about, among other things, by the approaching entry into the EU and (ill-founded) fears of soaring prices or residential real estates (in particular flat prices in Bratislava and prices of land) after entering the EU. The correction in 2005 was based on these unfulfilled concerns.

Summary

The available data do not allow making downright and robust conclusions from the aforementioned observations. It seems, however, that some observations are more credible than others:

1. Residential property prices in our country from 2002 onwards were related to the achieved economic level. This is true both for Slovakia as a whole (in time) and for individual regions (territorial units).

2. The price development shows some elements of instability caused mainly by moods, expectations and fears on the market, which is why the fast growth in prices was immediately modified by „corrections".[102] Optimistic moods on the market and the expected increase in real estate prices caused that prices "overshot" the level based on the achieved economic level. This happened during the period prior to Slovakia's entry into the EU and it is also probably the case at present as we are expecting to join the euro area. The correction in 2005 (after joining the EU) and a potential correction in the coming period both shift the prices to a level which corresponds to the economic level. Exceeding the "long-term" level does not necessarily bring about a fall in prices. At the continuing fast growth rate of the economic level it may be possible to remove the existing price gap between the current and the "long-term" prices also by slowing down or stopping the increase in prices (current prices will "wait" until the "long-term" level catches up with them).

3. The regional differences in real estate prices were mainly caused by the differences between the economic levels of particular regions. However, both in the regional cross-section and in time, residential property prices are subject to influences and factors which appear to be random with respect to the possibilities of their measuring.

4. There were some events during the analysed period which caused the occurrence of systematic regional deviations from the basic relationship between residential property prices in a given region and the economic level of that region, causing that the regional prices of the "west" and "east" of Slovakia were above the level which corresponded to economic level, opposed to the "centre" of Slovakia where prices were below this level. In the case of eastern Slovakia this may be attributed to the difference between the income of households and statistical GDP in the region, a low proportion of registered economic activity, a high employment rate outside the region (the west of Slovakia and abroad) and a (probably) higher proportion of non-registered economic activity in the region, originating in a high unemployment rate.

5. It may be assumed that residential property prices in the regions where they have been lagging behind will grow faster in the future, usually in connection to the inflow of (foreign) investments and an increase in the economic level[103].

102 This corresponds to error-correction models. Its estimation would require longer time series.
103 This has been confirmed by the development of residential property prices in the Žilina region in 2006-2007. In the course of the year 2007 and at the beginning of 2008, the growth rate of real estate prices accelerated in central Slovakia, too.

List of charts

Box 1

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Abbreviations

ARDAL	Debt and Liquidity Management Agency
BRIBOR	Bratislava Interbank Offered Rates
BSSE	Bratislava Stock Exchange
CPI	Consumer Price Index
CRT	Credit Risk Transfer
DDP	Supplementary Pension Insurance Company
DSS	Pension Funds Management Company
ECB	European Central Bank
EFT POS	Electronic Fund Transfer at Point of Sale
EC	European Commission
ERM	Exchange Rate Mechanism
EU	European Union
GDP	Gross Domestic Product
HICP	Harmonised Index of Consumer Prices
LGD	Loss Given Default
OLS	Ordinary Least Squares Method
RGTS	Real Time Gross Settlement
ROA	Return of Assets
ROE	Return of Equity
ROW	Rest of World
SAX	Slovak Share Index
SEPA	Single Euro Payment Area
SDX	Slovak Bond Index
SIPS	Slovak Interbank Payment System
TARGET	Trans-Europan Automated Real-time Gross Settlement Express Transfer
VaR	Value at Risk
VEC	Vector Error Correction Model