NÁRODNÁ BANKA SLOVENSKA
EUROSYSTÉM

Financial Stability Report for the First Half of 2011

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Executive summary

Conditions for financial stability in Slovakia, which had been improving during 2010 and in the first quarter of 2011, began to deteriorate in the second quarter of 2011. The situation in the external environment became increasingly complicated: growth outlooks for the world economy worsened and the forecasts for 2011 and 2012 were revised down. As a consequence, investor concerns about public debt sustainability in several advanced countries intensified during the summer and autumn of 2011, particularly in regard to euro area sovereign risks. As the debt crisis in the euro area became more widespread and deeper, there was a further deterioration in performance outlooks for a number of key economies that are major recipients of Slovak exports.

During the first half of 2011, the Slovak economy progressed favourably, although it continued to be affected by elevated tensions in the external environment. While households did not see a significant improvement in real income growth, they did benefit from an upturn in the labour market situation. Many borrowing households also improved their financial position by refinancing old loans with new ones at lower rates of interest. Most segments of the corporate sector recorded positive results in the first half of 2011, although there were only a few segments in which sales surpassed their pre-crisis level. The consolidation of public finances remained on track. The positive changes in domestic conditions for financial stability were reflected in the banking sector; its net profit for the first half of 2011 rose considerably in year-on-year terms, boosted mainly by lower costs of non-performing loans and annual growth in interest income (as a result of retail lending growth). On the whole, profitability growth in the banking sector is a positive factor for financial stability, since it allows banks to strengthen their capital positions. The banking sector retained around 50% of its 2010 earnings as capital, but the pass-through to its capital adequacy ratio was modest owing to the introduction of two new items deductible from capital and an increase in risk-weighted assets.

Domestic financial stability is determined by risks in the external and internal environments and by the ability of domestic economic entities and financial institutions to withstand a materialisation of these risks. Looking at the area of the external environment that is most important to Slovakia – i.e. the economy, banking sector and financial markets of the euro area – the developments observed since the second quarter of 2011 have amplified the risks to domestic financial stability. Considering the extent of accumulated macroeconomic imbalances in the euro area, conditions for sectors of the domestic economic are expected to remain difficult not only in the short-term, but also in the medium-term horizon.

As a result of these worsened conditions in the Slovak real economy there is a mounting risk that the government plan for medium-term fiscal consolidation will not be achieved. This situation, further amplified by the political uncertainty caused by the fall of the Slovak Government in October 2011, so far represents a relatively small, but direct, risk to domestic financial stability. A positive signal in this regard has been cross-party political support for the fiscal consolidation measures and the establishment of the independent Fiscal Responsibility Board. The domestic banking sector must reckon on an increase in losses from credit and market risks. According to stress testing results, the banking sector is resilient to relatively large losses on non-performing loans to enterprises and households and on the repricing of its securities holdings. The resilience of the sector as a whole to adverse developments is particularly evident from the estimated ability of banks to generate interest income (and ultimately profits) even under crisis conditions and from the sector's starting capital position.

Nevertheless, the current situation is more serious than that which followed the collapse of Lehman Brothers in 2008, mainly because it is now sovereign creditworthiness that is in doubt. A number of countries are severely restricted in the extent to which they can act as an ultimate guaran-

tor of financial stability should any unexpected systemic risks materialise. The same applies to central banks and their capability to further support the conditions for economic recovery. The strengthening of the financial sector's resilience to systemic risk is increasingly reliant on the sector making its own balance sheet adjustments and building its own capital buffers.

CHAPTER 1

EXTERNAL CONDITIONS FOR FINANCIAL STABILITY

1

1 EXTERNAL CONDITIONS FOR FINANCIAL STABILITY

1.1 FINANCIAL STABILITY CONDITIONS IN SLOVAKIA RESULTING FROM THE GLOBAL ECONOMY AND FINANCIAL MARKETS

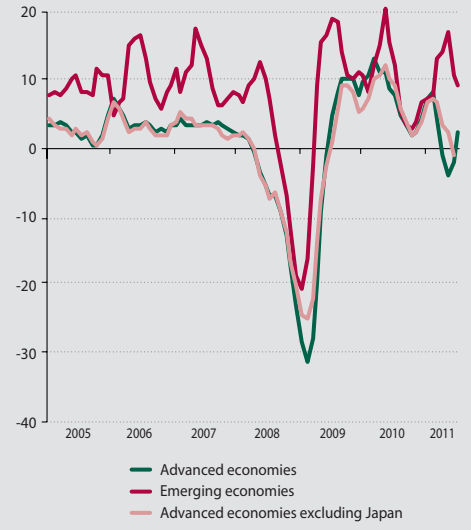
The external environment conditions relevant to domestic financial stability deteriorated quite severely towards the end of the first half of 2011. Performance outlooks worsened for key economies that are major recipients of Slovak exports.

The growth of key economies that have a crucial bearing on the economic performance and financial stability of Slovakia slowed in the first half of 2011, largely due to unexpected factors, i.e. the natural disaster in Japan and the revolutions and civil uprisings in Libya and other Arab countries. The repercussions of the Great East Japan earthquake and tsunami included the disruption of global supply-chains for various industries (particularly the automotive industry) and upward pressure on energy prices. The turmoil in the Arab world caused oil prises to rise. These temporary factors have had a negative effect on industrial production (Chart 1) and consumer behaviour, but that effect is tapering off.

By contrast, the factors that have been dampening growth over a longer period were amplified by the above-mentioned temporary factors, the result being a deterioration in the outlook for global economic growth in the second half of 2011 and 2012 (Chart 2).

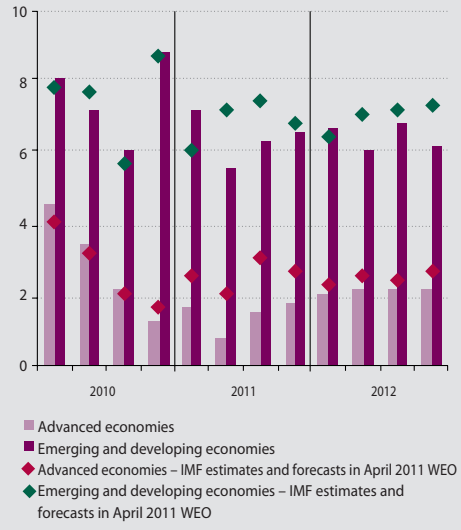
In the United States, economic activity was weak in the first half of 2011. Consumption growth moderated, reflecting mainly the effect of high oil prices and uncertainty about the labour market situation. The near-term outlook for GDP growth deteriorated sharply, due not only to developments in the external environment, but also to the negative effect of several internal factors. The performance of the US economy in 2012 will be adversely affected by the unwinding of fiscal stimulus measures implemented in 2011 and severe spending cuts in the federal budget. GDP growth will also be dampened by the continuing slump in consumer sentiment, since unemployment remains relatively high, the housing market is weak, and household sector deleveraging continues.[1] The fiscal consolidation plan for the medium-term horizon should be based on realistic assumptions; at the same time, in order to prevent a severe and

Chart 1 Industrial production (annualised percentage change of three-month moving averages)



Source: IMF – World Economic Outlook, September 2011.

Chart 2 Expected real GDP growth (percent; quarter-on-quarter, annualised)



Source: IMF – World Economic Outlook, September 2011.

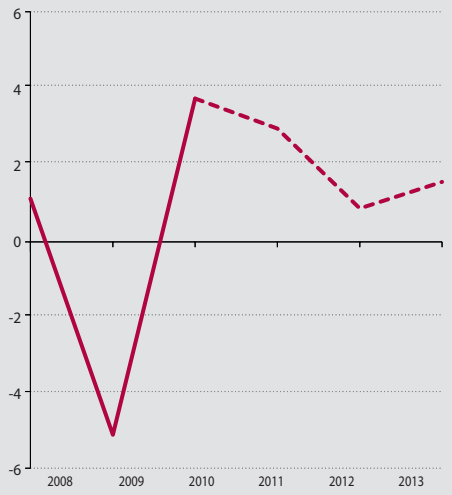
1 *At the beginning of November 2011 the Federal Reserve revised down its central estimate for GDP growth in 2012, to 2.7%, from 3.5% in June 2011.*

sudden slump in economic confidence indicators, the implementation of this plan must not be subjected to the kind of political stalemate that surrounded the approval of the plan (and the raising of the debt ceiling) in August 2011.

In the EU/euro area, GDP growth was relatively strong in the first quarter of 2011 (Table 1), mainly because economic activity was making up ground lost in the last quarter of 2010 to adverse weather conditions in several countries. In the second quarter, however, GDP growth decelerated sharply, as construction sector activity fell short of the elevated first-quarter levels and as the EU/euro area economy was hit by the effects of oil price shocks and the repercussions of the natural disaster in Japan. At the same time, fiscal stimulus measures in several countries continued to unwind. PMI indicators suggest that euro area economic performance will be very weak in the second half of 2011 and that the probability of GDP contracting in the fourth quarter is relatively high; growth in 2012 faces similarly strong risks. The main reason is the escalation of the debt crisis in summer 2011, when investor concerns about the sustainability of public finances spilled over from the euro area periphery countries hardest hit by the debt crisis (Greece, Portugal, Ireland) to the larger euro area economies of Italy, Spain and Belgium. Meanwhile, the debt-crisis contagion is increasingly spreading into the banking sector, with the result that access to market financing has become very restricted for euro area banks. The euro area debt crisis has therefore taken on a systemic character. For the medium-term outlook, it is crucial that the policy responses to the systemic risk are adequate in terms of both the scope of measures taken and their timing (see Box 1).

Slovakia's main trading partner is Germany, which in 2010 received around 20% of the country's total exports; therefore, the condition of the German economy is an important factor in the performance of the domestic economy. At present, the German economy is in a relatively sound state, as is clear from, for example, the robust growth in industrial production, the record low level of unemployment, and the resilience of German consumer confidence.[2] The positive tendencies in the economy are expected to continue in the second half of 2011, supported mainly by domestic demand. However, the contribution of external demand is expected to decline, and the effect of slackening external demand on the highly-export oriented German economy should become apparent in 2012 (Chart 3). The downturn in foreign demand stems both from the expected economic slowdown in the United States and China and from the recession in southern European countries brought on by austerity measures. The medium-term outlook will be determined by upcoming developments, in particular the steps taken to deal with the euro area debt crisis.

Chart 3 GDP of Germany – annual rate of change (constant prices; %)



Source: European Commission – European Economic Forecast, November 2011.
Note: The broken line denotes projected data.

Table 1 Real GDP growth (%)

	Quarterly rate of change						Annual rate of change		
	2010		2011						
	Q3	Q4	Q1	Q2	Q3	Q4	2011	2012	2013
Euro area	0.4	0.3	0.8	0.2	*0.2*	*-0.1*	*1.5*	*0.5*	*1.3*
EU	0.5	0.2	0.7	0.2	*0.2*	*0.0*	*1.6*	*0.6*	*1.5*

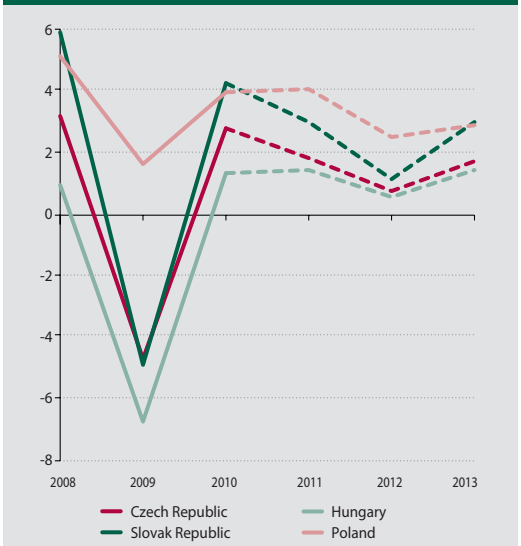
Source: Eurostat; European Commission – European Economic Forecast, November 2011.
Note: Figures are based on seasonally-adjusted data; the figures in italics are forecasts.

2 *Germany's unemployment rate in September 2011 stood at 6.9%.*

Another export market whose performance has a direct and significant effect on Slovakia's economy, and therefore also on conditions for domestic financial stability, is the group of economies comprising the Czech Republic, Hungary and Poland.[3] The first two countries in this list are similar to Slovakia in that they have highly open economies and are exposed to the same external factors, mainly to developments in the euro area (more specifically, in Germany). Looking ahead, the economic performance of these countries will be adversely affected mainly by the deteriorating outlook for the global economy and for the economies of their most important trading partners. As for domestic demand in these countries, it will come under downward pressure from ongoing fiscal austerity measures. The Polish economy is more closed and is better equipped to withstand the worsened external conditions (as was seen in the economy's performance in the second and third quarters of 2011). Nevertheless, the persisting sovereign debt crisis in the euro area and weakening of external demand will have a moderating effect on GDP growth in 2012 (Chart 4). In addition, the new Polish Government of Prime Minister Donald Tusk is set to implement a new medium-term plan for fiscal consolidation, which will exert a further drag on Polish GDP growth (but probably not until after 2012).[4] The region as a whole is generally very sensitive to any rise in investor risk aversion; the probability of a sudden sell-off of the region's risky assets is very high, given the current conditions of a negative outlook for global growth and the intensification of the euro area debt crisis.[5] Hungary is the most vulnerable country in this regard, owing to its relatively high debt ratio (Chart 5). At the same time, the substantial depreciation of the Polish and Hungarian currencies is creating risks for the banking sectors of these countries, where more than 60% of the household credit portfolio is denominated in foreign currencies, mainly the Swiss franc and euro. Local banks have responded to these risks by substantially increasing their loan loss provisioning levels (and therefore incurring a short-term drop in profitability). Government measures have been more aimed at the deleveraging of households (in Hungary, this has been more markedly at the expense of banks).

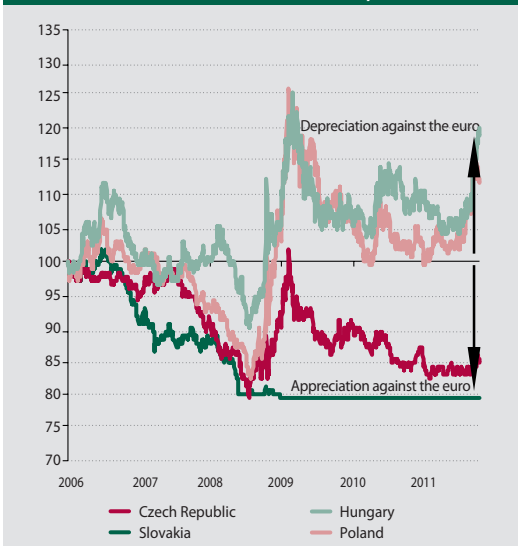
Conditions in financial markets have been made substantially more complicated by the escalation of the euro area debt crisis and the deterioration in expectations for global economic growth. Looking ahead, it is probable that the negative feedback loop between financial markets and the real economy will intensify and that balance sheets will not be repaired at the required pace.

Chart 4 GDP – annual rate of change (constant prices, %)



Source: European Commission – European Economic Forecast, November 2011.
Note: The broken line denotes projected data.

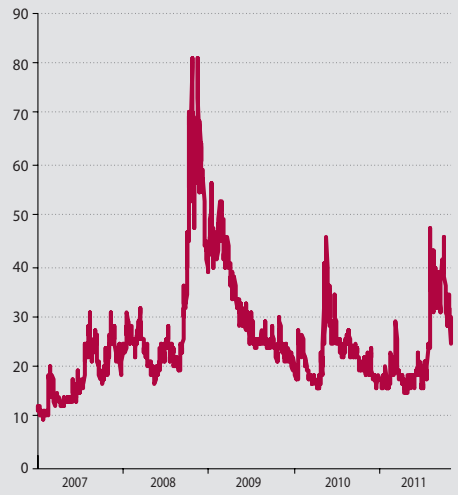
Chart 5 Exchange rates of V4 countries' currencies vis-à-vis the euro (daily data; index: 30 December 2005 = 100)



Source: Eurostat.
Note: Slovakia adopted the euro on 1 January 2009; the conversion rate was set on 8 July 2008. The cut-off date for the data is 31 October 2011.

3 *This group of economies received almost 30% of Slovakia's total exports in 2010.*
4 *The Tusk-led Civic Platform party won the Polish General Election held on 9 October. The original fiscal consolidation plan aimed for a budget deficit of 3% of GDP in 2012, but that is very unlikely to be achieved.*
5 *Evidence for this includes the slump in local equity markets and in the exchange rates of these countries' currencies since the beginning of July 2011.*

Chart 6 Implied volatility in equity markets measured by the VIX index (daily data)

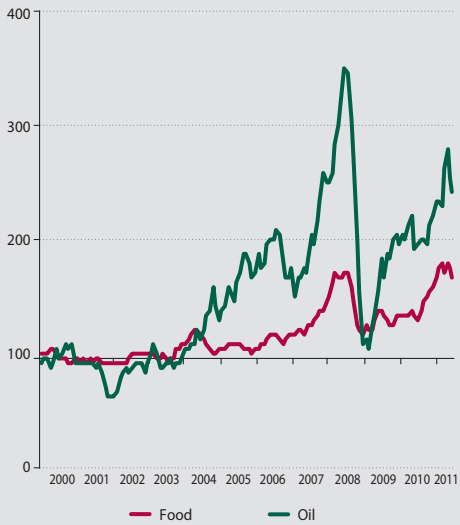


Source: CBOE.
Note: The VIX is an index of volatility that measures the implied volatility of equity markets from option prices on the S&P 500 index. The VIX expresses the size of investors' risk aversion – a value of more than 20 indicates a high aversion to risk and a value of more than 50 indicates that investors have very serious concerns. The cut-off date for the data is 31 October 2011.

Financial market developments in the first half of 2011 were strongly influenced by two (positively correlated) factors: the outlook for global economic growth, and events in the euro area.[6] The rise in investor concerns about global growth and the decline in perceived inflation risks was related to a series of unfavourable data from the United States. Equity markets responded by falling back from their highs in April and becoming more volatile (Chart 6). With investors switching to bond markets, sovereign debt yields declined. Commodity prices also fell (Chart 7).

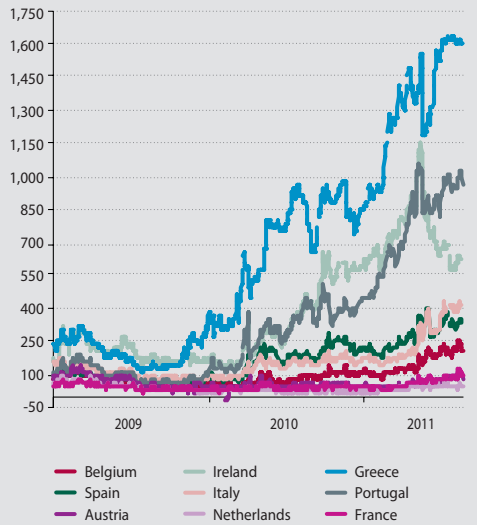
In May 2011, concerns about public debt sustainability in certain euro area countries returned to the markets. The reason was that investors were lowering their expectations for global economic growth and were dissatisfied with the efforts of euro area politicians to deal with the debt crisis. The interest rate spread on Greek government bonds reached a new high (Chart 8), while markets again became concerned that sovereign debt shock would spill over into banks and the banking sectors of key euro area economies. The euro area debt crisis gathered momentum during the summer of 2011, and financial markets were unimpressed with an agreement reached by EU countries on 21 July 2011 on new measures to address the crisis. In fact, investors began to demand substantially higher credit risk premia on Spanish, Italian and Belgian sovereign bonds, and to a lesser extent also on French paper. At the same time, tensions were rising in the euro area interbank market, as was clear from the movements in interbank spreads (Chart 9).

Chart 7 World commodity prices (index: 2000 = 100, in real terms, as deflated by the US consumer price index)



Source: IMF – World Economic Outlook, September 2011.
Note: The cut-off date for the data is June 2011.

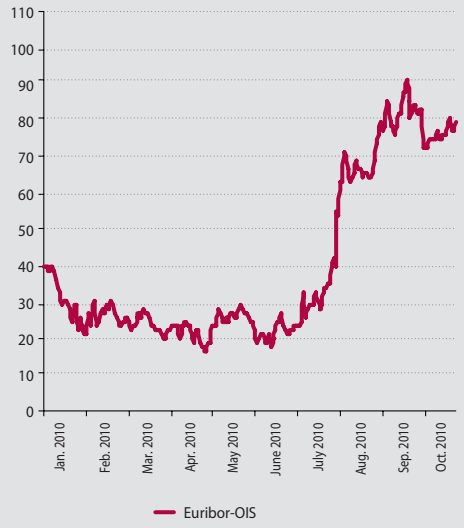
Chart 8 Yield spreads on government bonds of selected countries over German bunds (basis points)



Source: Eurostat, NBS calculations.
Note: The cut-off date for the data is 28 October 2011.

6 *The devastating earthquake and tsunami that struck Japan in March led to investors temporarily withdrawing from more risky assets.*

Chart 9 Interbank market spreads (basis points)



Source: EURIBOR-EBF.
Note: The Chart shows the spread between the three-month EURIBOR (the rate at which three-month funds are borrowed in the euro area interbank market) and the three-month swap rate. The wider the spread, the greater the perception of counterparty risk in the interbank market.
The cut-off date for the data is 31 October 2011.

The first half of 2011 also saw an escalation of market concerns about the debt positions of the United States and Japan. Investors were particularly sensitive to the political stalemate in the United States surrounding the decision on a fiscal consolidation plan and to the decision of one credit rating agency to downgrade the top-tier credit rating of the United States.

Looking ahead, the unfavourable situation in financial markets probably means that bank lending conditions are not about to normalise and support the real economies of advanced countries. In fact, if investor concerns about debt sustainability in crisis-hit countries reach levels that would be expected to result in a materialisation of the systemic risks mentioned above, the slump in consumer and corporate confidence would have a severely adverse impact on the global economy.

1.2 FINANCIAL POSITION OF THE EURO AREA BANKING SECTOR AND ITS EFFECT ON THE DOMESTIC BANKING SECTOR

According to the ECB, three of the most serious risks to the euro area banking sector are: the interplay and potential contagion between the banking sector, public finances and the real economy; bank funding vulnerabilities and risks related to the volatility of banks' funding costs; and, in some European countries, losses stemming from persistently subdued levels of, or a further decline in, commercial and residential property prices.[7] The wide divergence in the estimated impacts of the materialisation of these risks is only adding to uncertainty among investors and creditors.

In the first half of 2011 and over the course of the summer, the risk of contagion between banking sector and public finances spread from the three countries that originally received financial assistance from the EU and IMF (Greece, Ireland and Portugal) to Italy, Spain, Belgium and France. The chief reason is that these countries have weak outlooks for economic growth and their economies contain structural weaknesses that prevent them from growing fast enough to sustain the government debt ratio. In addition to that, the performance of these economies is adversely affected by the weak banking sector. Amid rising sovereign risks, banks are facing increasing constraints on access to market funding, and those banks with greater exposure to countries under stress have been virtually shut out of the money markets. Bank funding costs are also being pushed up by competition from sovereign borrowers in need of funding and by increasing competition between banks for primary deposits. The nature and extent of the disturbances have a systemic character, and in the markets there is a persistently strong perception of systemic risk. This points to the need for an accelerated restructuring/recapitalisation of struggling banks.

The commercial property markets in most euro area countries picked up during 2010. Nevertheless, credit risk on loans to property developers remains high in certain countries, owing to the large volume of such loans and uncertain outlooks for the commercial property market. Household credit risk is also high in certain countries, on account of the unfavourable outlook for household income and the risk of a correction in residential property prices (in those countries where the prices are most overinflated, i.e. Spain, the Netherlands, Italy, France and Belgium). The balance sheets of euro area banks are burdened with considerable valuation risks and funding

7 *ECB: Financial Stability Review, June 2011.*

risks, as well as with assets denominated in US dollars (notably exposures, arising under complex financial instruments, to the still weak US housing market).

The estimates of the losses that the euro area banking sector could incur from these risks vary widely depending on the assumptions and research methods used. According to the estimates of the European Banking Authority (EBA), based on a sample of 70 selected banks and taking into account income from portfolios of low risk sovereign debt, European banks will need to raise €106 billion (Box 1). Meanwhile, the IMF says banks face potential losses of around €200 billion on writedowns of sovereign debt issued by the six most troubled euro area countries. Merrill Lynch estimates that the losses of 90 selected banks on similar writedowns would be €162 billion, and on that basis (assuming a 9% capital requirement for core Tier 1 capital) it puts the capital shortfall at €413 billion. According to Morgan Stanley, euro area banks face a capital shortfall of €275 billion. Although these figures are derived from widely differing measurement approaches, they are being presented in the media as if they pertain to the same set of facts.[8] This is exacerbating uncertainty among investors and further undermining their confidence in the measures taken.

Box 1

MAIN RESULTS OF OCTOBER'S EURO AREA SUMMIT ON THE STABILISATION OF THE EURO AREA SOVEREIGN DEBT CRISIS

The main outcome of the EU/euro area summit at the end of October 2011 was an agreed set of new measures to address the euro area debt crisis and stabilise the European banking sector. According to a European Banking Authority analysis (based on June data on banks and September data on sovereign debt yields), the EU banking sector has a capital shortfall of €106 billion, given the exceptional raising of the core Tier 1 capital requirement to 9% of risk-weighted assets. Banks must meet this requirement by the end of June 2012, and it is assumed that they will make up most of the shortfall from internal funds (profits and asset sell-offs). The summit also saw an agreement on reducing the nominal value of Greek debt held by private investors (around €200) by 50%. A third key measure was an agreement to leverage the European Financial Stability Facility. The immediate reaction of financial markets to these measures was positive. The most important factor will be the effect of these measures on the highly complicated funding conditions facing European banks (particularly in regard to their need to refinance long-term debt maturing in 2012 in the amount of around €440 billion), and subsequently on economic growth in the EU. Markets will probably continue paying close attention to, and being sensitive to, the progress of key structural reforms aimed at ensuring that the euro area countries under greater stress increase their capacity to service sovereign debts.

Any materialisation of systemic risk in the euro area banking system could adversely affect the Slovak banking sector. However, the competent domestic authorities have sufficient powers and tools at their disposal to mitigate this risk.[9]

The Slovak banking sector is largely owned by foreign banking groups, most of which are based in other euro area countries. Given the intractable situation in the euro banking sector, the question is: how will any further deterioration in this situation affect the stability of domestic banks? The largest banks in Slovakia are independent joint-stock companies under the Slovak law. As such, they are subject to domestic laws and regulatory rules on capital, liquidity, large exposures, reporting, operations, etc. At the same time, the activities of domestic banks are subject to supervision by Národná banka Slovenska, and this supervision is coordinated with the supervisory authorities of foreign parent undertakings. Thus, effective tools are in place to restrict the risk that any domestic bank will be endangered by the collapse of its parent undertaking.

8 *See, for example, Barker, A. and Jenkins, P., "EU bank recap could be only €80bn", Financial Times, 19 October 2011.*

9 *For a more detailed analysis of this issue, with regard to the planned crisis resolution regime for credit institutions at the EU-level, see an article in the Biatec journal, December 2011.*

The previous period saw rating agencies downgrade the credit rating of major Italian banks Intesa Sanpaolo and UniCredit, and the Slovak subsidiaries of these banks were automatically downgraded, too. In other words, the financial strength of the parent undertaking has an indirect effect on the financial strength of the subsidiary, and, in general, the strength of this effect correlates positively with the dependence of the subsidiary on funding from the parent. The major Slovak banks have access to sufficient domestic funds to finance their lending activities (see Chapter 3).[10]

The main risks to domestic financial stability from the external environment are that:

- external demand declines, particularly due to elevated credit risks of certain euro area countries and their adverse effect on banking sector stability;
- heightened systemic risk in the euro area weighs down on the lending activity of some domestic banks.

10 In this case, however, the reduction in the banks' credit ratings was related to the downgrading of Italy's credit rating and not to any deterioration in the financial condition of the banks themselves.

CHAPTER 2

FINANCIAL STABILITY DEVELOPMENTS IN THE SLOVAK ECONOMY

2

2 FINANCIAL STABILITY DEVELOPMENTS IN THE SLOVAK ECONOMY

2.1 OVERALL DEVELOPMENT OF THE SLOVAK ECONOMY

Domestic macroeconomic conditions were quite positive in the first half of 2011, and the economy continued to grow. Národná banka Slovenska (NBS) expects economic growth for the whole of 2011 to be positive, albeit lower than in 2010 owing to the implementation of fiscal consolidation measures. The outlook for growth in 2012 was revised downwards amid expectations of a slowdown in global economic growth.

At the beginning of the year, business cycle indicators pointed to an improvement in near-term outlooks, but towards the end of the first six months both business and consumer confidence indicators were falling, signalling an economic slowdown. An increase in corporate profitability led to a rebound in investment demand, as well as in lending to several segments of the non-financial corporate sector. Households facing a slowdown in income growth responded by cutting back on consumption and accumulating savings in financial assets, while the investment rate remained flat.

In the corporate sector, the economic crisis prompted a search for alternative sources of financing. Borrowing from the domestic financial sector was to some extent replaced by market funding or the greater utilisation of own funds. A continuation of this trend could cause a shift in the distribution of credit risk in the economy. So far, it is not clear whether this is a longer-term trend or simply a shorter-term reaction of firms to the credit crunch and recession. If the process of disintermediation continued, the need for greater utilisation of own sources of financing may also cause a slowdown in investment growth.[11]

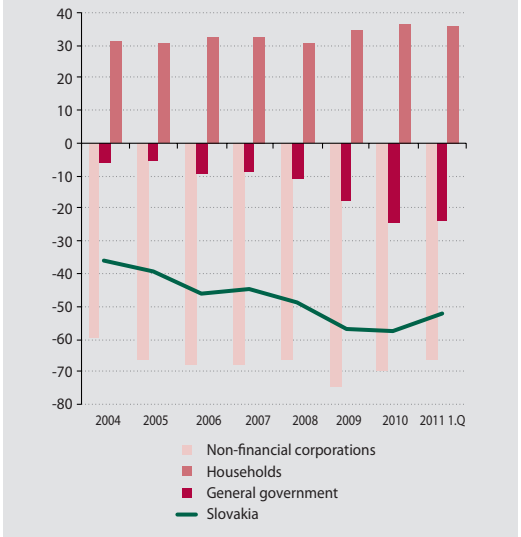
Public finances improved somewhat, as fiscal consolidation measures led to a decline in the deficit. However, the fiscal outlook is less benign in the short-term horizon, given the instability of the domestic political scene. But while markets again lost confidence in several sovereigns, they retained their confidence in Slovakia; as a consequence, spreads on Slovak government bonds were not adversely affected to a significant extent. In this period of turbulence, none of the major credit rating agencies revised their outlook for Slovakia.

Developments in the net financial wealth[12] of the economy's institutional sectors (Chart 10) indicate that the trend growth in indebtedness continued during the first half of 2011 due to the negative contribution of the general government sector. The positions of non-financial corporations improved moderately. Indebtedness and leverage increased across the economy's sectors in 2011.

The deterioration in the financial situation of Slovak enterprises stemmed from both the global economic crisis and the rise in their leverage. However, the extent of the sector's leverage remains far below the euro area average (100% of GDP in 2010).

The decline in net financial wealth and rise in leverage implies a reduction in the sector's ability to deal with economic shocks.

Chart 10 Net financial wealth (% of GDP)



Source: Eurostat.
Note: Net financial wealth = financial assets – financial liabilities.

11 The financial position of non-financial corporations is analysed in Annex 2.
12 Net financial wealth = financial assets – liabilities as a ratio of GDP.

Chart 11 Sectoral leverage (%)

Source: AMECO database, Eurostat, NBS.
1) EC forecast for 2011.
Note: Households: liabilities / assets. Non-financial corporations: debt liabilities / assets Government: liabilities / income.

The Slovak economy continued to record growth, although it remained uneven

Real GDP for the first half of 2011 increased by 3.4% year-on-year. Looking at the structure of growth, net exports made the largest positive contribution, while domestic demand stagnated. Domestic demand was supported mainly by investment demand, as consumer demand and general government final consumption remained flat. As in the previous period, labour productivity growth was higher than real wage growth.

Price inflation increased in line with expectations.

In line with assumptions, inflation accelerated due mainly to rising commodity prices (especially energy and food) and the effect of tax changes. In the first half of 2011, the headline inflation rate climbed to 4% and inflation in the manufacturing sector, after a long downward trend, increased as well.

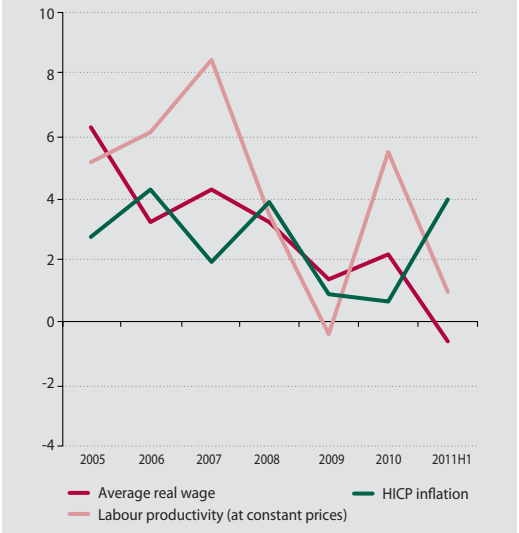
A strengthening euro coupled with higher inflation translated into lower price competitiveness.
The price competitiveness of Slovak exports, as measured by the real effective exchange rate (REER) index, declined year-on-year in the first half of 2011. This was partly caused by a positive inflation differential (since the inflation rate in Slovakia was higher than in the countries of the relevant trading partners), as well as by a strengthening of the nominal effective exchange rate.

The external balance improved due to robust export growth
The current account deficit fell to 0.5% of GDP. Both imports and exports increased, and the trade surplus declined to 0.2% of GDP. The serv-

Chart 12 GDP (annual percentage changes)

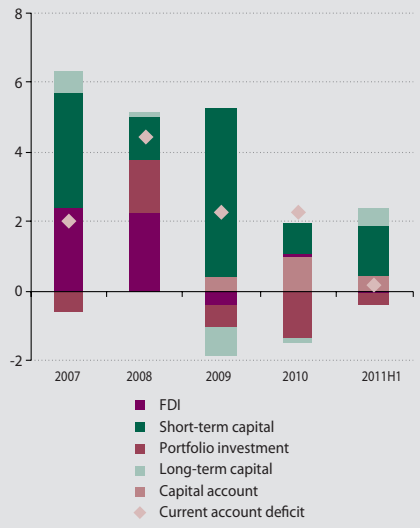
Source: SO SR, Eurostat.

Chart 13 Labour productivity and wages (annual percentage changes)



Source: SO SR.

Chart 14 Current account financing (EUR billions)



Source: NBS.

Chart 15 External indebtedness (% of GDP)

Source: NBS.

ices balance and current transfers balance each recorded an improvement. Higher corporate profitability resulted in a further rise in income repatriated by foreign investment, and this was reflected in the income balance.

The trend rise in debt to the rest of the world persists.

The gross external debt rose to €52.7 billion (78.1% of GDP). Short-term debt as a share of total gross external debt declined to 55.1%. The general government sector' share in the short-term debt fell to 53%, and its share in the long-term debt rose to 50%. The debtor position of Slovakia vis-à-vis the rest of the world increased marginally in net terms.

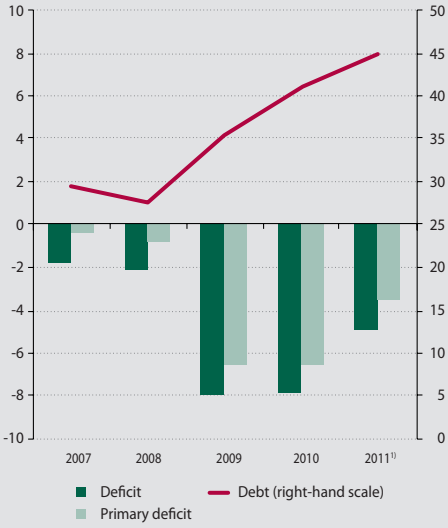
First results of budget consolidation

The general government budget deficit for the first half of 2011 stood at €1,578 billion. The figure was better than expected, possibly due to improved tax collection as well as to curbs on expenditure. The budget deficit in 2011 is expected to be 4.9% of GDP.

According to the Government, the target deficit of 3% of GDP in 2013 remains on course, but the further consolidation measures will be challenging given the instability at the political level.[13] Another risk to the fulfilment of the consolidation objectives is the low rate of economic growth (levels of growth in the past have enabled Slovakia to maintain or achieve a stable debt ratio).

Looking at the structure of general government borrowing, the bulk of the funding was obtained

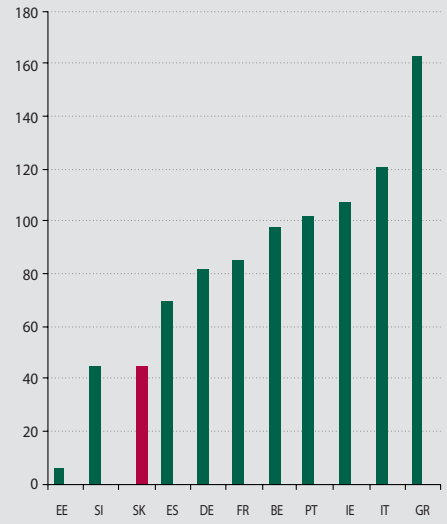
Chart 16 General government deficit and debt of Slovakia (% of GDP)



Source: Eurostat.
Note: Primary deficit – deficit excluding interest payments on government liabilities.

13 The decision to hold early parliamentary elections in March 2012 was taken in October 2011.

Chart 17 Public debts of euro area countries (% of GDP)



Source: EC forecast.

through long-term debt securities; the share of short-term loans increased moderately.

The persisting sovereign crisis put upward pressure on public debt financing costs

Amid the escalating crisis of the most indebted euro area economies, the majority of euro area countries saw their funding costs rise in the first half of 2011. Yields on safe-haven German Bunds began declining in the second quarter of the year, which resulted in a rise in the credit risk premium on Slovak government debt. Slovakia was not perceived as a country under stress, and yields on Slovak paper remained slightly lower than the euro area average.

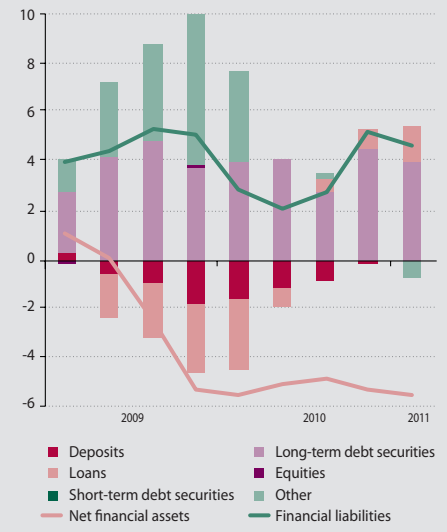
2.2 MEDIUM-TERM RISKS FROM THE DOMESTIC MACROECONOMIC ENVIRONMENT

Although macroeconomic indicators improved in the first half of 2011, the domestic economy remains vulnerable in regard to financial stability. The main potential risks to financial stability in the domestic environment remain those identified in previous reports; they are associated particularly with:

- developments in public finances,
- persisting uncertainty about medium-term growth, and, relatedly,
- income developments in economic sectors.

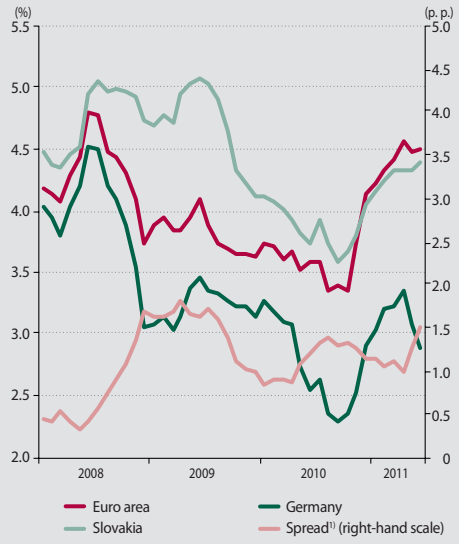
Risks from the domestic macroeconomic environment remain substantial

Chart 18 Financial liabilities (EUR billions)



Source: NBS.
Note: Cumulative transactions over four quarters.

Chart 19 Long-term government bond yields



Source: Eurostat.
1) Slovak government bonds over German Bunds.

The national economy continued growing in the first half of 2011, which helped stabilise the financial position of the economy's sectors. This stabilisation of the domestic environment will probably be cut short by the escalating debt crisis in the euro area as well as by mounting uncertainty in the global economy, which may be expected to feed through to the domestic environment during the course of next year.

In the fiscal sector, the first results of consolidation measures were positive. Given, however, the heightened political uncertainty, there is a risk that the implemented measures will be discontinued in the future.[14] Such a scenario could put at risk not only the fulfilment of fiscal consolidation undertakings, but also the overall sustainability of the country's debt position.

2.3 NON-FINANCIAL CORPORATE SECTOR

Lending to non-financial corporations and households continued to grow in the first half of 2011, and most of the outstanding loans were long term (Chart 20). Lending to financial corporations by the domestic banking sector increased after a period of stagnation (see Part 3.2 for more details). The stagnation stemmed from a tightening of bank credit standards and from lower demand for loans in an environment less conducive to the realisation of investment aims. Lending to households also recorded moderate growth in the first half of 2011, mostly through housing loans and consumer credit.

In terms of profitability, the financial position of enterprises improved.

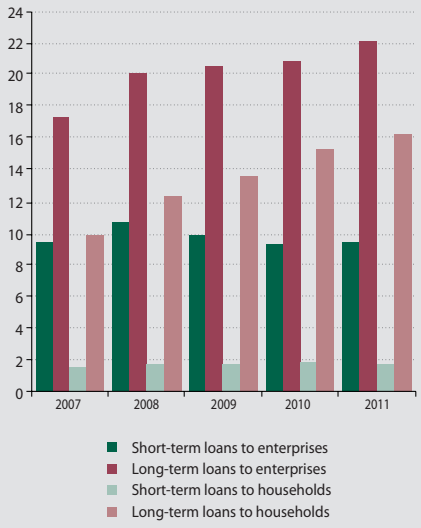
The financial position of enterprises reflects their profitability. The profit margin of the non-financial corporate sector (employee compensation / value added at constant prices) returned to growth after falling in 2009. The profit margin reflects developments in real wages and labour productivity. It increased in this case because real wage growth decelerated while productivity growth held up (Chart 21).

Overall corporate profits for the first half of 2011 increased by €4,904 million year-on-year, driven up by results in the industry sector and real estate business sector. Firms remained cautious in their approach to investment and borrowing.

Business confidence indicators weakened in the first half of the year

The upturn in sentiment observed in most sectors in 2010 was not maintained for long. Confidence fell in all sectors except services; the confidence indicator for that sector increased beyond its 2010 level.

Chart 20 Stock of loans by maturity (EUR billions)



Source: NBS. Quarterly Financial Accounts.

Chart 21 Profit margin, labour productivity and real wages (annual percentage changes)

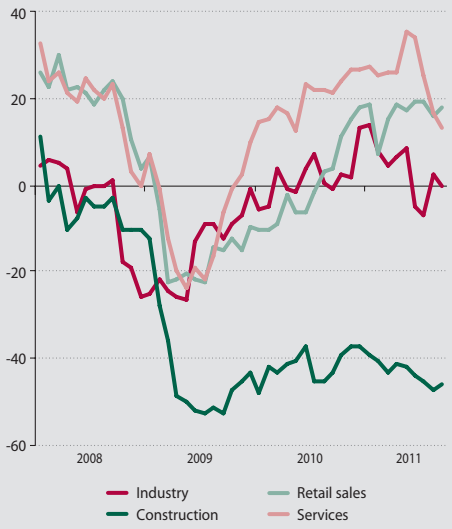
Source: SO SR.
Note: Profit margin index: 2000=100.

14 Disputes within the coalition resulted in early elections to in March 2012.

Chart 22 Production, sales and investments (index: same period of the previous year = 100)

Source: SO SR.

Chart 23 Business tendency indicators (balance of responses)

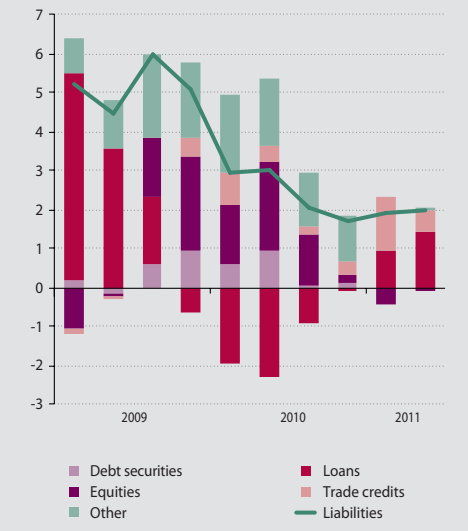


Source: Eurostat.

Indebtedness of non-financial corporations fell moderately

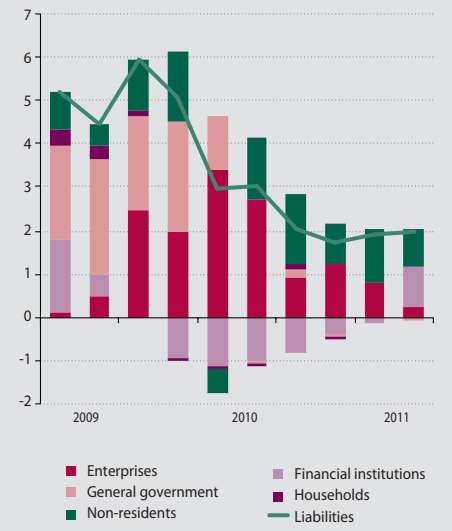
Non-financial corporations reduced their indebtedness in the first half of 2011, as their financial assets increased more sharply than their financial liabilities. Looking at the composition of the sector's financing, the share of loan financing increased further, while the share of equity financing declined. As for the composition at the sectoral level, financing from banks increased and inter-company financing fell. The volume of trade credits between firms also rose, although the amount of trade credits received from non-residents declined.

Chart 24 Financing broken down by instrument (EUR billions)



Source. NBS.
Note: Cumulative transactions over four quarters.

Chart 25 Financing broken down by sector (EUR billions)

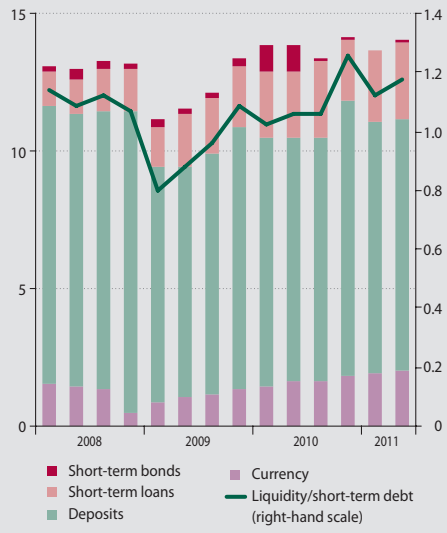


Source: NBS.
Note: Cumulative transactions over four quarters.

Chart 26 Structure of debt (%)

Source: NBS.
Note: Debt – excluding other liabilities.

Chart 27 Liquid assets (EUR billions)



Source: NBS.

On the side of financial assets, firms maintained sufficient liquidity (currency, deposits, short-term debt and short-term securities), which covered their short-term debts (according to original maturity).

Chart 28 Savings and investment rate (%)

Source: SO SR.
1) Annualised.
Note: GDI – gross disposable income.

2.4 HOUSEHOLD SECTOR

The economic situation of households remained sub-optimal

The labour market situation consolidated slowly and steadily in the first half of 2011. While the unemployment rate remained above 13%, overall employment increased moderately. As regards household credit risk, the situation for banks could become more difficult given that an increasing proportion of the unemployed are from medium- and higher-income categories – the same categories that have the majority of liabilities to banks (see Part 3.2 for more details).

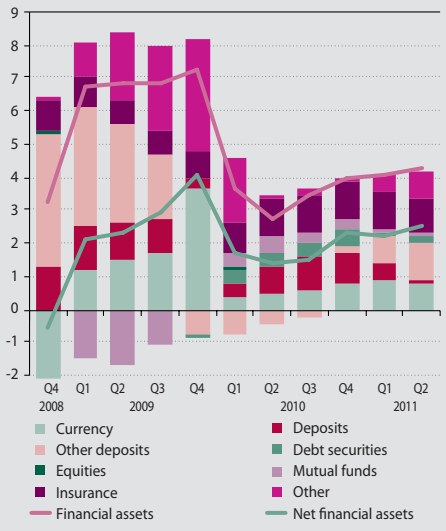
Overall disposable income increased, due mainly to growth in primary income (which matters for debt servicing purposes) as well as to a rise in social benefits.

Lower household consumption translated into further growth in the household saving rate, while household investment remained subdued. Towards the end of the first half of 2011, house-

Chart 29 Labour market – unemployment and the job vacancy rate (%)

Source: SO SR.
Note: Job vacancy rate – number of job vacancies / (number of filled positions + number of job vacancies).

Chart 31 Household assets (EUR billions)



Source: NBS.
Note: Cumulative transactions over four quarters.

holds were increasingly taking funds out of more risky instruments and allocating them to more secure financial assets, mostly time deposits.

With the growth in financial assets exceeding the rise in liabilities, the net financial assets of the household sector continued to increase (Chart 31).

Chart 30 Disposable income (annual rate of change)

Source: SO SR.

The aggregate debt servicing ratio for the household sector (i.e. the amount of debt payments as a percentage of disposable income) was at an adequate level. However, the capacity of households to meet unexpected financial expenditures is relatively limited. The results of Eurostat's EU-SILC survey imply that around two-thirds of households, and not just low-income households, would struggle to meet unexpected expenditures. The ability to pay for necessary expenditures is substantially better, with only a third of households facing financial stress in this regard. Among low-income households, however, more than half of households are struggling to meet current liabilities.

2.5 MEDIUM-TERM RISKS IN THE NON-FINANCIAL CORPORATE AND HOUSEHOLD SECTORS

The financial position of enterprises and households at the aggregate level improved somewhat in the first half of 2011, with both sectors recording a moderate rise in net financial wealth. However, confidence indicators imply that uncertainties about longer-term prospects will persist into the future.

Table 2 Ability to afford necessary and unexpected expenditures (percentage share of households)

	2005	2006	2007	2008	2009	2010
Ability to afford necessary expenditures						
with great difficulty	12.5	12.4	10.7	11.6	11.1	11.5
with difficulty	18.0	22.5	19.9	23.4	20.5	20.4
Households with income below 60% of the median						
with great difficulty	26.1	31.0	36.3	38.4	36.5	36.5
with difficulty	21.2	28.5	29.2	27.2	24.6	25.9
Unable to afford an unexpected financial expenditure	59.3	49.1	43.3	38.5[1)]	36.0	38.2
below 60% of median	72.8	71.3	75.8	67.2[1)]	68.3	71.8
above 60% of median	57.2	46.1	39.4	35.0[1)]	32.1	33.6

Source: Eurostat.
Note: Methodology changes.

The medium-term risks relate mainly to:
- uncertainty about the future financial position of non-financial corporations;
- persisting budgetary strains of indebted households;
- weak consumer demand amid stagnation in household income.

Persisting medium-term risks in the non-financial corporate and household sectors

Profits in the non-financial corporate sector continued to pick up in the first half 2011, particularly among export-oriented firms. The profits of firms dependent on the domestic economy may, however, be adversely affected by persisting sluggishness in domestic demand.

Although household indebtedness rose further, the balance sheet of the household sector did not represent a source of risks to financial stability. The labour market situation and unfavourable trends in household income may weigh down on the sector's balance sheet. The return of a rising savings ratio implies that households are taking a cautious approach to new investment, while the persisting trend of low income growth will probably further dampen consumer demand. Many borrowers have taken advantage of improved lending conditions to refinance old loans with new loans that have a shorter interest rate fixation period, and therefore their debt servicing costs have not risen.

CHAPTER 3

FINANCIAL SECTOR DEVELOPMENTS AND RISKS

3

3 FINANCIAL SECTOR DEVELOPMENTS AND RISKS

The generally positive situation in the Slovak economy and relatively accommodative monetary conditions continued in the first half of 2011, and this was reflected in a further improvement in the financial position of the banking sector. Profitability in the rest of the financial sector also picked up, although in the majority of sectors it remained below its pre-crisis levels (Chart 32). In the short term and medium term, the deteriorating situation in the global environment will adversely affect key actors in the domestic economy, resulting also in upward risks in the Slovak financial sector. However, the results of stress testing indicate that the banking sector is resilient to such a scenario.

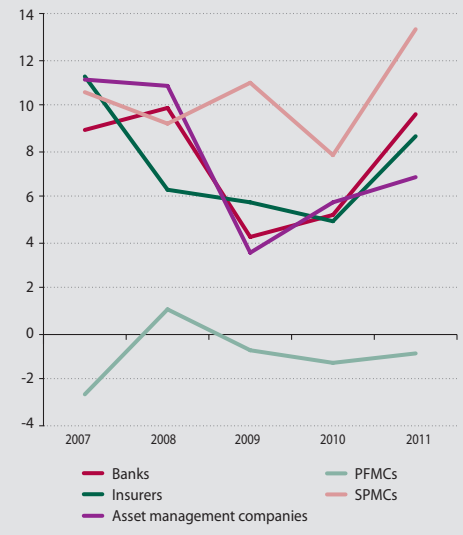
3.1 BANKING SECTOR PERFORMANCE

The share of household lending in total bank lending increased further in the first half of 2011. The highest growth was in housing loans, which to a large extent were still being taken out to refinance old loans under more favourable lending conditions. The amount of lending to new customers increased quite markedly, with the lending growth driven not only by low interest rates, but also by a decline in residential property prices.

The growth trend in bank lending to households continued in the first half of 2011. It was evident mostly in the category of housing loans, and at some banks also in consumer credit (Chart 33). A large proportion of the new housing loans were taken out in order to refinance old loans under more favourable conditions, as evidenced by the low increase in the stock of housing loans in comparison with the growth in new loans (Chart 34). This is a positive (even if only temporary) development in terms of financial stability,[15] since it means that households are reducing their debt servicing costs (Chart 35). The proportion of loans that have a longer initial rate fixation period (IFRP) has been rising since 2010, thereby contributing to a reduction in the household sector's still high sensitivity to any increase in interest rates.

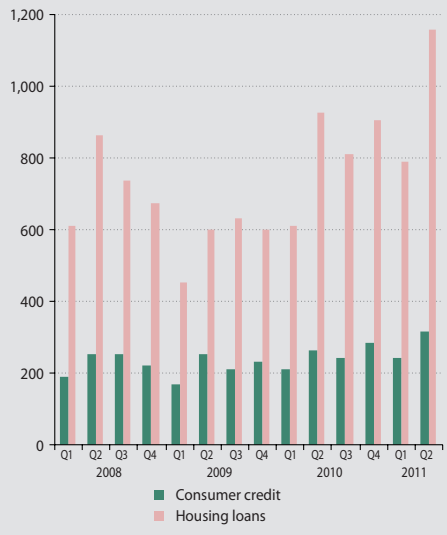
In the first quarter of 2011, interest rates on new housing loans either stagnated or rose, as banks passed on increases in market rates. In the second quarter, rates on loans with a longer IFRP more or less stagnated, even though market

Chart 32 Average values of return on equity broken down by segment (%)



Source: NBS.

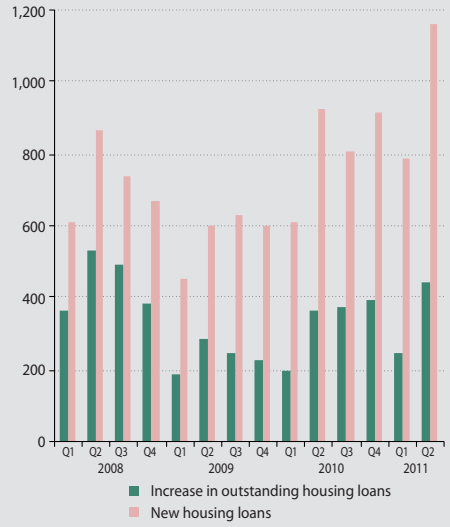
Chart 33 New loans to households (EUR millions)



Source: NBS.

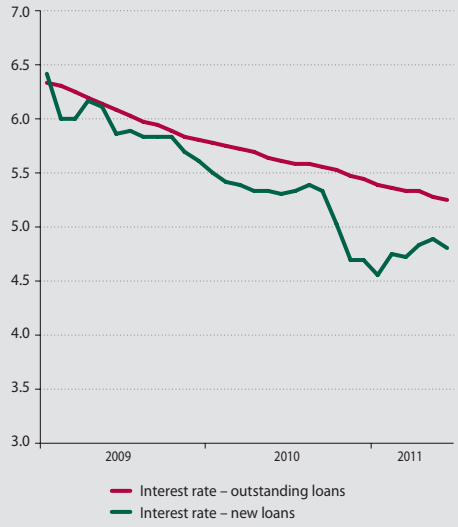
15 The favourable difference between the level of interest rates on new loans and on outstanding loans will most probably decline in time, thereby making the refinancing of old loans a less advantageous option.

Chart 34 Increase in outstanding housing loans compared with the increase in new housing loans (EUR millions)



Source: NBS.

Chart 35 Interest rates on new housing loan and on outstanding housing loans (%)



Source: NBS.

rates continue to go up. This is explained by the intensification in competition in the banking sector, with certain banks looking to increase their share of the lending market.

As lending rates declined and price conditions in the residential property market remained favourable, there was also an increase in housing loans to new customers.

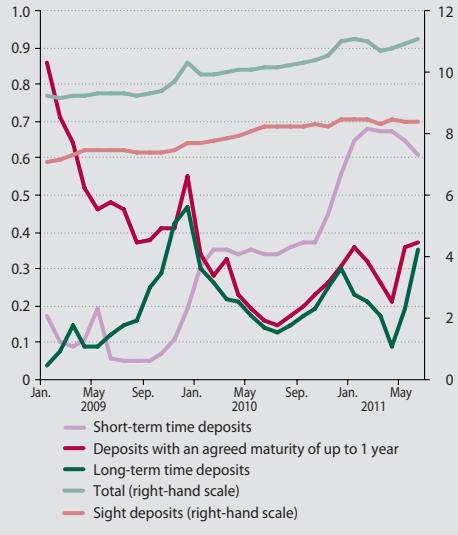
The share of household deposits in the banking sector's total liabilities also increased. The volume of household deposits, especially time deposits, rose during the first half of 2011. The raising of deposit rates in response to stronger competition contributed to this development.

The long-term growth trend in the overall amount of household deposits in the banking sector continued in the first half of 2011 (Chart 37). Interest rates on time deposits, after coming down in the first quarter of 2011, began rising again in the second quarter. This turnaround revived household demand for these products, which increased as a share of the overall stock of deposits.

Competition between banks for primary deposits intensified in the first half of 2011. In response to the fact that certain smaller and medium-sized banks had been raising deposit rates significantly since the end of 2009, large banks hiked interest rates on time deposits (Chart 37) and in this way immediately increased their share of new deposits.

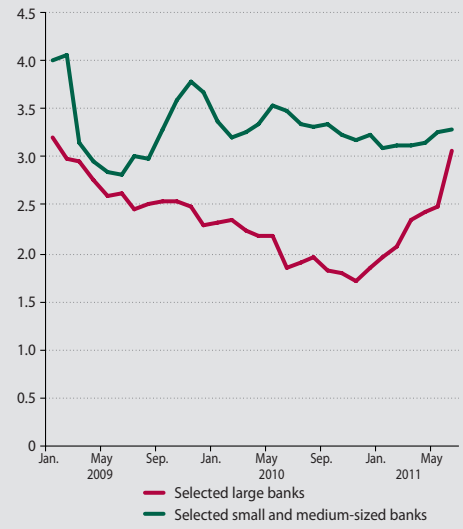
The rise in the stock of retail deposits in comparison with the second half of 2010 contributed to the stagnation in the banking sector's

Chart 36 New time deposits of households (EUR billions)



Source: NBS.

Chart 37 Average interest rates on deposits with an agreed maturity of between 1 and 2 years (%)



Source: NBS.

net interest income in the first half of 2011 (this income had recorded a more pronounced rise in the second half of 2010). On the other hand, the stable growth of the domestic banking sector is supported by the fact that banks' liabilities have a strong base of domestic funds in the form of household deposits and a rising share of longer-term time deposits.

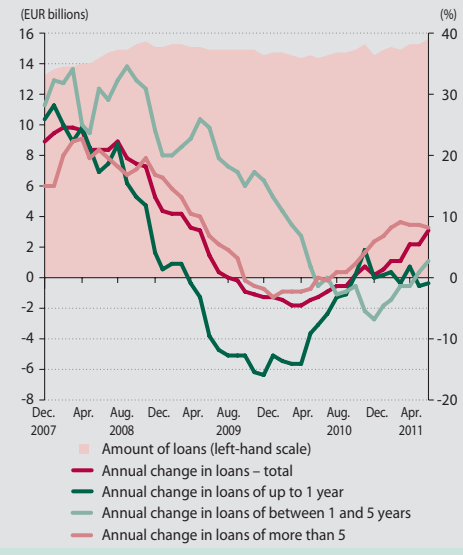
Lending to enterprises in the first half of 2011 was weighed down both by the still weak corporate demand for loans and by banks remaining cautious about lending to enterprises. The annual rate of change in the total stock of loans increased in the first half of 2011 after a long period of decline, but this growth occurred only in certain banks and only in lending to certain sectors. Corporate deposits at banks remained flat.

The weak demand among domestic firms for loans in Slovakia mirrors the situation in most other euro area countries. This demand is being dampened mainly by persistently weak corporate sales (in comparison with pre-crisis levels), by high uncertainty about the future economic situation and, to a certain extent, by the ongoing process of deleveraging.

Banks continued to behave cautiously in the first half of 2011 by keeping credit standards tight. The main reason for this approach was the uncertain outlook for developments in the real economy.

In year-on-year terms, overall lending to enterprises increased by 7.6% in the first six months of the year, after a relatively long period of decline (Chart 38). This growth, however, was not spread across all sectors (Chart 39) or lending banks, and it should therefore be treated with caution.

Chart 38 Loans to enterprises (EUR billions)



Source: NBS.

Chart 39 Loans to enterprises in selected sectors – annual changes in EUR billions

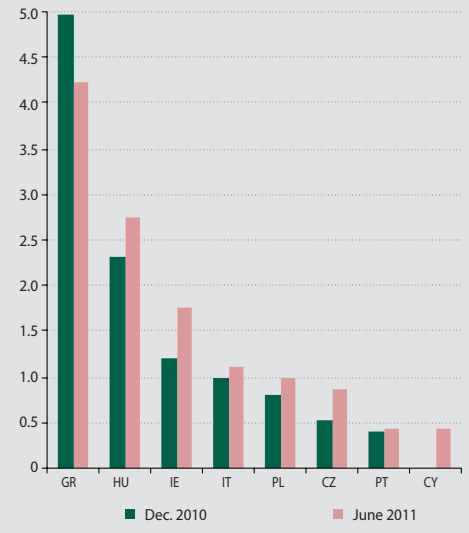
Source: NBS.

The weak growth both in loans to resident enterprises and in their deposits is reducing the share of corporate business in banks' credit and deposit portfolios (i.e. on both the asset and liability side), mainly to the benefit of the household sector's share.

Banks' investments in government bonds issued by certain countries increased moderately in the first half of 2011, while their investments in Greek sovereign debt declined. Most of the bonds issued by banks were mortgage bonds.

Slovak government bonds made up 80% of the securities held by resident banks as at 30 June 2011. Banks are buying government bonds mainly for the held-to-maturity (HTM) portfolio and the available-for-sale (AFS) portfolio, i.e. as a longer-term investment. The amount of banks' investments in foreign government bonds underwent a relatively marked change, particularly in the first quarter of 2011 – there was a rise in investments in bonds issued by certain countries under stress, but a decline in investments in Greek sovereign debt, due to the maturing of one issue and sell-offs (Chart 40). The downward trend in investments in bonds issued by domestic banks continued during the first half of 2011.

Chart 40 Banks' investments in bonds issued by non-residents (%)



Source: NBS.
Note: Vertical axis data refer to the share of non-resident bonds in the total amount of bonds held in bank HTM and AFS portfolios.

Mortgage bonds made up 90% of the bonds issued by banks in the first half of year. Five banks issued mortgage bonds during this period, in an aggregate amount of €368.5 million. These issues were for the most part prompted by the approaching maturity of old issues, although there was an increase in mortgage bonds as a share of total bank bonds outstanding. Only two banks issued bonds other than mortgage bonds during the period under review, and the total par value of these issues came to €24 million.

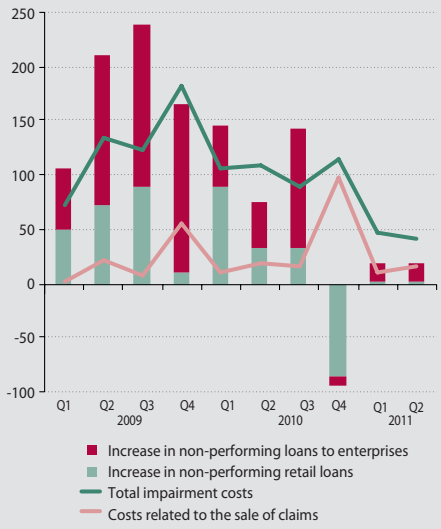
In the area of interbank operations, the most significant changes concerned the discontinuance of certain non-standard ECB operations. The interbank operations that were the largest in amount and the most volatile continued to be operations with foreign banks, which points to a limited channel of financial contagion trough relations among domestic banks.

The maturing of the ECB's 12-month longer-term refinancing operations (LTROs) in September and 3-month LTROs in December brought about the largest change in interbank assets and liabilities. One bank alone accounted for more than 80% of the drop in funding from the ECB reported by the whole banking sector.

Intra-group transactions accounted for a substantial (around 80%) share of interbank transactions on both the asset and liability sides, meaning that the amount of transactions between banks in the domestic market was low. Therefore, the systemic risk that the collapse of one or more resident banks will have a domino effect is limited. Although the amount of loans and deposits of foreign banks moved almost in parallel during the first six months, the banks responsible for this movement on the asset side were different from those on the liability side.

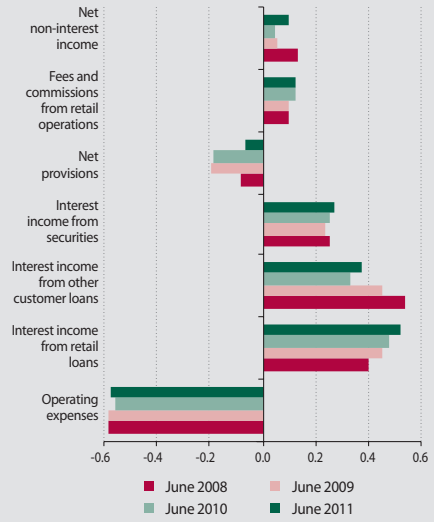
The performance of the banking sector in the first half of 2011 had a positive effect on financial stability. The sector's net profit grew sharply in year-on-year terms, due mainly to a decline in costs of non-performing loans that stemmed from the generally favourable performance of the domestic economy during the period under review. Another factor behind the higher profit was interest income, which rose amid an increase in lending to households.

Chart 41 Loan impairment costs and changes in the amount of non-performing loans (EUR millions)



Source: NBS.

Chart 42 Main components of the banking sector's profitability (EUR billions)



Source: NBS.

The net profit of the banking sector for the first half of 2011 amounted to €431 million, representing a year-on-year increase of 79%. Even excluding one-time effects (extraordinary income from equity securities and income from the sale of a subsidiary), the profit still grew by a relatively substantial 53%. The main contribution to the profit was a decline in provisioning costs, which plummeted by 56% due to a markedly slower rise in non-performing loans (Chart 41). The profit growth was also driven by a year-on-year increase in net interest income from retail transactions. In general, and especially at a time of elevated risks, the ability of banks to generate profit supports the stability of the domestic banking sector, provided that banks use their earnings primarily to strengthen their capital position.

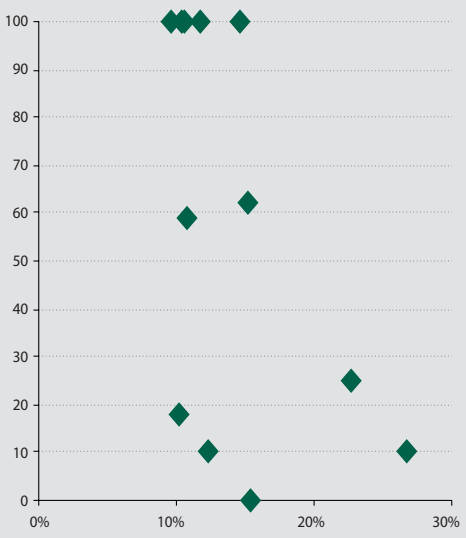
As operating expenses slowly increased in the first half of 2011 (Chart 42) and operating income increased, the banking sector's cost-to-income ratio continued to improve, falling to below 50% as at the end of the first half of 2011.

3.2 RISKS IN THE BANKING SECTOR AND THEIR CAPITAL COVERAGE

Although the banking sector retained around 50% of its 2010 earnings as capital, the effect on its capital adequacy ratio (CAR) in the first half of 2011 was largely cancelled out by the introduction of two new capital reducing items.

The capital adequacy ratio of the banking sector was 12.7% as at 30 June 2011, compared to 12.6%

Chart 43 Retained earnings as a share of total earnings and the current capital adequacy ratio (%)



Source: NBS.
Note: The CAR as at 30 June 2011 is plotted on the horizontal axis. Retained earnings as a share of earnings for 2010 are plotted on the vertical axis. The (three) banks that made a loss in 2010 are not included in the Chart.

at the end of 2010. The lowest CAR of an individual bank was the 9.7% reported by one small bank. As in previous years, banks retained, on average, around a half of the previous year's earnings as capital (Chart 43). These retained earnings totalled €269 million. The increase in the overall capital of the banking sector was also to a small extent due to a 3% rise in subordinated debt.

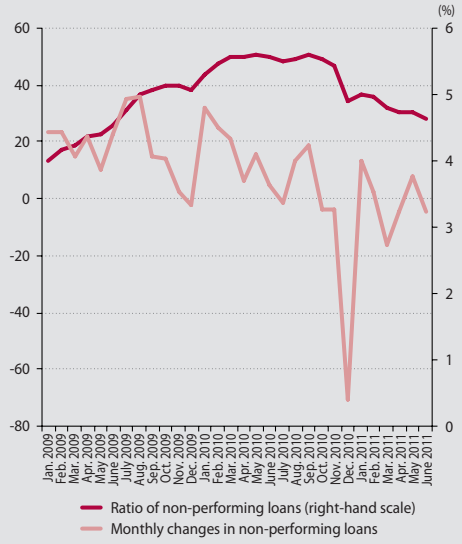
The introduction of two new capital reducing items and a rise in risk-weighted assets had a negative effect on capital adequacy,[16] virtually cancelling out the capital increase from retained earnings.[17] Since the medium-term risks to the banking sector are expected to rise, the sector should use a greater proportion of its exceptional profitability to strengthen its capital buffers (the Slovak, Czech and Polish banking sectors are among the most profitable in the EU).

Household credit risk

Household credit risk to the banking sector declined during the first half of 2011. Household debt servicing was made easier by low interest rates and short initial rate fixation periods. In the long term, however, the prevalence of short IFRPs on housing loans will increase the household credit risk to banks.

The debt-servicing ability of households improved somewhat in the first half of 2011. As a result, the ratio of non-performing household loans declined in most banks (especially the larger ones) and across almost all household loan categories (Chart 44, Table 3).[18] The household sector's debt burden was lightened mainly by low interest rates and short-initial rate fixation periods, which enabled households to refinance old loans under more advantageous conditions, i.e. to reduce their debt servicing costs.

Chart 44 Non-performing loans to households (EUR millions)



Source: NBS.
Note: Right-hand scale: ratio of non-performing household loans to total household loans.

The vast majority of housing loans to households have short initial rate fixation periods, meaning that banks have shifted part of the market risk of interest rate movements to households. They are still, however, exposed to household credit risk, which will increase if interest rates rise. Evidence for the sector's sensitivity to such a scenario is provided by the results of stress testing (under the scenario "Cost-Push Inflation"), which are analysed in Part 3.8.

The increasing rate of unemployment among higher-income categories may have an upward effect on household credit risk. Although employment trends in the first quarter of 2011 were positive, the elevated risks in the global environment are not favourable for the domestic labour market.

Table 3 Ratios of non-performing household loans (%)

	June 2010	December 2010	June 2011
Current account overdrafts	9.70	9.10	8.81
Consumer credits	12.77	10.08	9.89
Mortgage loans	3.14	2.79	2.76
Home savings loans	1.61	1.57	1.58
Intermediate loans	6.07	6.20	6.45
Other housing loans	3.59	3.24	2.75

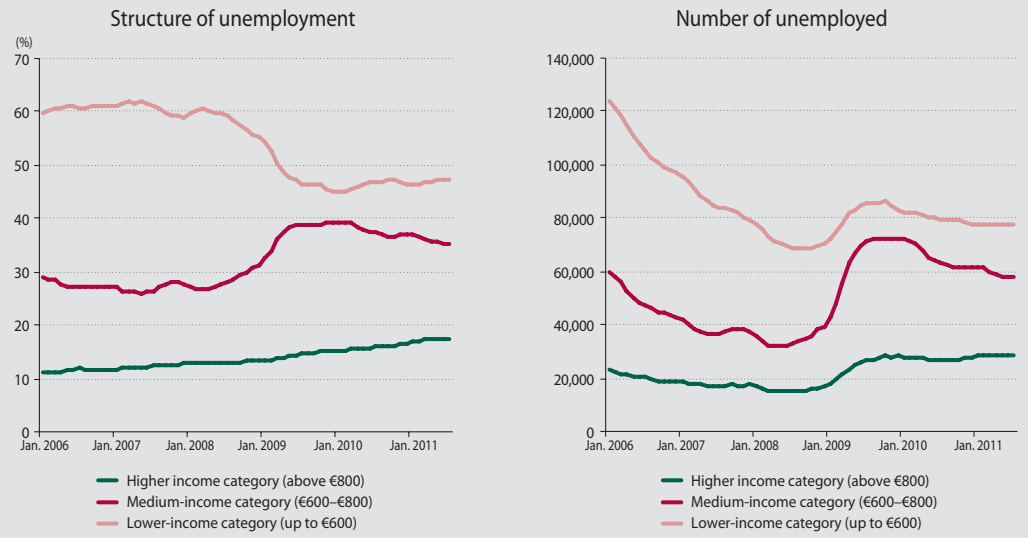
Source: NBS.
Note: The figures in each category represent the ratio of non-performing loans to the total stock of loans in that category.

16 *The first deductible item, in effect since 1 January 2011, is the difference between the loan loss provisions and expected loss of those banks that use the standardised approach for calculating the credit risk capital requirement of their portfolio, or part thereof; it applies where the expected loss is higher than the provision, and its contribution to the overall CAR stood at -0.2 percentage point. The second deductible item, introduced as from 31 May 2011, is the write-edown of debt securities recorded in the available-for-sale portfolio; its contribution to CAR represented - 0.3 percentage point.*

17 *A further downward contribution to the CAR came from the raising of the own funds requirement as from the beginning of 2011, by €14 million or (0.5%).*

18 *Several small and medium-sized banks recorded a deterioration in the quality of their credit portfolio. The highest delinquency rates were on loans provided in 2008, which are among the most risky in retail loan portfolios.*

Chart 45 Unemployment by income category



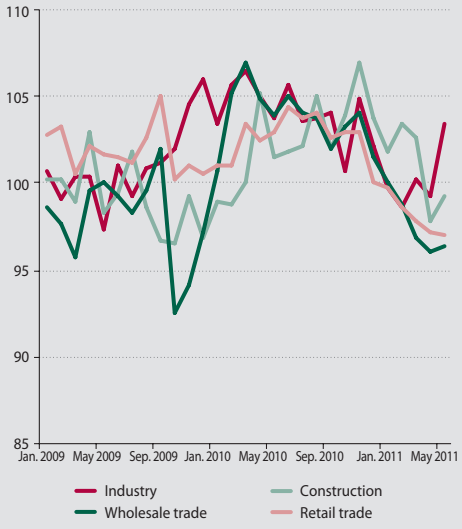
Source: Central Office of Labour, Social Affairs and Family.
Notes: The left-hand chart shows the share of different income categories in the total number of registered unemployed (categorised according to the official employment classification). The right-hand chart shows the number of unemployed.

Before the crisis, unemployed people who had previously worked in a lower-income job constituted by far the highest share of the registered unemployed. Since the crisis, however, a rising share of the registered unemployed consists of people who previously had a medium- or high-income job (Chart 45). Therefore, unemployment is rising among medium- and higher-income households, the groups that account for the vast majority of total household liabilities to banks. Furthermore, the rate of unemployment among lower-income categories is now returning to its pre-crisis levels, whereas the rate among medium- and higher-income categories is higher than it was before the crisis broke out (Chart 45). This implies that a large proportion of borrowing households remain in a weak financial position and find it difficult to service their bank loans.

Although employment in most sectors increased during the first quarter of 2011, overall employment remains below its pre-crisis level. The further developments in the labour market will significantly affect the capacity of households to service their bank debts. In the light of the deterioration in the short- and medium-term outlooks for the world economy, the risks to the situation in the domestic market are more on the downside.

Looking ahead, there may be further upward pressure on household credit risk if the relatively higher rate of inflation persists and interests rates increase. Although the inflationary risks are more on the downside, any undershooting of economic output projections could have an adverse effect on real wages. Potential interest

Chart 46 Index of real wages in selected business sectors (index, same period a year earlier = 100)



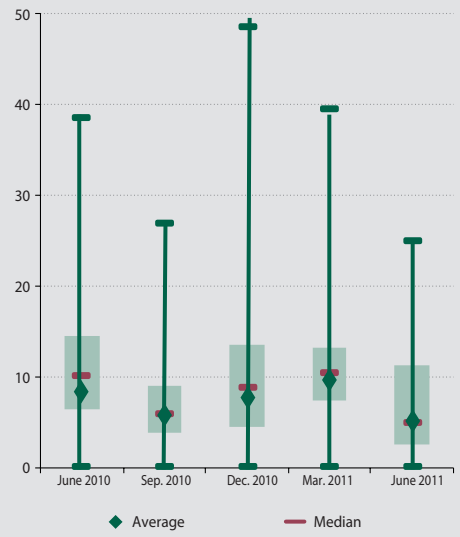
Source: NBS.

rate hikes represent a significant upside factor in household credit risk.

Rising inflation in the first half of 2011 increased household credit risk, mainly through its downward effect on real household incomes in most sectors (Chart 46). The inflation rate was higher than the returns on most household financial assets, but within the period under review it did not cause any significant rise in the stock of non-performing loans. In the medium-term horizon (2012 and 2013), NBS forecasts a deceleration in inflation with the risks to the forecast on the downside. However, the ultimate effect on household real incomes remains a question, given the downward risks to the production and income forecasts.

Households remain highly sensitive to any movement in interest rates and any hike in rates would push up debt-servicing costs. In that case, non-performing loans would increase, particular among loans to low-income households. Given the difficult situation in the euro area banking sector, the risk is posed by a substantial rise in market rates and its pass-through to retail rates cannot be ruled out. A positive aspect is that low-income groups have the smallest share in the total amount of housing loans (approximately 10%).

Chart 47 Loans at risk (%)



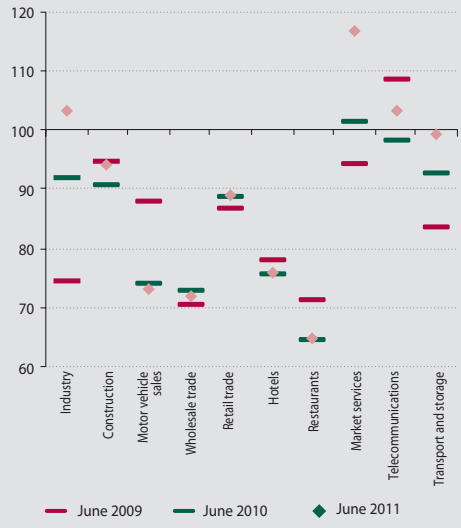
Source: NBS.
Note: The Chart shows the maximum and minimum values, the upper and lower quartiles, and the median and average values. The indicator represents the share of total corporate loans that comprises loans to enterprises which in the given quarter reported both a net loss and a drop in sales of more than 30%. The reference period is from July 2007 to June 2008.

CREDIT RISK IN THE NON-FINANCIAL CORPORATIONS SECTOR

Most segments of the business sector recorded positive results in the first half of 2011. However, uncertainty about the further developments persisted and this uncertainty escalated towards the end of the period under review. The stock of non-performing loans remained high, although as a share of total loans to enterprises, they declined moderately.

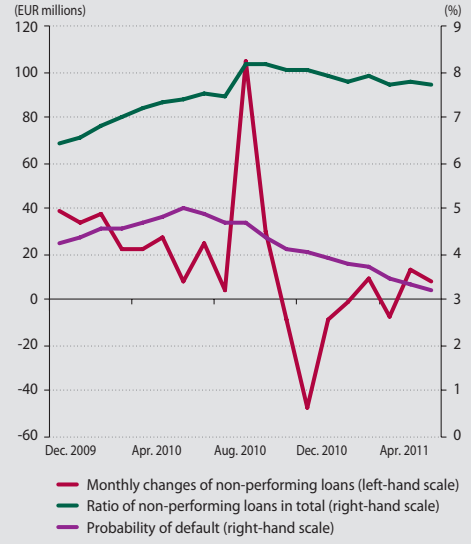
The fact that most segments continued to report growing sales in the first half 2011 was positive in terms of the ability of non-financial corporations to service their bank loans. The improved performance of the business sector was reflected in the loans at risk indicator, which declined in the majority of banks (Chart 47). But although sales grew in many segments, they remained below pre-crisis levels (Chart 48). The low level of sales is increasing the sensitivity of enterprises to any future economic shocks or interest rate hikes. In this context, it is positive that over the past two years the corporate sector has been deleveraging, in conjunction with the strengthening of its capital position.

Chart 48 Sales levels in selected business sectors (index: June 2008=100%)



Source: SO SR, NBS.

Chart 49 Quality of the corporate credit portfolio



Source: NBS.

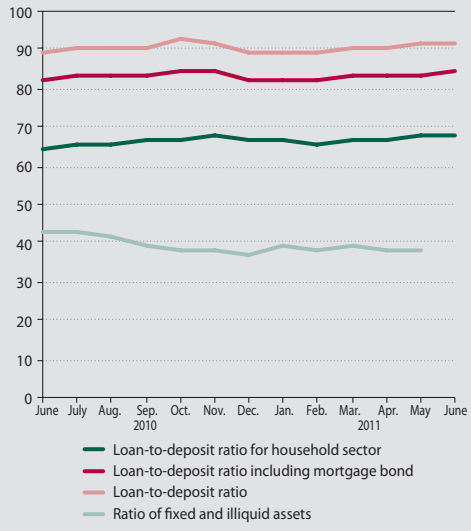
According to business tendency indicators as at the mid of 2011, the economic situation was expected to deteriorate. These indicators reflected concerns about the slackening of both domestic and external demand. The rise in such concerns stemmed from the high degree of interconnection between the performance of domestic enterprises and foreign markets.

Although the ratio of non-performing loans declined moderately in the first half of 2011, it remains far above pre-crisis levels (Chart 49). The modest slowdown in the delinquency rate is a consequence of increased activity in the business sector, low interest rates, and the fact that corporate credit portfolios have become somewhat more robust since the bankruptcies of several weaker firms back in 2009. The amount of non-performing loans to enterprises remained at a high level in the first half of 2011. The highest increase in non-performing loans was recorded among loans to the selected market services sector and trade sector. Banks' aggregate credit exposures to both sectors are significant. Another major source of credit risk to banks is the commercial real estate sector, but the delinquency rate on loans to this sector (9%) is not the highest, owing to the size and concentration of such loans and the peculiarities of this market (very low liquidity and weak transparency).

Liquidity risk

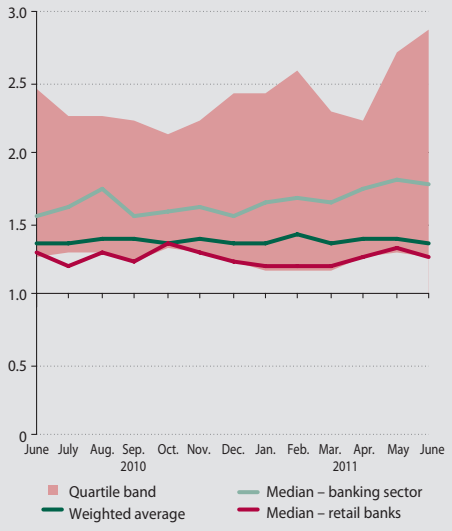
The amount of funding that banks obtained from domestic sources continued to be higher than the stock of loans in the sector; this is positive from the view of long-term stability. Short-term liquidity in the sector did not change significantly.

Chart 50 Loan-to-deposit ratio (%)



Source: NBS.
Note: The lower the indicator value, the greater the extent to which loans are financed from customer deposits, and therefore the dependence of banks on more volatile wholesale funding is less.

Chart 51 Liquid asset ratio



Source: NBS.
Note: The ratio is defined as the ratio of liquid assets to volatile liabilities over a horizon of one month. Its level should not fall below 1.

The growth in the corporate credit portfolio resulted in a higher increase in the loan-to-deposit ratio in the first half of 2011 (Chart 50). The long-running rising trend in the indicator is unfavourable as regards conditions for stability in the banking sector, although its current value of less than 100% implies that the sector as a whole has a sound long-term liquidity position. The ability of banks to face a one-month liquidity stress improved during the first half of 2011, due in large part to branches of foreign banks (Chart 51).[19]

Market risks

The exposure of the banking sector as a whole to foreign-exchange and equity risk was low. The sector's exposure to interest rate risk did not change significantly, either.

Exposure to foreign-exchange risk remained low throughout the first half of 2011. In most banks, the net foreign-exchange position as at the last day of each month did not exceed 10% of own funds.

The exposure of the banking sector as a whole to equity risk was also relatively low. Investments in equities and mutual fund shares/units stand at only 3% of own funds. The exposure to this risk is concentrated in a few smaller banks.

The average duration of the banking sector's balance sheet, including interest-rate derivatives remained almost unchanged at one year. The risk that financial instruments held in the trading book will be written down due to a rise in interest rates increased moderately, but it remains low. Debt securities held by banks in their available-for-sale portfolios and amounting to 9% of the banking sector's balance sheet total were revalued at fair value. As from 31 May 2011, any writedowns of such securities are deducted from capital. The risk of heavy losses is, however, relatively small, since the average duration of these securities is only 2.8 years. The banking sector's loss on a parallel rise in interest rates of 1 percentage point would stand at 0.26% of its total assets.

The banking sector's investments in lower-rated bonds of countries under stress remained modest; however, some banks face a more pronounced risk of equity impairment if such bonds are written down.

The banking sector's overall direct exposure, through debt securities, to lower-rated countries remained relatively low in the first half of 2011 (at 2.4% of total assets), and it was heavily concentrated in a few banks. Exposures to specific countries did not change significantly (Table 4). The vast majority (96%) of these debt securities were recorded in the banking book and, of that group, a relatively large proportion (32%) were held in the AFS portfolio. Since 31 May 2011, however, writedowns of debt securities in the AFS portfolio have, for prudential reasons, been classed as items to be deducted from equity capital. As a result, the risk of equity impairment is relatively large in certain banks.

Table 4 Investments in debt securities of selected countries as a share of total assets (%)

		Greece	Hungary	Ireland	Italy	Spain	Portugal	Cyprus
Banks	XII.10	1.1	0.6	0.2	0.2	0.1	0.1	
	VI.11	0.9	0.6	0.3	0.3	0.1	0.1	0.1
SPMC funds	XII.10	0.1	0.9	0.6	0.8	0.8		
	VI.11	0.1	0.6	0.2	0.9	1.0		
PFMC funds	XII.10		0.3	2.1	1.9		0.4	
	VI.11		0.9	0.1	0.1	0.9		0.2
Mutual funds	XII.10	0.2	1.4	0.3	0.5	0.1	0.1	
	VI.11	0.1	1.5	0.3	0.4	0.1		0.1
Insurance companies (excl. unit-linked insurance)	XII.10	0.1	0.1	0.2	2.6	0.2		
	VI.11	0.1	0.2	0.2	2.5		0.1	0.2
Unit-linked	XII.10			0.3				
	VI.11			0.3				

Source: NBS.
Note: An empty cell means that that missing value is zero or negligible.

19 Short-term liquidity is monitored using the liquid asset ratio. This is defined as the ratio of liquid assets to volatile liabilities over a horizon of one month. Its level should not fall below 100%.

The mounting debt crisis in several euro area countries is the most significant source of market risks to the domestic financial sector, especially to individual institutions. The systemic nature of the crisis meant that a further escalation in financial market strains could result in the depreciation of other assets that have so far been relatively safe.

The adverse impact of the sovereign debt crisis on different sectors of the financial market need not necessarily be confined to investments in lower-rates bonds of countries under stress (Table 4). Such investments have a low share in the balance-sheets of individual sectors, but they are highly concentrated in certain institutions, which therefore face substantial losses (i.e. portfolio impairment) if the respective sovereign credit risks materialise. There is a risk, particularly in the absence of an orderly solution to the crisis of financially weak euro area countries, that credit spreads on more solid sovereign debt (issued by higher-rated countries, including Slovakia) will also rise substantially. Developments since the collapse of Lehman Brothers in 2008 have made it possible to envisage what may happen in markets in other financial assets. In such case, the negative direct impact on the domestic banking sector and other sectors of the financial market would be far more dependent on the composition of portfolios and the level of exposures (Table 5).

3.3 THE INSURANCE SECTOR

The profitability of insurance companies increased sharply year-on-year across the insurance market, mainly due to an improved loss ratio in the non-life insurance sector and a lower deficit provision in traditional life insurance.

Insurance companies reported total profits of €112 million for the first half of 2011, which represented a rise of 71% year-on-year and a higher figure than for the same period in any of the previous five years (Table 6). The profitability was driven mainly by the technical result, which, at €48 million, was in positive territory for the first time since 2008. An upturn was observed in life insurance, non-life insurance and active reinsurance with all three sectors reporting an overall profit. The main reasons for the higher profits were that the loss ratio in the property insurance line declined (to 39.30%) and the deficit provision in life insurance decreased (by €22 million year-on-year). The increase in the technical result exceeded the decline in the financial result, which fell by 28% year-on-year. Returns on bank and corporate bonds, equities, and mutual fund shares/units recorded the most pronounced drop. A total of six smaller insurance companies made a loss, although their aggregate loss for the period fell by 45% year-on-year.

Table 5 Share of equity, foreign-exchange and interest-rate positions in different sectors of the financial market

		Banks	Insurers	PFMC funds	SPMC funds	Mutual funds	Unit-linked assets
Equities and mutual fund shares/units (%)	XII.10	0.2	2.7	0.1	20.3	19.1	81.2
	VI.11	0.3	2.6	0.0	22.1	19.3	82.0
Foreign exchange positions (%)	XII.10	0.5	1.5	0.1	12.2	11.2	13.9
	VI.11	0.2	2.2	0.1	10.1	12.5	21.1
Debt securities (%)	XII.10	26.5	68.2	68.5	66.0	46.3	17.4
	VI.11	25.2	69.8	70.1	58.0	46.3	17.1
Duration of debt securities (years)	XII.10	3.0	6.1	0.4	3.2	1.2	5.5
	VI.11	3.3	6.0	0.4	2.6	1.3	5.0
Duration of entire portfolio (years)	XII.10	.	5.7	0.4	2.1	0.6	1.0
	VI.11	.	.	0.3	1.5	.	.
Residual maturity of debt securities (years)	XII.10	4.1	8.2	0.8	4.2	2.1	5.7
	VI.11	4.3	8.0	1.1	3.9	2.2	5.3

Source: NBS.
Notes: Values are given as a percentage share of total assets (or NAV) and they represent the asset-weighted average for the given group of institutions. Durations and residual maturities are stated in years.

Table 6 Overall profitability of the insurance sector and breakdown of insurance sector profitability (%)

ROE	1H 2007	1H 2008	1H 2009	1H 2010	1H 2011
Maximum	16.95	69.22	14.63	10.49	13.43
Third quartile	8.89	7.36	6.41	5.99	8.47
Median	3.84	3.89	2.29	2.55	6.12
First quartile	0.48	-2.74	-4.75	-3.56	-0.34
Minimum	-5.34	-33.06	-31.37	-41.26	-15.93
Weighted average	11.23	7.73	5.78	4.92	8.69
Annual rate of change in profitability	11.43	-27.37	-12.01	-6.67	71.09

Source: NBS.

The solvency of insurance companies was at an adequate level in 2010 and remained largely unchanged from 2009.[20]

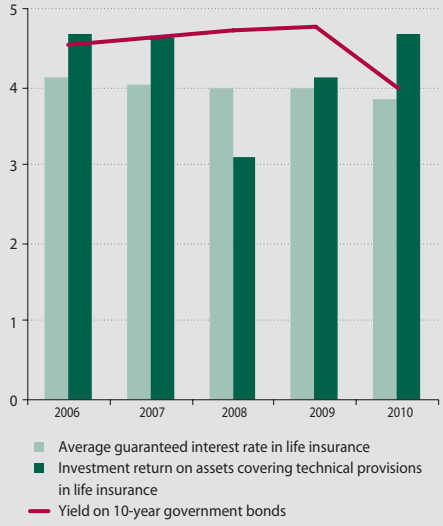
As at the end of 2010, all insurance companies satisfied the requirement that their available solvency margin (own funds) should be higher than the required solvency margin and the value of the guarantee fund. The available solvency margin increased by only 0.7% year-on-year, and the average solvency margin fell moderately, to 3.55.[21]

Insurance company assets are exposed mainly to interest rate risk, and there is a persisting risk of low interest rates. Counterparty risk in reinsurance is low. Any further escalation of the crisis will adversely affect the performance of insurance companies.

One of the main risks in the life insurance sector continues to be the risk of persisting low interest rates. In such an environment, it is difficult for insurance companies to generate returns that would cover the interest rates guaranteed in insurance contracts. Consequently, insurance companies may be forced to invest in more risky assets and to increase their exposure to other market risks. The average guaranteed interest rate fell slightly towards the end of 2010, to 3.85% per annum. In every year except 2008, insurance companies have managed to achieve an investment return that is sufficient to cover this high rate and there has been no move towards investing in higher-risk assets (Chart 52).

Looking at the assets of insurance companies that cover technical provisions (except for unit-linked products), debt securities account for 70% of the total, and the majority of them are securities revalued at fair value; thus insurance companies are exposed mainly to the risk of interest rate movements. The impact that eventual changes in the value of insurers' assets will have on the financial position of insurers is mitigated by the parallel writing down of liabilities. The debt securities held by insurance companies which are not covered by either insurance provisions or the guarantee fund have a relatively low value (at 1.8% of assets).

Chart 52 The guaranteed interest rate compared with the actual return (%)



Source: NBS.

For large insurance losses, an insurance company may expect a payout from a reinsurer. In this regard, however, the insurer is exposed to counterparty risk, i.e. the risk that the reinsurer is not able to make the payout. The number of reinsurers is small in the life insurance sector, only

20 Insurance companies report their solvency data to Národná banka Slovenska at the end of each year. The evaluation of the solvency situation in therefore based on audited data as at 31 December 2010.

21 The solvency margin represents the ratio of the available solvency margin to either the required solvency margin or the guarantee fund, whichever is higher.

between 1 and 3 for each insurance company, and greater in the non-life insurance sector, between 1 and 6 for small insurers and up to 50 for large insurers. For small insurers, reinsurance is provided mainly by parent companies or large reinsurers. The counterparty risk in reinsurance can be considered low.

Any escalation of the euro area financial crisis and consequent negative repercussions for the real economy could expose insurance companies to reduced demand for their products and an increase in surrenders and cancellations of insurance contracts. Although such a development would probably not be a direct cause of financial losses, given the high fines for policy surrenders and cancellations, it would disrupt the plans of insurers and affect their balance sheets and financial results.

3.4 THE COLLECTIVE INVESTMENT SECTOR

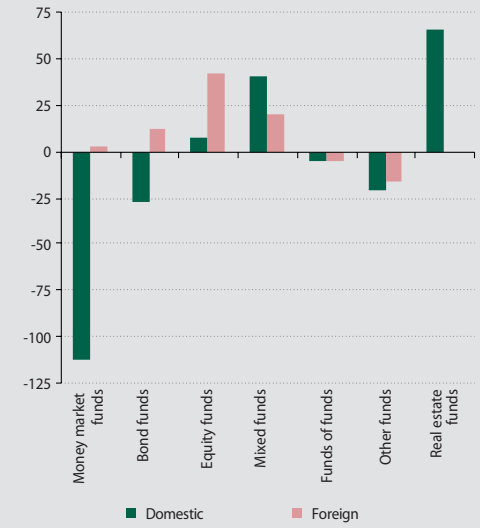
The net asset value (NAV) of collective investment funds stagnated during the first half of 2011. The distribution of assets across fund categories remains conservative. The year-on-year performance of all fund categories was positive.

The assets under management in the collective investment sector had a net value of €4.5 billion as at the end of June 2011, practically the same as their value at the end of 2010. The first six month saw the net value of assets managed by foreign mutual funds rise moderately and the net value managed by domestic mutual funds decline (Chart 53). The decline in the net asset value of domestic mutual funds during the period under review was largely attributable to the situation in money market funds (Chart 54). Their NAV declined due to redemptions by household investors, a trend that dated back to the second quarter of 2010.The probable explanation for the redemptions appears to have been an increase in bank deposit rates for the retail sector, which gave households an incentive to shift their savings from money market funds to time deposits at banks. The outflow from these funds may also, to a lesser extent, have reflected the fact that unit-holders who had a more conservative outlook were seeking to avoid losses related to financial market volatility during the first half of 2011.[22]

Chart 53 Net asset value of mutual funds marketed in Slovakia (EUR billions)

Source: NBS, SASS.

Chart 54 Changes in the amount of assets under management of different fund categories during the first half of 2011 (EUR millions)



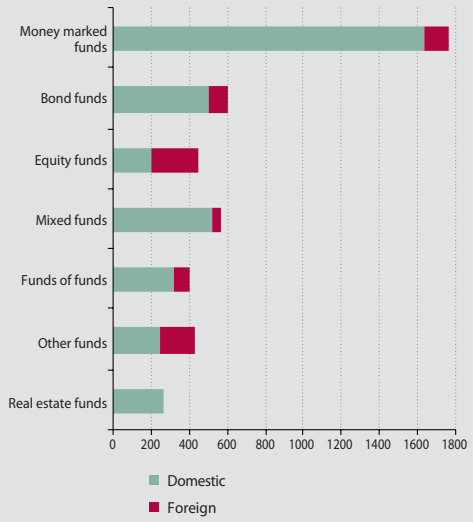
Source: NBS, SASS.

The distribution of assets across funds managed by collective investment undertakings in Slovakia remains relatively conservative (Chart 55).

Even though financial markets were somewhat volatile in first half of 2011, the average nominal annual rate of return in each fund cat-

22 The increase in financial market turbulences in July and August 2011 also brought about substantial changes in the collective investment sector. With redemptions rising and assets depreciating due to a slump in stock markets, the amount of assets under management in the sector fell by €350 million (or 8% of the NAV at the end of the first half of 2011). Almost all funds saw an increase in redemptions; the only exception was real estate funds, which made positive returns over these two months and recorded a 20% rise in NAV.

Chart 55 Net asset value by category of mutual fund as at 30 June 2011 (EUR million)



Source: NBS, SASS.

egory was positive as at 30 June 2011. Most of the losses that unit-holders in equity funds, funds of funds and mixed funds recorded in the first half of 2011 were recouped in the first half of 2011, as the three-year return on these funds reached the level of ±1 percentage point around zero.

The main adverse risk to the collective investment sector is a rise in equity market turbulences.

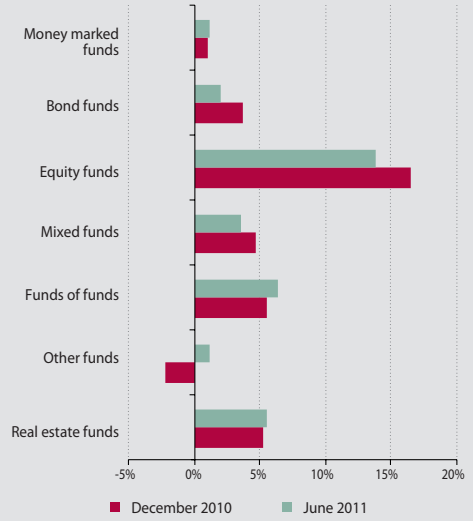
If the crisis in the euro area escalates, the collective investment sector will be adversely affected by developments in financial markets, especially stock markets. There would be outflows, particularly from those funds that have a larger equity component in their investment portfolio (see footnote 22). As for the risk of another rise in the credit spreads of countries under stress, its direct effect would not be significant since bonds issued by these countries make up only 2.5% of the overall net asset value (with Hungarian bonds accounting for the largest proportion of that share).

3.5 PILLAR II OF THE PENSION SAVING SYSTEM

The asset composition of PFMC funds in Pillar II of the pension system underwent a certain change in the first half of 2011, although they remained highly conservative. As regards bank deposit investments, they continued to be highly concentrated at a small number of banks.

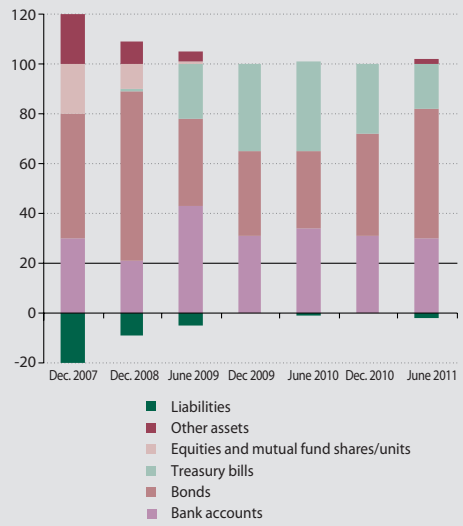
The overall net asset value in Pillar II of the pension system remained at €4.13 billion. The pro-

Chart 56 Average annual return on open-end mutual funds broken down by category (% p.a.)



Source: NBS, SASS.
Note: The average return weighted by net asset value.

Chart 57 Composition of funds' assets by principal types of investment (%)



Source: NBS.

portion of the overall NAV accounted for by conservative and balanced funds maintained its very gradual rising trend at the expense of the growth funds, which still retain their dominant position. The bond component of the portfolio increased at the expense of Treasury bills during the first half of 2011, but this did not alter the highly conservative composition of pension fund assets (Chart 57). The concentration of bank deposit investments of individual funds remained high, too. The risk of a collapse of any of the banks at which these deposits are held is considered minimal, but if such a risk did materialise, it would cause substantial losses to the funds affected. The asset structure of the three fund categories remained almost identical, both within individual pension fund management companies (PFMCs) and between them. Although PFMCs offer three types of fund by law, the fact is that savers do not have a real choice of risk-return profiles.[23]

The overall composition of the debt securities portfolio underwent a relatively marked change. Exposure to the EU periphery countries declined substantially.

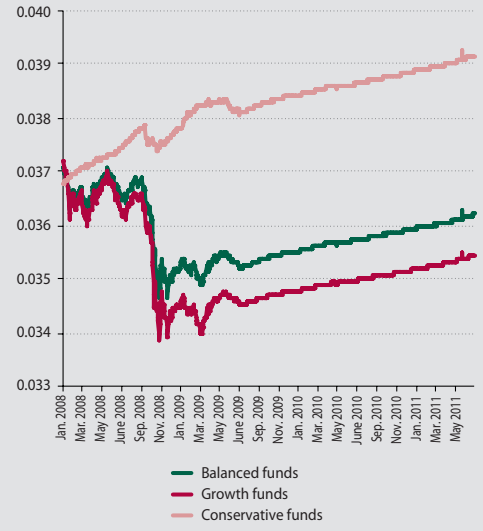
In connection with the declining amount of Treasury bills in fund assets, the share of government debt securities in the overall portfolio of debt securities fell from three-quarters to 61%. The amount of corporate bond holdings increased severalfold in the first half of 2011, which raised their share from almost 3% to 11%. This rebalancing of the debt securities portfolio may have reflected the efforts of PFMCs to procure higher-yielding instruments for their fund assets.

The aggregate exposure of Pillar II funds to bonds issued by countries most heavily affected by the sovereign crisis fell by more than one-half during the first six months of 2011. Investments in these securities accounted for 2.2% of the sector's net asset value at the end of the period under review.[24] The lowest-rated securities (issued by Greece, Portugal and Ireland) comprised only 0.1% of the NAV. Furthermore, the bonds in question had a short residual maturity (5 months on average). In general, PFMC funds have relatively low exposure to interest rate risk, and they invested in short-duration debt securities, most of which had relatively short maturity, too. The average agreed maturity of time deposits was also relatively short.

Annual rates of return on pension funds maintained steady progress.

The current values of the pension units in all funds maintained an unchanged linear trend (Chart 58). The almost zero volatility in the values of pension units stemmed from the absence of equity investments in the portfolios and the inclusion of debt instruments with a very short duration. This was reflected in the almost constant progress of the annual returns on pension funds (Table 7).

Chart 58 Current value of pension units by type of fund (EUR)



Source: NBS.
Note: Average weighted NAV of funds as at the month-end.

Table 7 Annual returns on pension funds as at 30 June 2011 (%)

	Minimum	Weighted average	Maximum
Conservative funds	0.8	1.3	2.1
Balanced funds	0.8	1.3	2.2
Growth funds	0.8	1.2	2.2

Source: NBS.

23 At the end of September 2011, the Slovak Parliament passed the Retirement Pension Saving Amendment Act, which introduces to Pillar II of the pension system significant changes that are designed to increase the risk-return differentiation between the original three types of pension fund. These funds will be replaced with equity, mixed and bond funds, as well as a passively managed index fund. Only in the case of bond funds do PFMCs remain obliged to cover any losses of the fund value out of their own assets. Each category of fund may own different types of financial instrument to a prescribed extent, in order to ensure that the different funds have different risk-return profiles.

24 In the funds of one PFMC, however, the exposure to lower-rated countries was relatively large and rose from 12% to 16%.

3.6 MACRO STRESS TESTING OF THE SLOVAK FINANCIAL SECTOR[25]

The resilience of the financial sector has increased since the end of 2009, mainly because the banking sector strengthened its capital buffers during the first half of 2010.

The majority of banks in the sector would be able to withstand even a substantial deterioration in the domestic and external economic environment. In each scenario, the additional capital required to maintain the capital adequacy ratio of each bank above the 8% minimum requirement constituted a relatively small proportion of the total own funds in the banking sector.

The banking sector as a whole showed strong resilience to adverse macroeconomic scenarios. As in previous analyses, some banks under certain scenarios would not satisfy the minimum capital requirement of 8%. In order to meet that threshold under the baseline scenario – based on the official NBS Medium-Term Forecast (MTF-2011Q2) – the banking sector required additional capital in the amount €41 million, or 0.9% of the sector's own funds as at the end of June 2011. Under the scenario entitled "Sovereign Crisis" (based on the risk of the unsustainability of public finances in

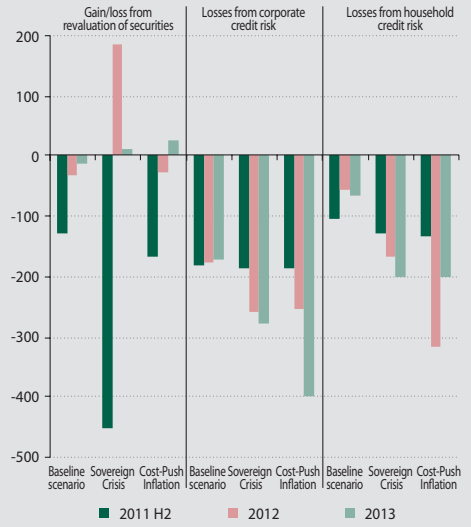
25 Stress-testing is a tool measuring the sensitivity of the financial sector to potential adverse developments. Such testing does not make a prediction about the future situation and it employs several assumptions and simplifications. The test results should rather be used for relative comparisons and not for making profits/losses projections according to individual scenarios. Further information about the models used in stress testing, including their assumptions and scenarios, is given in the Analysis of the Slovak Financial Sector for the First Half of 2011, which is published at www.nbs.sk

Table 8 Stress testing parameters

			Baseline scenario		Sovereign Crisis		Cost-Push Inflation	
			2011H2 and 2012H1	2012H2 and 2013H1[6]	2011H2 and 2012H1	2012H2 and 2013H1	2011H2 and 2012H1	2012H2 and 2013H1
Underlying assumptions	External demand (annual change)							
	USD/EUR exchange rate (annual change)		0%	0%	-40%	25%	0%	0%
	Exchange rates of CHF, JPY, GBP, DKK, CAD, HRK, and LVL against the euro (annual change)		0%	0%	-40%	25%	0%	0%
	Exchange rate of other currencies against the euro (annual change)		0%	0%	40%	-25%	30%	-10%
	Equity prices (annual change) [1]		-15%	10%	-65%	25%	-55%	30%
	ECB key rate (annual change)		50 b.p.	50 b.p.	25 b.p.	175 b.p.	200 b.p.	-100 b.p.
	3-MONTH EURIBOR (annual change)		59 b.p.	67 b.p.	91 b.p.	5 b.p.	212 b.p.	138 b.p.
	iTraxx index (annual change)		0 b.p.	0 b.p.	50 b.p.	0 b.p.	0 b.p.	0 b.p.
	Rise in credit spreads for GR [2]		1,000 b.p.	0 b.p.	1,000 b.p.	0 b.p.	1,000 b.p.	0 b.p.
	Rise in credit spreads for IE, PT [3]		0 b.p.	0 b.p.	500 b.p.	0 b.p.	0 b.p.	0 b.p.
	Rise in credit spreads for ES, IT [4]		0 b.p.	0 b.p.	250 b.p.	0 b.p.	0 b.p.	0 b.p.
Macroeconomic variables estimated using a model	Real GDP growth (annual change)		4.2%	5.11%	-5.7%	9.2%	-4.9%	7.2%
	HICP inflation		3.0%	2.6%	0.5%	1.3%	4.8%	-1.6%
	Unemployment		12.5%	11.6%	13.7%	14.1%	13.7%	14.1%
Variables for credit risk estimated using macroeconomic variables	Annual probability of default [5]	1.6%	1.7%	2.7%	1.7%	2.7%	3.4%	12.12%
		3.0%	2.8%	4.3%	3.2%	3.4%	4.0%	12.19%
		6.0%	5.4%	9.2%	9.1%	9.8%	12.8%	12.88%
	Ratio of non-performing household loans		5.0%	4.7%	8.0%	8.8%	9.2%	9.8%

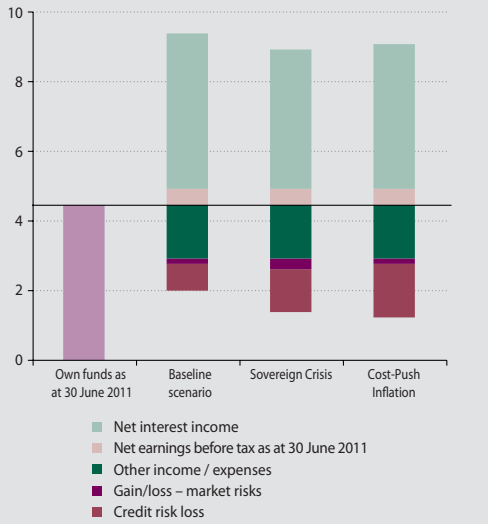
Source: NBS, ECB.
Notes:
1) Regarding equity indices, all the scenarios assume they will decline by 25% in the first two months (July and August 2011) and then increase to the point that their annual rate of change corresponds with the figure stated in the table.
2) All three scenarios assume that Greek credit spreads will record a one-off rise of 1000 basis points in July 2011, which approximately equates to a 20% decline in the value of 3-year Greek bonds.
3) In the Sovereign Crisis scenario, credit spreads for Ireland and Portugal are assumed to rise by 1000 basis points during the second half of 2011 and then to decline by 500 basis points in the first half of 2012.
4) In the Sovereign Crisis scenario, credit spreads for Spain and Italy are assumed to rise by 500 basis points during the second half of 2011 and then to decline by 250 basis points in the first half of 2012.
5) The annual probability of default for corporate loans and the ratio of non-performing household loans are stated as at the end of 2012 and 2013.
6) The second half of 2013 is assumed to see a continuation of the positive trends in the first half of the year.

Chart 59 Modelled losses of the banking sector (EUR millions)



Source: NBS.

Chart 60 Most important factors affecting the level of own funds (EUR billions)



Source: NBS.
Note: Figures represent estimates as at 31 December 2011. The second, third and fourth columns show the contributions of different items of profitability to the increase/decrease in own funds.

certain euro area countries), the additional capital requirement would be €88 million, or around 2% of the sector's own funds, as at the end of June); under the scenario "Cost-Push Inflation" (which assumes an increase in speculative investments in commodities, chiefly oil, as a result of central banks pursuing an expansive monetary policy and financial markets having excess liquidity), it would be €61 million, or 1.4% of the sector's own funds.

Under the scenarios, most of the losses reported by banks at the end of June 2011 would arise from corporate credit risk; however, losses from household credit risk and market risks account for an increasing share of the total.

As in previous analyses, banks would record their largest losses on the corporate credit portfolio. However, the stagnation of this portfolio and the combination of a higher bond component in total assets and a growing household loan portfolio led to an increase in the modelled losses from household credit risk and market risks (Chart 59).

The debt-servicing ability of households would be quite substantially reduced under the Cost-Push Inflation scenario. The sector's largest losses from market risks were recorded under the Sovereign Crisis scenario.

The stress testing results imply that households remain particularly sensitive to the risk of increasing inflation accompanied by rising interest rates and a possible recession.

The market risk losses comprise mainly interest rate-risk and sovereign-risk losses on the revaluation of debt securities. The fact that such risks tend to materialise quite rapidly and severely implies that the sector's losses would peak at the beginning of the stress period (Chart 59). At the same time, the scenarios are designed in such a way that part of the market risk losses would be recouped over the next two years (assuming a V-shaped recession).

The stress testing confirmed the marginal significance of foreign-exchange risk and equity risk to the banking sector. In certain banks, however, this risk is more pronounced.

The ability to generate a profit is an important precondition to withstanding a potential adverse situation in the future. A key source of the growth in banks' profitability is interest income.

The estimated capacity of the sector to generate interest income, even during a crisis, is to a large extent helping banks reduce losses or report

profits at the end of each year (Chart 60). The resilience of banks to the modelled scenarios was also aided by their high capital adequacy ratios at the beginning of the stress test period (end of June 2011).

The impact of the stress scenarios on the performance of PFMC funds was not particularly significant. The modelled losses of SPMC funds were substantial owing to the presence of equities in the asset portfolio. In the collective investment sector, the high proportion of lower-risk funds ensured that the modelled losses were contained. In the insurance sector, the depreciation of assets was offset by interest income.

Since PFMC funds have low exposure to market risk, their losses under the stress scenarios would not be substantial (only 0.2% of the value of the pension unit under the baseline scenario). Another factor behind these low losses is that the interest income of PFMC funds is fixed for a period of four months on average. Under the Cost-Push Inflation scenario, the performance of these funds would later be positively affected by the assumed interest rate hikes.

As for funds of Supplementary Pension Management Companies (SPMCs), the value of the pension unit would decline rather sharply under both stress scenarios (by as much as 15%), since most contributory funds have a relatively high proportion of investments in equities and mutual fund shares/units. The funds would suffer their heaviest losses at the end of the first half of 2012, in line with the movement of equity indices under each scenario.[26]

In the collective investment sector, the stressed losses of funds (weighted by the net asset value of individual funds) were relatively low on average (up to 6% of the NAV), since money market funds and bond funds have a substantial share in the sector's overall NAV. The bulk of the losses were caused by the downturn in investments in equities and mutual fund shares/units, and thus the distribution of losses between different types of investment fund was relatively uneven. Based also on what happened in 2008 (as well as developments in July and August 2011), it may therefore be assumed that in the event of further financial market turbulences, funds with a high equity component in their investment portfolio (i.e. equity funds and funds of funds) will make substantial losses and probably face a spate of redemptions.

As for insurers, their interest income would be only slightly affected under the stress scenarios, given the relatively long duration of their portfolios of debt securities. Furthermore, this interest income would partially cover losses on any repricing of assets that may take place under the stress scenarios. The stress testing results indicate that if the euro area sovereign debt crisis escalates and pushes up the credit spreads of bonds (including bonds issued by higher rated-countries, such as Slovakia), insurers will face elevated losses, since Slovak government bonds revalued at fair value constitute a relatively significant share of the insurance sector's asset portfolio.

26 The high riskiness of SPMC funds is further confirmed by what happened in July and August 2011, when, as a result of financial market turbulences, SPMC contributory funds made an average loss of 2.1% (weighted by net asset value).

ANNEXES

THE VIEWS AND RESULTS EXPRESSED IN THE ANNEXES ARE THOSE OF THE AUTHORS AND DO NOT NECESSARILY REFLECT THOSE OF NÁRODNÁ BANKA SLOVENSKA

1 A STRESS INDICATOR FOR THE ECONOMY AND FINANCIAL SYSTEM

MARIANNA ČERVENÁ[27]

The financial stability reports published by individual central banks and international institutions such as the IMF and BIS have been placing increasing emphasis on the issue of systemic risk in recent years. This shift may be attributed above all to the economic and financial crisis that continues to envelop the world. It therefore follows that Národná banka Slovenska should also attempt to quantify the potential materialisation of such risk in the Slovak financial system.

The term "systemic risk", as well as the "macro-prudential regulation and supervision" to which this phenomenon is directly linked to, is a relatively new term in the academic literature. Even though the use of the term has a longer history in policy-making circles, it was only after the outbreak of the crisis in 2007 that attempts were made to define it more precisely. Unfortunately, there is still no consensus on the definition, with the literature on the subject offering several preferred alternatives.

In this contribution, we follow the approach of De Bandt and Hartmann (2000) and De Bandt et al. (2009). According to their definition, systemic risk is a risk of a widening of financial instability disrupting the functioning of the financial system such that there is a tangible impact on the economic growth and welfare.

De Bandt and Hartmann distinguish between *horizontal* and *vertical* perspective when studying systemic risk. While the former focuses only on the impact of a systemic event on the financial sector alone, the latter also takes into account its impact on the real economy as well as the interaction between the two. Finally, systemic risk can materialise in three forms: *contagion* (meaning an idiosyncratic shock that is gradually, and often sequentially, spreading);[28] *aggregate shock* (a shock with simultaneous adverse effects on a whole range of intermediaries and/or markets); and an *accumulation of imbalances* in the financial system over time, as, for example, during a real estate market bubble.

Stress indicators

Financial stress indicators are a basic concept for measuring current stress in the financial system, or, put differently, for measuring accumulated systemic risk. Unlike early warning systems (which were discussed in an annex to NBS's 2009 Financial Stability Report), they do not attempt to predict the occurrence of a crisis or disturbance, but to provide a comprehensive information about the state of the (financial) system. They are therefore able to inform us about any accumulation of imbalances in the system, as well as about the materialisation of shocks (while shocks are unpredictable by definition).

Being simple and straightforward, these indicators are a useful tool for monitoring and safeguarding financial stability. If properly constructed, they offer an overview of the financial system from the macro level. They enable us to study the evolution of stress levels over time as well as to confront current stress levels with those observed in the crisis periods (in case there is a history of crisis periods). However, one should be cautious when evaluating and interpreting the stress index. Higher indicator levels are no more than an indication of the need for a greater vigilance and further research into the state of the (financial) system; they tell us nothing about when or whether a crisis will materialise.

The literature offers several approaches to designing stress indicators for the financial system. In general, indicators can be categorised according to the data used for the construction of the index and methods used for aggregation of the information contained in the data.

The choice of data sets used in a stress indicator depends on the structure of the financial system for which the indicator is designed, as well as on the interconnection between the financial system and the real economy, and possibly also on the linkages to other countries or markets. The

27 The views expressed in this article are those of the author and do not necessarily represent those of Národná banka Slovenska.

28 For example, where the collapse of one bank brings about the collapse of another bank that had previously appeared to be solvent.

literature includes studies that utilise market data only, mixed market and balance sheet data, and balance sheet data only. Macro data is sometimes used in cases where the stress indicator is intended for an economy that has a less developed financial sector which is closely interconnected with the real economy.

There are also several aggregation schemes available. The simplest and most common of these is a method that aggregates normalised data using variance-equal (VE) weights. The data are first adjusted to have a zero mean and then their variance is standardised to one. The idea behind this scheme is to ensure that time series with greater variance do not have an exaggerated effect on the performance of the overall index. Other popular and more sophisticated schemes include: factor analysis using the principal components method; logit models assessing the probability of stress; and methods taking advantage of state-space representation. An exhaustive summary of the literature on stress indicators for the financial system can be found in Louzis and Vouldis (2011).

Indicators of stress in an economy and financial system are a useful tool for monitoring the current state of the financial system, or the economy as a whole. Their advantage lies in their simplicity and straightforwardness; they are easy to grasp and can send a clear message to policy-makers. They provide a sound basis for the development of early warning systems, since they can be used as a keystone in the identification of past crisis episodes. Their drawbacks include certain level of subjectivity in the selection of the variables included in the model, and also in the fact that financial systems evolve over time. Thus, some of the key aspects of the system may not be covered by the indicator. Furthermore, the updating of the indicator may give rise to inconsistencies in what the indicator says over time. Finally, it is important to realise that these indicators have no predictive properties, but indicate the current level of stress in the system.

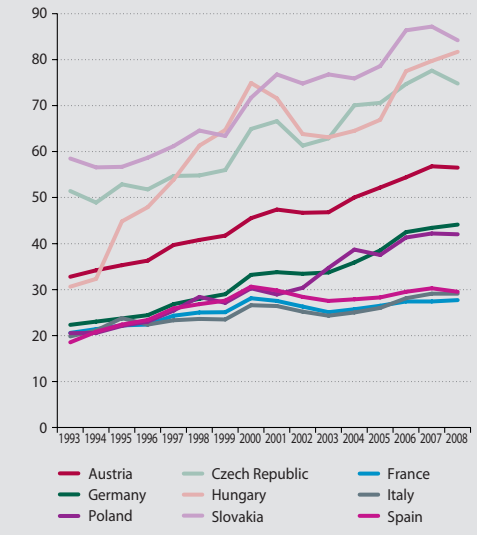
A brief description of the Slovak economy and financial system

The Slovak economy is a small open economy with a relatively shallow capital market and a small number of stock-exchange listed financial and non-financial corporations. The overall openness of the economy, defined as the sum of imports and exports as a share of GDP, stood at 163% of GDP in 2010. Note that the figure has been high for many years. Similar levels of openness are found in two of Slovakia's neighbouring countries and fellow members of the Visegrad Four group: Hungary (166% of GDP) and the Czech Republic (154% of GDP).

For a comparison with other countries, Chart 61 shows the OECD's trade indicator (defined as the average of a country's imports and exports as a percentage of GDP). From the Chart, it is evident that there are substantial differences between the large economies in Europe and small post-Communist countries. While Slovakia, Hungary, and the Czech Republic maintained a high level of openness – with even a moderately rising trend – during the given period (1993-2008), large countries such as Italy, France and Spain, and to a lesser extent Germany and Poland, had less open economies. Austria lay between these two groups.[29]

In the context of financial system stability, the high openness of the Slovak economy could be a significant source of potential imbalances. This view is supported by the evidence from previous years, when the rate of decline of GDP in Slovakia was among the highest in Europe. This adversely affected lending to non-financial corporations and the amount of non-performing loans, and thus had a direct impact on the financial system.

Chart 61 International trade to GDP ratio (trade as an average of imports and exports)



Source: OECD Factbook 2010.

29 As regards Slovakia's largest trading partners, the vast majority of Slovak imports in the first half of 2011 came from Germany, Austria, the Czech Republic, Korea, China, Poland and Hungary, and the main export destinations were Germany, the Czech Republic, Poland, France, Austria and Hungary.

As already mentioned, Slovakia has a small capital market, and banks dominate its financial system. Table 9 shows the assets of each segment of the financial sector as a share of the total assets of the sector. We can see that banks hold almost 71% of the total assets, followed by insurance companies, pension fund management companies (PFMCs), and supplementary pension companies (SPMCs). The shares of PFMCs and SPMCs are expected to increase, assuming that they are not subjected to any substantial statutory changes in the future.

Banks in Slovakia take a conservative approach, which is one of the reasons why they did not suffer more pronounced losses after the collapse of Lehman Brothers and the preceding outbreak of the financial crisis. The drop in their profitability in 2009 was caused mainly by Slovakia's adoption of the euro currency, which entailed a decline in profits from foreign exchange operations and in interest income. However, this period also began to see moderate rise in provisioning.

Amid the ongoing global financial and economic crisis there has not been a banking or financial crisis in Slovakia so far. However, it can be said that there has been an economic crisis, as the country went through a deep recession caused by reduced external demand; which in turn put upward pressure on the general government budget deficit and hence also on government debt. From the historical viewpoint, certain signs of crisis in Slovakia – related to the partial liberalisation of markets – were apparent from the beginning of 1991 and included the undercapitalisation of banks and accumulation of non-performing loans. A banking crisis as such did not occur until the end of 1998, and it was resolved in 2002 with the restructuring and privatisation of the banking sector. The period during which there was a systemic banking crisis is considered to be from 1998Q4 to 1999Q1.

An indicator of stress in Slovakia's economy and financial system

When developing a stress indicator for Slovakia's economy and financial system, we considered the practices employed in other central banks together with the results found in the academic literature as a starting point. These were then confronted with the analysis made in the previous section of this Annex. From the analysis above it is apparent that the Slovak economy is deeply interconnected. Thus it is necessary to monitor several sectors of the economy as well as the linkages between them. If we focused only on financial variables, we would risk neglecting key aspects of the economy's functioning and therefore ignore key risks to the financial stability.

As regards the selection of appropriate variables for the stress indicator, we focused on variables that capture the functioning of the banking system and real economy, as well as variables

Table 9 Assets of the Slovak financial sector

	Assets / assets under management in EUR billions	Share of total assets	Change from December 2010	Change from June 2008
Banks	55,779,017	70.8%	1.9%	-2.3%
Insurance companies	6,512,975	8.3%	1.2%	17.5%
CI funds	4,500,321	5.7%	0.1%	-16.2%
Investment firms	2,221,382	2.8%	1.0%	16.8%
PFMCs	4,130,682	5.2%	11.1%	110.2%
SPMCs	1,182,147	1.5%	3.2%	35.1%
Leasing	3,081,480	3.9%	-0.3%	-15.1%
Factoring	172,400	0.2%	-0.2%	-42.3%
Hire-purchase companies	1,168,116	1.5%	3.4%	10.8%

Source: NBS: Analysis of the Slovak Financial Sector for the First Half of 2011.
Note: Data as of June 2011.
CI – collective investment; PFMCs – pension fund management companies, SPMCs – supplementary pension management companies. The second column shows the ratio to total assets of the Slovak financial sector. The last column shows the change in comparison with the pre-crisis period.

capturing the economic situation in the country's largest trading partner. This selection corresponds to developments in recent years as well as to the developments observed in the 1990s.

The data were obtained from various sources. Some of the data are available directly from Národná banka Slovenska (NBS); these are monthly balance-sheet data that NBS collects from individual institutions (the aggregated data for the banking sector as a whole were used for the analysis). This part of the data limits the length of the sample used in the construction of the stress indicator, as the balance-sheet data are available in a consistent form only starting from 2004. The other sources include official data from the OECD, IMF and Eurostat.

The selected data can be easily categorised. The first category comprises ***macro*** variables, specifically GDP and its components (final consumption of households and investment), the industrial production index, unemployment, the real effective exchange rate, and interest rates (the short-term interbank rate; the rate on 10-year government bonds and their spread, i.e. the difference between these two interest rates).[30] The second category includes ***price*** variables such as the CPI, property prices, and share prices; the CPI was used as a deflator. The third category consists of ***banking*** variables, including capital adequacy ratios, bank profitability ratios (return on equity and return on assets, which for the purposes of our analysis are annualised), lending to the economy (specifically, lending to households and non-financial corporations, and the non-performing loan ratios in these two groups), and interbank loans and deposits.

Such a selection of variables makes it possible to construct two versions of the stress indicator – a monthly and quarterly version. The main difference between them is that the monthly indicator is available in a more timely fashion and can be updated more frequently (the economic sentiment indicators are available even before the end of the reference period; GDP figures are published with a lag of 40-60 days), while the quarterly indicator has a smoothing effect on short-term fluctuations. The monthly indicator is the better tool for monitoring current developments, particularly at times of disturbances.

Table 10 shows the cross-correlations between the selected variables at a quarterly frequency, with correlations of more than 0.8 in absolute valuemarked in bold. A strong correlation can be observed between final consumption of households and the banking variables, and there is also a strong negative correlation between con-

Table 10 Cross-correlation of selected variables – quarterly frequency

	GDP	C	I	U	Spread	SP	HP	aROE	aROA	CA	LHH	nLHH	LNFC
GDP	.												
C	0.72	.											
I	***0.89***	0.50	.										
U	-0.08	-0.57	0.14	.									
Spread	***-0.82***	***-0.93***	-0.67	0.42	.								
SP	0.68	0.72	0.57	-0.44	-0.69	.							
HP	***0.85***	***0.88***	0.69	-0.47	***-0.90***	0.77	.						
aROE	0.53	***0.93***	0.33	-0.69	***-0.85***	0.68	0.77	.					
aROA	0.50	***0.87***	0.36	-0.71	-0.79	0.74	0.72	***0.97***	.				
CA	0.50	0.17	0.55	0.63	-0.32	0.09	0.20	0.08	0.01	.			
LHH	0.59	***0.88***	0.42	-0.36	***-0.89***	0.51	0.74	***0.87***	0.76	0.40	.		
nLHH	-0.58	***-0.92***	-0.38	0.51	***0.90***	-0.65	-0.76	***-0.95***	***-0.88***	-0.28	***-0.95***	.	
LNFC	0.69	***0.96***	0.51	-0.60	***-0.92***	0.80	***0.90***	***0.95***	***0.91***	0.16	***0.86***	***-0.93***	.
nLNFC	-0.26	-0.75	0.05	***0.88***	0.61	-0.47	-0.64	***-0.80***	-0.73	0.33	-0.62	0.71	-0.77

Source: NBS calculations.
Notes: GDP – gross domestic product; C –final consumption of households; I – investment, U – unemployment rate; Spread – difference between long-term and short-term interest rates; SP – share prices; HP – house prices; aROE – annualised ROE; aROA – annualised ROA; CA – capital adequacy; LHH – loans to households; nLHH – ratio of non-performing loans to households; LNFC – loans to non-financial corporations; nLNFC – ratio of non-performing loans to financial corporations.
Since none of the correlations with interbank loans and deposits were strong, they are not shown in the table.

30 This category could still include imports and exports as well as government and private debt.

sumption and the interest-rate spread. A negative correlation of almost one exists between consumption and non-performing household loans, indicating that a reduced ability of households to service their debts goes hand in hand with lower final consumption. Furthermore, the high correlation between the unemployment and non-performing loans to non-financial corporations is also worth noting. This observation is in line with the assumption that firms cut their workforce during bad times (i.e. when they are unable to service their debts). On the other hand, the data indicate that there was no correlation between unemployment and real GDP growth during the period 2004Q1 to 2011Q2. Thus the simple technique does not confirm the assumption that GDP growth has a downward effect on unemployment.[31]

Spreads between long-term and short-term interest rates are in most cases strongly (negatively) correlated with other studied variables. During the period under review, rising spreads correlated with declines in GDP growth, lending (to both households and non-financial corporations), house prices and return on equity, as well as with an increase in non-performing loans. The profitability of banks is linked to growth in private consumption and in lending to the economy, and, of course, it correlates negatively with higher non-performing loan ratios. Finally, lending to the economy was particularly strongly correlated with household consumption.

The indicator

In this section, we sequentially present both versions of the stress indicator for the Slovak economy and financial system. The methodology selected for the construction of the indicator is simple at this stage, and its results will be used in future as a benchmark or reference value for the development of a more complex stress indicator for the Slovak economy and financial system. Given the methodology selected, there is a certain degree of subjectivity in the selection of variables used in the indicator. We are aware of this subjectivity, and while recognising that objections may be raised against the selection of variables, we believe that these variables cover the risks that may have an adverse effect on financial stability in the Slovak financial system sufficiently.

As indicated in the previous sections of this Annex, the variables included in the model are in real terms (i.e. adjusted for inflation) and in most cases expressed in annual rates of growth. The only exceptions are the spreads between long-term and short-term interest rates, the unemployment rate (using seasonally-adjusted data), capital adequacy, and bank profitability.

In constructing the indicator, we used the basic methodology mentioned in the introduction to this Annex. In other words, the variables were first adjusted to a zero mean and then they were aggregated using the VE weighting method, as follows:

$$I_t = \sum_{i=1}^{N} \frac{X_{i,t} - \overline{X_i}}{N\sigma_i},$$

where N is the number of variables used in the indicator, $\overline{X_i}$ is the mean value of the given variable X_i and σ_i is the standard deviation of variable X_i.

For the quarterly indicator, we settled on the following variables in the end: GDP growth, the GDP growth of Germany (our largest trading partner), the unemployment rate, the spread between long-term and short-term interest rates, the annualised return on equity of banks, lending growth to households and to non-financial corporations, and the ratio of non-performing loans to total loans in each category. The indicator also included the short-term interbank rate and the rise in interbank loans to residents. The equation below shows the composition of the indicator (the variables entered into it are standardised, i.e. they have a zero mean and a variance of one).

$$Index = -\frac{1}{11}\begin{Bmatrix} GDP \\ HDP_{DE} \\ aROE \\ loans\ to\ households \\ loans\ to\ firms \\ interbank\ laons \end{Bmatrix}$$

$$+\frac{1}{11}\begin{Bmatrix} unemployment \\ spread \\ short-term\ int\ erest\ rate \\ non-performing\ loans\ to\ households \\ non-performing\ loans\ to\ enterprises \end{Bmatrix}$$

31 It should be noted that the correlation analysis looks only at simple correlations and not at the time structure.

Not all the variables enter the equation with the same sign; the signs reflect their respective contributions to stress or instability of the system. The economy and financial system is adversely affected by negative deviations of GDP from the long-term average, rising unemployment, widening spreads between long-term and short-term interest rates, falling profitability of banks, and reduced access to loans (whether for households or non-financial corporation, or between banks), as well as a higher ratio of non-performing loans and increases in short-term interest rates (indicating a lack of trust between banks).

Chart 62 shows the quarterly stress indicator for the Slovak economy and financial system, constructed on the basis of the above equation. At the beginning of the period under review there is a transition from a level that could imply a certain degree of instability in the economy and financial system to a period of growth and positive deviations from the long-term averages. The turning point came at the end of 2008, from when the positive deviations were replaced by markedly negative deviations. The stress values in the system reached a peak from the second quarter of 2009 to the third quarter of 2010, and then declined moderately towards the end of 2010 and at the beginning of 2011. At the end of the period under review, the indicator rose slightly again.

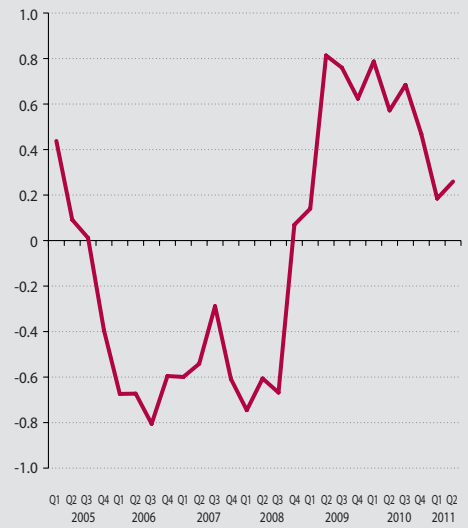
For the monthly indicator, we selected corresponding monthly variables, with GDP growth replaced by the industrial production index of each country (Slovakia and Germany). The indicator also included the seasonally-adjusted unemployment rate, the spread between long-term and short-term interest rates, the profitability of banks, lending growth to households and to non-financial corporations, the ratio of non-performing loans to total loans in each category, short-term interbank interest rates and the increase in lending between domestic banks.

$$Index = -\frac{1}{11}\left\{\begin{array}{l} industrial\ production \\ industrial\ production_{DE} \\ aROE \\ loans\ to\ households \\ loans\ to\ enterprises \\ interbank\ laons \end{array}\right.$$

$$+\frac{1}{11}\left\{\begin{array}{l} unemployment \\ spread \\ short-term\ int erest\ rate \\ non-performing\ loans\ to\ households \\ non-performing\ loans\ to\ enterprises \end{array}\right.$$

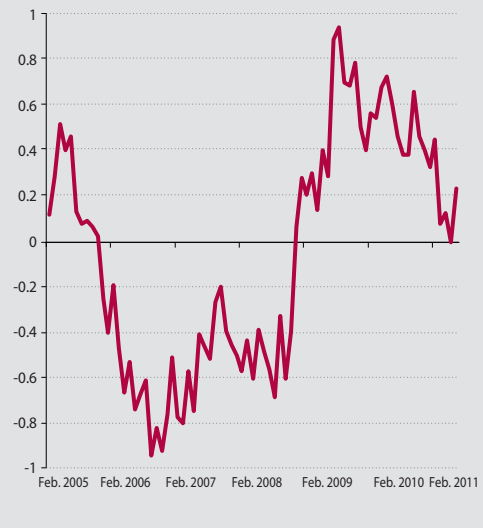
As with the quarterly indicator, the variables in this equation are standardised and they enter the

Chart 62 Quarterly stress indicator



Source: NBS calculations.

Chart 63 Monthly stress indicator



Source: NBS calculations.

equation according to their contribution to stress. The decline in the industrial production index in both countries indicates stress, as does rising unemployment, widening spreads between interest rates, falling profitability of banks, decreasing lending, and increasing short-term interbank interest rates. A climbing ratio of non-performing loans also has negative repercussions.

Chart 63 shows that the movement of the monthly indicator more or less mirrors the movement of the quarterly indicator, but with certain deviations. If we compare these developments more closely, we observe certain delays in their behaviour. This phenomenon is most pronounced towards the end of the period under review, when the monthly indicator clearly leads the developments captured by the quarterly indicator. The main cause of this shift is the inclusion of the industrial production index (IPI) in the monthly version of the indicator. The IPI is the only variable of those used that can be considered as a leading indicator, and therefore the information contained in the monthly indicator is mildly predictive. However, the leading character is only apparent when the stress is directly related to the performance of the real economy (i.e. domestic or imported from Germany), or in cases where a different type of stress has already manifested in the performance of the economy.

Conclusion

In this annex, we presented stress indicators for the financial system, the methodology of their construction, and their use. Slovakia is a small open economy whose stability is significantly affected by the situation in surrounding countries and its trading partners. Slovakia also has a bank-dominated financial sector, shallow capital market, and small number of stock- exchange listed companies. Furthermore, due to the data consistency issues, the period under review is relatively short.

Only one crisis episode was observed during the period under review, and that was towards the end of the sample. Since there were no other serious problems that could be compared with the constructed stress indicators, the validation of the indicators is not sufficient. The indicators should be perceived as a tool that can draw attention to current problems, but whose performance is limited. In the future, such a tool could be used as a reference value for the creation of a more complex indicator, one that would take into account the interaction between individual variables that capture the state of the economy and financial system. The new indicator should be extended over a longer time period, and its functionality should then be subjected to more in-depth testing that would include the comparison against both the crisis at the end of the 1990s and the current global and financial crisis.

Both indicators capture the onset of the crisis period from late 2008 and show that the economy and financial system was under peak stress at the beginning of 2009. From that point, the stress declined moderately, while remaining at relatively high levels. In the second quarter of this year it started rising again.

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2 FINANCIAL POSITION OF NON-FINANCIAL CORPORATIONS

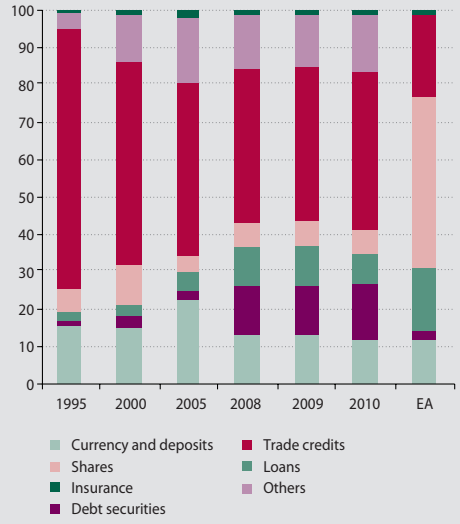
ANNA STRACHOTOVÁ[32]

In this contribution, we assess the financial position and financial structure of Slovak enterprises. Our main focus is on liquidity (which is linked to firms' debt-servicing ability), as well as on indebtedness and leverage, since an excessive accumulation of debt may indicate an increase in default risk to creditors. We will look at developments since 2005 and the recession-related changes that have taken place in the position of enterprises, using quarterly financial accounts data[33] that capture the financial transactions and balance sheet position of the corporate sector. In part three, the aggregate data are supplemented with a breakdown of the developments between 2008 and 2010 according to sector and enterprise size.

In response to the adversity of a recessionary decline in financing, enterprises intensified their mutual financial relations and became less reliable in their repayment behaviour. Domestic financial institutions saw their share of corporate financing decline moderately in absolute terms, but the relative position of the domestic financial sector did not drop significantly. In 2011, after the economy had returned to growth, the share of banks in the financing of the corporate sector increased, while the share of other financial institutions declined slightly.

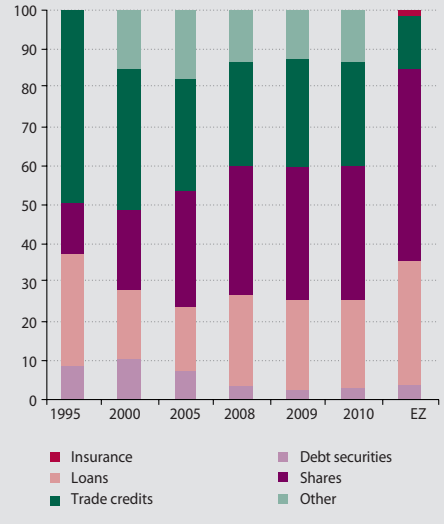
The balance-sheet structure of the economy's institutional sectors – households, non-financial corporations, financial corporations and general government – is important to a country's financial stability, both from the view of monetary policy transmission and for ensuring sustainable growth. Since sectors' balance sheets are interconnected (the liabilities of one sector are the claims of another sector), the risks arising in any given sector can spill over into other sectors, often with grave consequences.

Chart 64 Composition of assets (%)



Source: Eurostat.
Note: EA – euro area in 2009

Chart 65 Composition of financing (%)



Source: Eurostat.
Note: EA – euro area in 2009

32 The views expressed in this article are those of the author and do not necessarily represent those of Národná banka Slovenska.
33 The methodology for the compilation of the Quarterly Financial Accounts and the definitions of the account items are laid down by Národná banka Slovenska (2010).

2.1 CHARACTERISTICS OF THE CORPORATE SECTOR

Before the year 2001, enterprises in Slovakia were operating in a non-standard environment, far removed from the situation in advanced countries, and therefore their financial position at this time can also be described as non-standard. After the implementation of restructuring measures, the business environment in Slovakia became relatively stable, and thereby conducive to the development of investment activities and the emergence of internal sources of financing.

Chart 64 shows how the composition of the corporate sector's financial asset portfolio has changed over the last fifteen years, with the largest increase in share recorded by debt securities. The equity component remains substantially lower than the euro area average. The high share of trade credits on the asset side (as well as liability side) indicates a significant level of financial interconnectedness between firms. Corporate liquidity (in the form of cash and deposits) has declined to the level of the euro area average (around 12% of assets). There has been an increase in holdings of alternative liquid assets, such as short-term loans and short-term securities (Chart 66).

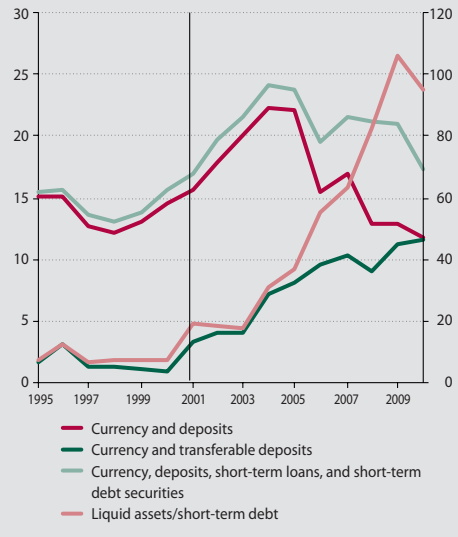
On the liability side of the sector's balance sheet, trade credits no longer account for the predominant share that they once did, but their share remains high in comparison with the euro area average. Financing has increasingly been obtained by issuing shares and other equities; the most marked rise has been in unquoted shares, owing to the lack of a functioning domestic capital market for corporate equities and bonds. The share of derivative-based financing schemes has also been gradually increasing.

LINKS BETWEEN FINANCIAL ASSETS AND LIABILITIES

The amount and structure of corporate financial asset holdings is determined by the need of firms to hold a certain amount of liquidity – short-term financial assets – with regard to the maturity and currency structure of their liabilities (financial contracts). Liquid assets are to some extent a buffer against unexpected movements in transactions.

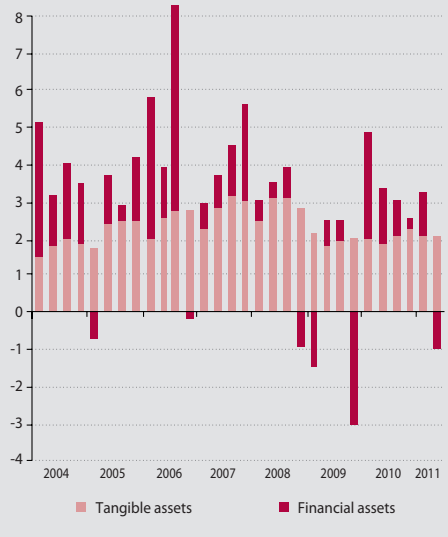
Liquidity holdings are also related to financial constraints, as firms that have more restricted access to external financing (such as small enterprises) tend to hold more liquid assets for precautionary reasons. In general, a higher level of liquidity means that firms are better able to meet their short-term liabilities and implement their investment strategies. In this regard, the liquidity position of the Slovak corporate sector has improved since 2001 (Chart 66).

Chart 66 Liquid assets (percentage share)



Source: SO SR.

Chart 67 Financial and tangible assets (flows) in EUR billions



Source: Eurostat, SO SR.
Note: Gross fixed capital formation (EUR millions).

At a time of elevated uncertainty there is also rising speculation, as firms consider substituting financial investments for tangible assets.

The allocation of assets to financial and tangible investments (Chart 67) also serves as a proxy for the level of firms' collaterals (required mainly for loans).

Leverage

The share of corporate financing obtained from debt instruments, shares, and trade credits has risen to almost 30%. In addition, a relatively high proportion continues to be accounted for by the category of other payables, which can be treated as "imposed" trade credits since they are in effect past-due payments.

The composition of financing reflects the debt-to-equity ratio, which is used as a measure of leverage and indicates the extent to which a firm's activities are financed by external funds. The preference for debt financing over equity financing (shares and other equities) in Slovakia is relatively high, although the debt-to-equity ratio is falling in comparison with the euro area average.[34] After 2005, when the rate of lending growth increased, debt came to the fore again (Chart 69).

In general, a high level of leverage is a potential source of risks to firms in that a high debt ratio means higher costs related to external financing (as creditors factor into the financing costs the higher risk of investing in the firm).

In addition, high leverage makes firms more sensitive to macroeconomic shocks, and it may diminish their debt-servicing ability and adversely affect their investment decisions. An increase in the debt-to-equity ratio during a recession stems also to some extent from shares being marked to market at a time when market prices are falling (as financial markets decline). In the period 2007–2008, most euro area economies experienced a substantial decrease in valuation of shares (Eurostat 2010). In Slovakia, the effect on firms' share prices – at the aggregate level – was relatively low (relative to GDP), which is probably related to the prevalence of unquoted shares in the composition of equity securities.

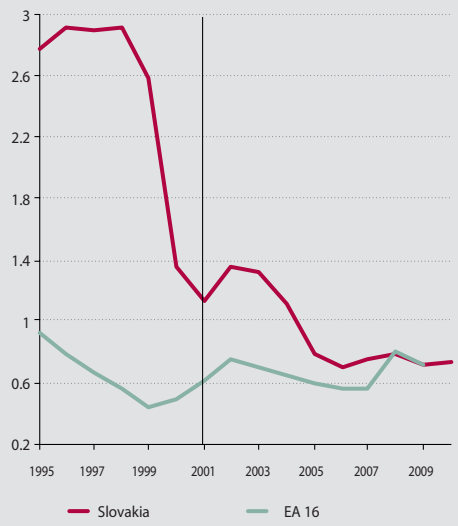
Sustainability of the position

The high share of short-term debt indicates that the exposure of firms to insolvency risk and refinancing risk would be greater in the event of an interest-rate shock. The problem arises when a firm does not have sufficient short-term assets to cover its interest payments. In Slovakia, restructuring of the banking and corporate sectors resulted in a temporary reduction in access to long-term funding, and consequently in short-

Chart 68 Corporate financing (% of liabilities)

Source: Eurostat.

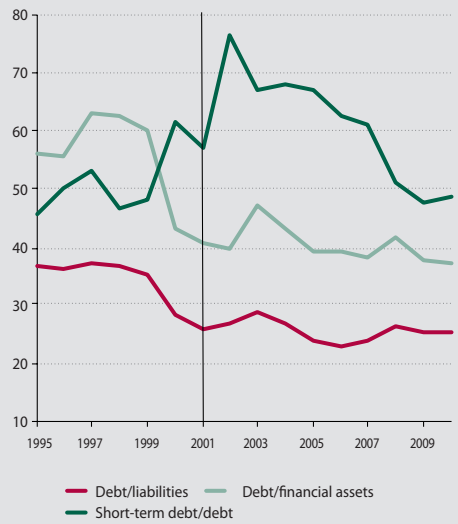
Chart 69 Leverage (coefficient)



Source: Eurostat.
Note: Debt-to-equity ratio.

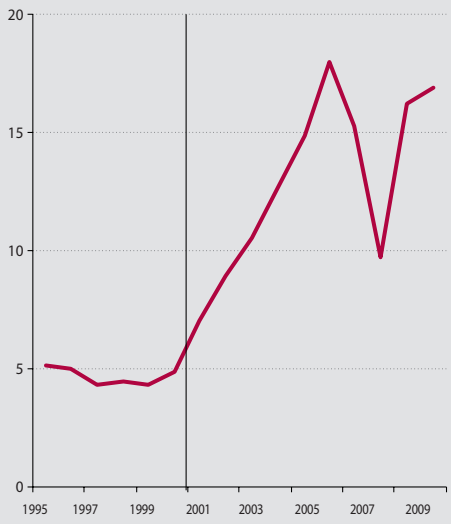
34 In countries with a typical banking system, such as Austria and Germany, the debt-to-equity ratio before the financial crisis stood above 1.1. In countries where market financing dominates, such as Belgium and the Netherlands, the debt-to-equity ratio was at around 0.6.

Chart 70 Debt indicators (%)



Source: Eurostat.
Note: Debt – excluding trade credits.

Chart 71 Interest coverage (coefficient)



Source: Eurostat.
Note: Gross operating surplus/interest paid.

term debt declining as a share of overall financing (Chart 70), while the maturity structure of debt had an improving tendency.

The debt-to-financial assets ratio measures to what extent financial assets are financed through debt. An increase in this ratio indicates that firms are more exposed to the risk that creditors will demand, for example, early repayment of the debt. In Slovakia, the debt-to-asset ratio was lower than 100%, meaning that the stock of debt did not exceed the stock of financial assets. That ratio is relatively low in international terms – among OECD countries it is mostly at the level of between 150% and 170%.

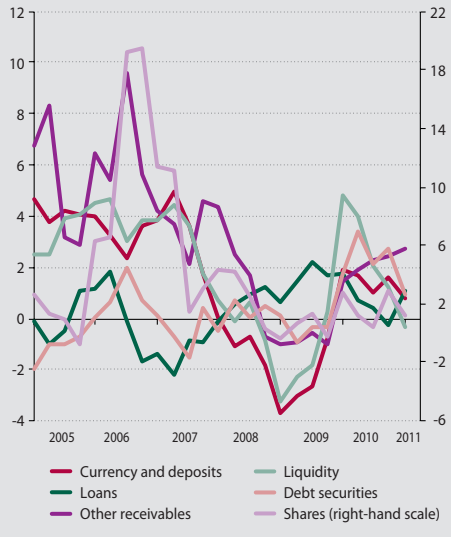
The sustainability of the current level of debt is indicated by the interest coverage ratio (Chart 71). Defined as the ratio of earnings before tax and interest to interest expenses, the interest coverage ratio suggest that following the 2001 restructuring, firms were generating sufficient income to service their debts. The accelerated lending growth from 2006 caused a temporary deterioration in this indicator, which has since corrected.

Before 2009, loans denominated in foreign currency were not widely used in Slovakia, and most of such financing was denominated in euro. After Slovakia joined the euro area, exchange rate risk was to a large extent eliminated. In these circumstances, firms in Slovakia gained the opportunity to issue debt abroad in their domestic currency.

2.2 FINANCIAL ASSET AND LIABILITY TRENDS BASED ON QUARTERLY FINANCIAL ACCOUNTS

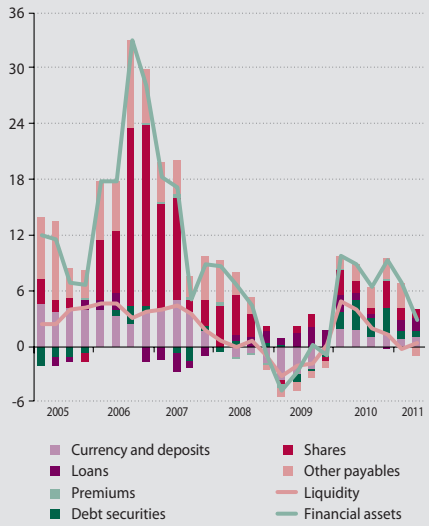
In this part, using macro-financial indicators of liquidity and indebtedness constructed on the

Chart 72 Assets – annual percentage changes



Source: Eurostat.

Chart 73 Breakdown of asset growth by contributions (p.p.)



Source: Eurostat.

basis of the quarterly financial accounts, we observe the short-term behaviour of the non-financial corporations sector, its response to economic developments at the aggregate level, and the potential risks that arose during the this period.

The amount of corporate financial assets was rising after 2005, driven up mainly by growth in equity securities and in trade credit claims (Charts 72 and 73). Liquid assets in the form of currency and deposits also increased, as did liquid assets defined more broadly to include short-term loans and short-term debt securities. In 2008 and at the beginning of 2009, the profile of liquid assets was to some extent affected by the introduction of the euro, as firms switched investments from currency to deposits and then back to currency.[35]

The substantial decline in liquidity in 2009 was probably related to the fall in corporate sales that occurred amid a slowdown in economic activity in Slovakia (sales in all the main sectoral groups had been falling since the last months of 2008). Corporate sales recorded their largest year-on-year drop at the beginning of 2009, when they plunged by almost 25% (Lalinský, 2009).

From 2008 there was also a rising amount of lending, both between resident firms and to non-residents (Chart 75, Table 12). This can be explained by the fact that firms that had liquid funds were providing loans to trading partners and sub-suppliers who were financially worse off. In 2010, growth returned to all financial asset components, with long-term assets rising more sharply than liquid assets.

Chart 74 shows how the liquidity position of enterprises developed. For this purpose, it uses

Chart 74 Debt and liquidity (EUR billions)

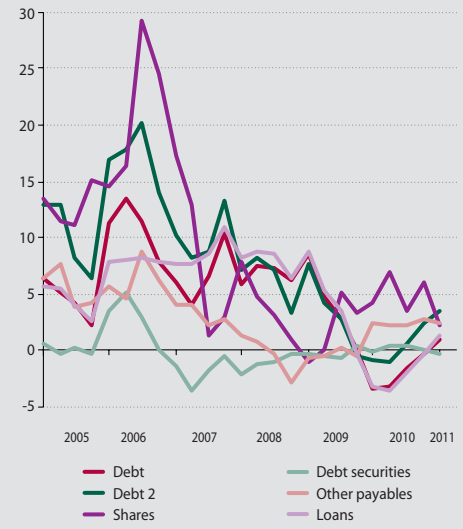
Source: Eurostat.
Note: CD = currency and deposits; liquidity = CD + short-term debt securities and loans.

Chart 75 Amount of lending (EUR billions)

Source: Eurostat.

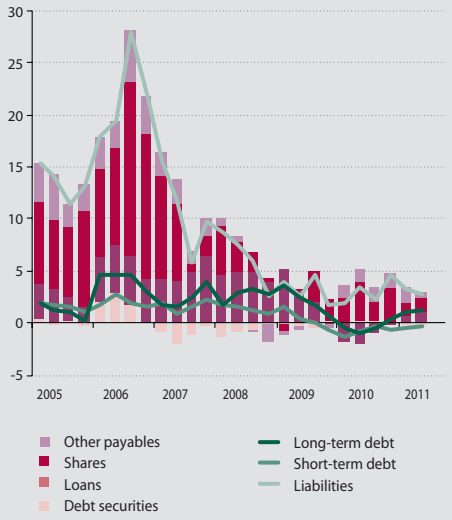
35 Towards the end of 2008, firms reduced their currency holdings and increased their deposit holdings; in the first quarter of 2009, they shifted investments back from deposits and into currency.

Chart 76 Liabilities – annual percentage changes



Source: Eurostat.
Debt2 – debt securities, loans, other payables.

Chart 77 Breakdown of liability growth by contributions (p.p.)



Source: Eurostat.

two ratios: a narrow liquidity ratio, defined as currency and deposits relative to short-term debt, and a broader liquidity ratio that also includes short-term loans and short-term debt securities. Except in the recession year of 2009, firms held a sufficient amount of short-term financial assets to cover their short-term debt (the ratio of liquidity to short-term debt was higher than 1).

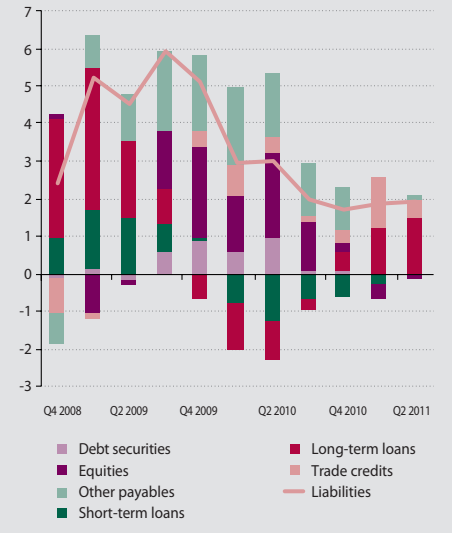
Liabilities

Faced with recession, firms adjusted their behaviour to the worsened economic environment. The increase in financing from external sources peaked in 2006 and then gradually declined (Chart 76).

The profile of financing underwent changes after 2008 (Chart 78) as equity financing increased while debt financing declined. As debt securities financing rose, loan financing (especially from the financial sector) fell. The category of *other payables* played something of a balancing role. The drop in loan financing was partially replaced by trade credits (and advances), but mainly by an increase in the *other* category, which in effect means past due payments; the increase in this category indicates that firms' repayment behaviour worsened during the recession.

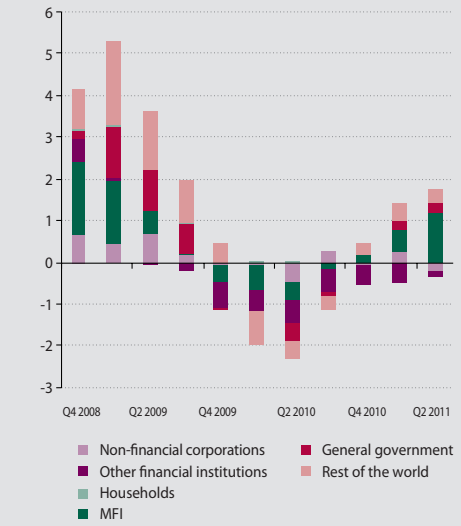
With most creditors restricting or reducing their lending activity (Chart 79), other forms of financing entered territory previously occupied by loan financing. It is generally assumed that the pattern of financing is more procyclical among smaller firms than among larger firms. During a recession, small firms have a tendency to utilise trade credits (their access to them being easier than their ac-

Chart 78 Corporate financing (EUR billions)



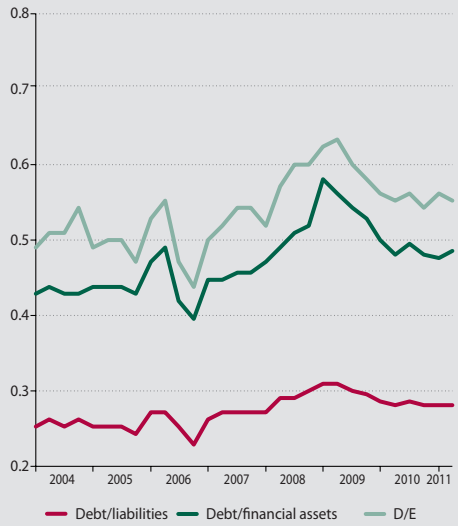
Source: NBS.
Note: Cumulative transactions over four quarters.

Chart 79 Breakdown of lending by sector (EUR billions)



Source: NBS.
Note: Cumulative transactions over four quarters.

Chart 80 Leverage (coefficient)



Source: Eurostat.

cess to bank loans). These serve as a buffer that reduces the negative impacts of the financial constrains and therefore "smoothes" the cyclical effect of real and financial activity during a recession.

The debt-to-equity (D/E) ratio reflected the fact that firms were reducing the growth in their debt while at the same time increasing the issuance of shares. In 2006, the high level of share issuance put downward pressure on the D/E ratio. Subsequent strong growth in debt financing translated into a rise in the ratio, and then the decline in loan financing from 2009 resulted in the ratio falling again.

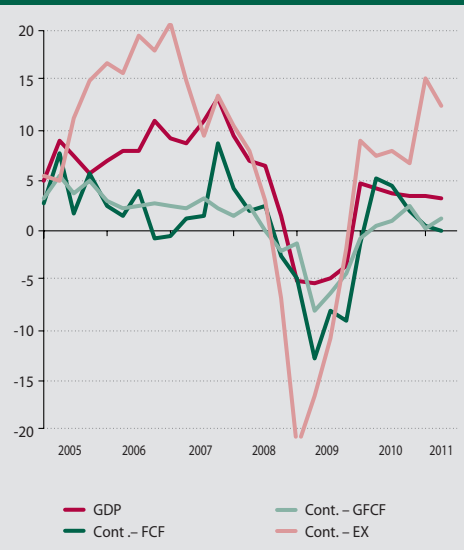
The change in the profile of financing between the debt and equity versions occurred mainly in larger and foreign-owned enterprises. This development was probably affected by both demand-side and supply-side factors – low supply from banks and lower corporate demand for loans. In the case of small and medium-sized enterprises, the main problem was access to loan financing: the share of unsuccessful loan applications in 2010 was higher than in 2007 (Eurostat 2010).

The debt-to-financial assets ratio measures to what extent financial assets are financed through debt. An increase in this ratio indicates that firms are more exposed to the risk that creditors will demand, for example, early repayment of the debt. In Slovakia, even during the recession, the debt-to-asset ratio was lower than 1, meaning that the debt did not exceed the stock of financial assets.

Changes in composition of financial assets and liabilities and the real economy

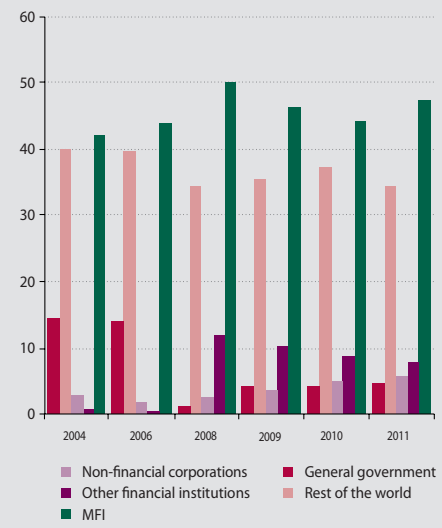
The interactions between, on the one hand, the composition of financial assets and liabilities (fi-

Chart 81 GDP and contributions to growth (p.p.)



Source: SO SR.

Chart 82 Composition of debt – creditors (%)



Source: NBS.
Other financial institutions – other financial intermediaries, financial auxiliaries, insurance corporations and pension funds.

nancial flows and balance-sheet ratios) and, on the other hand, developments in the real economy may be assessed using historical correlations, as may the intensity of these interactions.

When assessing the interaction between corporate financial assets and liabilities, and the real economy, it should be noted that endogeneity probably exists between them. Firms' investment decisions are a factor in the development of macro-variables such as GDP, while at the same time the macro-environment affects the financial results of enterprises.

Table 11 shows the highest correlations identified between, on the one hand, the year-on-year changes in selected financial instruments, liquidity ratios and macroeconomic variables, and, on the other hand, macroeconomic variables. The variables, selected to capture the business cycle, were the annual rate of change in GDP and the contributions to the change in GDP of gross fixed capital formation (GFCF) and exports (EX).[36]

Table 11 Correlations of selected financial instruments and ratios (correlation coefficients)

	GDP	Contribution of GFCF	Contribution of exports	Contribution of FCF
Δ **(Loans)**	**0.89**	0.86	0.80	0.67
Δ(Short-term loans)	0.82	0.82	0.80	0.58
Δ(Long-term loans)	0.86	0.81	0.73	0.67
Δ(Debt)	0.79	**0.86**	0.69	0.67
Δ(Other payables)	0.76	0.76	**0.81**	0.56
Δ(Liquid assets)	0.74	0.69	**0.81**	0.61
Δ(Assets)	0.72	0.62	**0.81**	0.51
Δ(Liabilities)	**0.59**	0.59	0.59	0.41
Δ(Shares)	0.51	0.56	**0.68**	0.36
Quoted shares	0.24	0.15	0.01	0.14
Unquoted shares	0.51	0.56	**0.68**	0.36
Δ(Derivatives)	0.39	**0.47**	0.17	0.37
Δ(Debt securities)	0.02	0.23	0.25	0.16
Short-term	-0.25	-0.12	-0.18	0.05
Long-term	-0.09	0.16	0.19	-0.01
Debt/assets	-0.82	-0.81	**-0.85**	-0.67
Debt/A-1	-0.78	**-0.78**	-0.76	-0.61
Liquidity/debt	0.74	**0.77**	0.75	0.58
Liquidity/short-term debt	0.72	**0.79**	0.75	0.57
Liabilities/financial assets	-0.73	-0.50	**-0.77**	-0.56
Debt/liabilities	-0.72	**-0.80**	-0.75	-0.60
D/E	-0.71	-0.78	-0.77	-0.58

Source: NBS calculations.
Note: GFCF – gross fixed capital formation; FCF – fixed capital formation.

36 Table 11 also shows correlations with the contribution of fixed capital formation (FCF) to the annual rate of change in GDP. These, however, are weaker.

The strongest correlation was observed between the change in the stock of loans (with a lag of three quarters) and GDP. Loans to enterprises in Slovakia show a procyclical pattern similar to that in euro area countries (ECB 2011).[37]

Another strong correlation was observed between the change in other payables (with a lead of one quarter) and the contribution of exports to GDP growth. The item of other payables that was most closely correlated with export developments was trade credits to non-residents; this mirrors the situation on the asset side, where other claims on non-residents correlate with import developments (NBS, 2010). The lead over the business cycle movements probably relates to the fact that trade credits are linked with new orders and their movements act as a lead indicator.

A strong correlation with the real economy was also apparent in the ratios of debt–financial assets, liquidity–short-term debt, debt–liabilities, and debt–equity. In the case of debt securities, however, there was no correlation with developments in the real economy. Since the period under review was relatively short, the further development of the identified correlations will need to be monitored.

Revaluation effects

Changes in the stock of assets and liabilities were affected not only by financial transactions, but also by the price movements of certain market instruments (which in the quarterly accounts are valued at market prices). The crisis resulted in a certain decline in the market value of assets – especially shares. Non-financial corporations were somewhat adversely affected by the revaluation of their financial instruments; however, they were far less negatively affected compared with the corporate sectors in other EU countries, where the extent of market financing is substantially higher (Eurostat 2010).

Firms embarked on deleveraging (Chart 80), reducing the high levels of debt they had accumulated during the boom; however, the extent of deleveraging in Slovakia was relatively low. *McKinsey Global Institute (2009)* defines deleveraging as a decline of at least 10% in the debt ratio over a period of three years. On that basis, deleveraging in the Slovak corporate sector has not taken place. Nevertheless, the composition of creditors has undergone moderate change, as Table 12 shows.

The process of disintermediation can also be described as limited. The utilisation of funding from other financial institutions declined; as for funding from MFIs, the movements recorded in 2009–2010 corrected, as debt instrument funding picked up. Inter-company funding, which had been rising in intensity since the end of 2008, declined in the first half of 2011 (Chart 82, Table 13).

Corporate balance-sheet developments in the context of trends in euro area countries

In the pre-crisis period, the corporate sector in Slovakia had a relatively high ratio of net financial assets to GDP in comparison with euro area countries.[38] In other economies, the response of corporate sector balance sheets to the crisis was more pronounced. Alongside the group of countries in which ratios of liabilities to financial assets were significantly reduced (the Netherlands, Greece, Belgium and Finland), there was a second group of countries (comprising mainly Estonia, Portugal and Spain) in which the corpo-

Table 12 Debt instrument financing broken down by sector (%)

	2011	2010	2009	2008	2006	2004
Financial institutions	57.2	55.7	60.3	56.1	51.7	47.6
MFI	48.9	47.4	48.8	46.5	51.3	47.0
Other financial institutions	8.2	8.3	11.5	9.5	0.3	0.6
Non-financial corporations	3.8	4.5	3.5	5.6	2.0	2.8
Rest of the world	34.2	35.9	32.4	34.1	41.3	39.0
General government	4.4	3.4	3.4	3.8	4.8	10.5

Source: NBS.
Note: Quarterly Financial Accounts, Q4 in 2004–2010 and H1 in 2011. Debt instruments – debt securities and loans.

37 An ECB analysis (2011) for the period 1990–2010 shows correlations between corporate sector loans and GDP at the level of 0.7, with a lag of three quarters.
38 Non-financial corporations operate mainly with borrowed funds and therefore most of them are in a net debtor position.

Table 13 Corporate financing broken down by sector (%)

	2011	2010	2009	2008	2006	2004
MFI						
Liabilities	**14.0**	**13.5**	**14.9**	**13.8**	**12.2**	**12.5**
Securities other than shares	32.6	24.2	52.6	14.4	27.5	31.6
Short-term	17.3	14.4	1.0	0.0	0.9	0.8
Long-term	27.2	18.9	39.3	22.8	23.3	33.5
Loans	49.3	48.1	48.7	48.2	52.7	48.3
Short-term	59.4	53.6	56.8	51.2	59.0	59.0
Long-term	44.9	45.6	44.6	46.8	49.0	42.4
Other financial institutions						
Liabilities	**2.5**	**2.5**	**3.7**	**3.0**	**0.3**	**0.5**
Securities other than shares	10.8	7.2	7.9	3.2	5.7	6.9
Loans	8.2	8.3	11.6	9.9	0.0	0.0
Non-financial corporations						
Liabilities	**32.9**	**33.3**	**33.9**	**34.1**	**35.5**	**32.0**
Securities other than shares	15.6	11.5	9.6	49.5	3.2	4.2
Short-term	76.4	58.3	90.0	97.4	15.0	11.6
Long-term	9.8	7.7	7.5	4.4	2.4	3.4
Loans	**3.6**	**4.3**	**3.4**	**3.3**	**2.0**	**2.6**
Short-term	6.4	9.4	7.4	7.3	3.5	4.8
Long-term	2.3	2.1	1.4	1.4	1.0	1.5
Shares and other equity	**35.5**	**35.2**	**39.1**	**37.1**	**37.8**	**31.6**
Other payables	**65.7**	**67.9**	**66.0**	**67.6**	**64.3**	**62.9**
Trade credits and advances	68.1	69.1	69.0	70.6	61.5	63.1
Other	56.6	63.0	53.2	55.5	72.6	62.3
Rest of the world						
Liabilities	**38.9**	**39.5**	**36.2**	**37.6**	**40.0**	**39.7**
Securities other than shares	7.8	34.2	22.8	19.4	50.8	41.0
Short-term	0.0	21.4	3.4	1.9	6.5	0.0
Long-term	9.5	38.3	32.1	38.5	59.3	47.3
Loans	**34.7**	**36.0**	**32.6**	**34.9**	**40.7**	**38.8**
Short-term	28.3	30.4	27.4	33.3	34.3	23.1
Long-term	37.5	38.4	35.3	35.7	44.5	47.4
Shares and other equity	**47.6**	**47.6**	**43.9**	**45.6**	**45.0**	**49.2**
Other payables	**24.3**	**23.7**	**23.6**	**22.5**	**27.2**	**22.2**
Trade credits and advances	30.7	29.6	29.1	28.0	36.5	31.2
General government						
Liabilities	**10.4**	**9.9**	**9.5**	**10.0**	**10.6**	**13.4**
Securities other than shares	**32.9**	**22.7**	**7.0**	**13.5**	**12.4**	**15.8**
Short-term	5.7	5.1	3.8	0.5	59.0	87.2
Long-term	39.9	26.4	9.7	27.7	9.4	7.0
Loans	**3.9**	**2.9**	**3.3**	**3.3**	**4.3**	**10.0**
Short-term	0.1	0.1	0.0	0.1	2.6	12.7
Long-term	5.5	4.1	5.0	4.8	5.3	8.6
Shares and other equity	**16.5**	**16.6**	**16.5**	**16.7**	**16.8**	**18.7**
Other payables	**3.5**	**1.7**	**1.8**	**1.8**	**2.1**	**6.4**
Other	16.8	8.3	9.6	9.1	8.2	22.0
Households and non-profit institutions serving households						
Liabilities	**1.4**	**1.4**	**1.7**	**1.6**	**1.4**	**1.9**
Other payables	5.5	5.7	7.3	6.9	5.2	6.9
Other	22.9	24.8	32.2	31.1	15.7	11.8

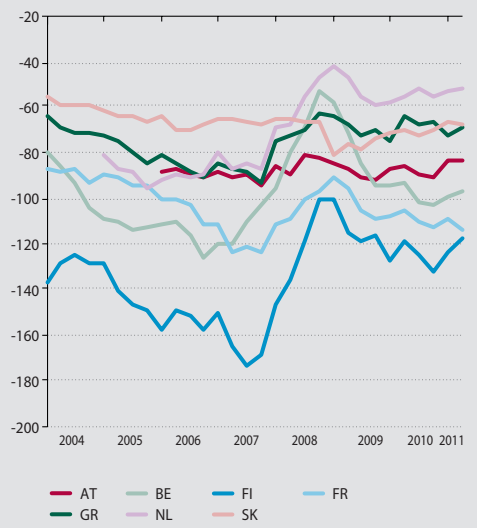
Source: NBS.
Note: Shares of sectors in the total amount of financing, broken down by financial instruments and their sub-categories.

Table 14 Corporate financial assets by sector (%)

	2011	2010	2009	2008	2006	2004
MFI						
Assets	**17.2**	**18.2**	**19.1**	**20.8**	**21.4**	**21.0**
Currency and deposits	**98.9**	**96.3**	**95.4**	**97.0**	**97.8**	**99.0**
Currency[1)]	100.0	100.0	100.0	100.0	100.0	100.0
Transferable deposits	99.0	99.0	98.8	98.9	99.5	99.6
Other deposits	98.0	89.4	86.0	93.8	95.2	98.1
Securities other than shares	1.4	1.7	5.2	9.2	10.6	3.1
Financial derivatives	28.2	28.1	58.2	42.6	84.0	98.2
Other financial intermediaries						
Assets	0.01	0.01	0.01	0.01	0.00	0.01
Non-financial corporations						
Assets	**56.3**	**57.4**	**59.3**	**59.4**	**59.4**	**53.3**
Securities other than shares	**2.5**	**2.8**	**30.3**	**3.6**	**2.5**	**3.9**
Short-term	64.2	62.5	72.8	35.7	7.1	4.6
Long-term	1.3	1.8	2.3	2.6	2.0	3.8
Loans	**28.3**	**43.8**	**36.7**	**45.2**	**19.4**	**19.0**
Short-term	21.9	40.1	34.6	49.3	25.8	38.9
Long-term	43.1	53.3	43.1	36.7	13.1	10.0
Shares and other equity	86.6	88.0	90.0	93.3	95.3	89.9
Other accounts receivable	67.0	67.4	66.6	64.2	68.3	64.8
Trade credits and advances	65.9	64.9	66.5	66.9	62.6	59.2
Other	72.9	81.0	67.0	52.5	88.6	85.1
Rest of the world						
Assets	**18.6**	**17.0**	**16.5**	**13.7**	**13.2**	**15.7**
Currency and deposits	0.6	3.1	4.0	2.0	1.6	0.8
Other deposits	1.7	10.3	14.0	5.4	3.9	1.9
Securities other than shares	**20.5**	**10.6**	**22.0**	**23.2**	**24.9**	**34.5**
Short-term	0.0	0.0	17.5	49.0	68.2	6.2
Long-term	18.2	6.7	23.8	11.6	18.4	46.8
Financial derivatives	71.8	71.9	41.8	57.4	16.0	1.8
Loans	**71.0**	**53.8**	**59.4**	**47.2**	**48.5**	**26.3**
Short-term	77.5	59.2	60.5	50.1	70.1	61.0
Long-term	55.9	39.5	56.1	41.2	27.2	10.6
Shares and other equity	**13.1**	**11.8**	**9.4**	**6.3**	**4.5**	**9.6**
Other accounts receivable	24.0	25.8	24.6	23.0	24.1	24.6
Trade credits and advances	28.8	30.5	29.4	28.3	30.9	31.4
General government						
Assets	**5.7**	**5.7**	**3.1**	**3.3**	**4.0**	**6.9**
Securities other than shares	**75.6**	**84.8**	**42.6**	**63.9**	**62.0**	**58.5**
Short-term	35.8	37.5	2.5	15.2	0.0	89.2
Long-term	80.5	91.5	73.6	85.7	78.6	49.4
Loans	0.0	1.6	3.2	6.7	31.5	54.6
Short-term	0.0	0.0	4.3	0.0	3.4	0.0
Long-term	0.0	5.8	0.0	20.4	59.4	79.4
Shares and other equity	**4.1**	**2.8**	**2.8**	**2.3**	**2.7**	**4.1**
Other accounts receivable	**6.3**	**3.4**	**4.5**	**2.0**	**3.2**	**5.2**
Trade credits and advances	5.7	5.7	3.1	3.3	4.0	6.9
Other	5.7	5.7	3.1	3.3	4.0	6.9

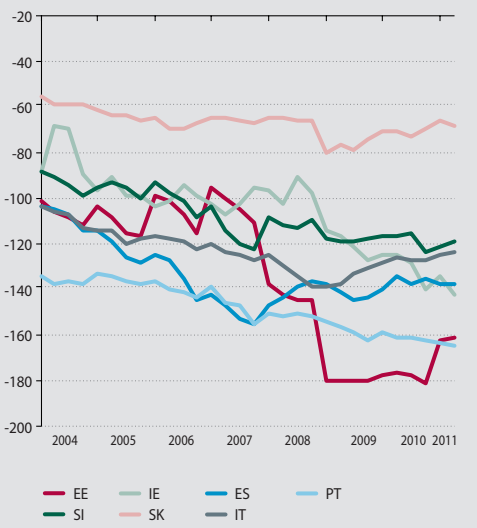
Source: NBS.
1) Vis-à-vis NBS.
Note: Shares of sectors in the total amount of different financial instruments and their subcategories.

Chart 83 Net financial assets, (% of GDP)



Source: Eurostat.

Chart 84 Net financial assets (% of GDP)



Source: Eurostat.

rate sector deteriorated or consolidated to a less substantial extent.

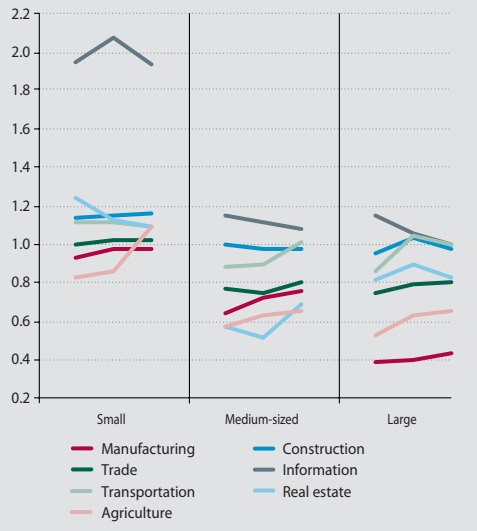
Compared with the situation in euro area countries, the balance-sheet adjustments among non-financial corporations in Slovakia were relatively limited. Slovakia cannot be included among the countries in which substantial deleveraging has taken place.

2.3 INDEBTEDNESS AND LIQUIDITY AT THE SECTORAL LEVEL

In this part, we compare macro-indicator values with trends in less aggregated data broken down by sector and enterprise size. For this, we use data from Univerzálny register plus (UR+), a broad database that includes data from the financial statements of business entities that use a double-entry bookkeeping system (these are submitted with tax declarations).

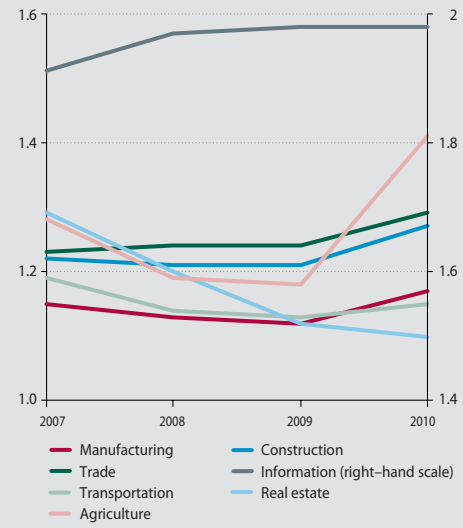
The criterion for enterprise size is *amount of assets*. Enterprises are classified as small, medium-sized or large, according to whether they have assets of up to €1.6 million, €1.6 to €5 million, or more than €5 million. Data on the mean values (quartiles) of selected financial ratios can be obtained from the database. Median values are better for capturing the financial health of a typical firm (this figure is reached by half of all the firms evaluated). In contrast to the average values, however, the results are less "visible" in the median values, particularly in the case of large enterprises (far fewer in number than small enterprises), whose position may be more significant in the propagation of shocks. This limitation must be taken into account when evaluating the results.

Chart 85 Quick ratio (coefficient)



Source: UR+.
Note: Short-term equity – inventories / short-term borrowings over 2008-2010.

Chart 86 Quick ratio (coefficient)



Source: UR+.

The ratio values reflect the specific characteristics of the sectors. We are therefore interested less in the value of a particular ratio than in its movement over time, i.e. whether the level of the median enterprise in the sector has improved or deteriorated.

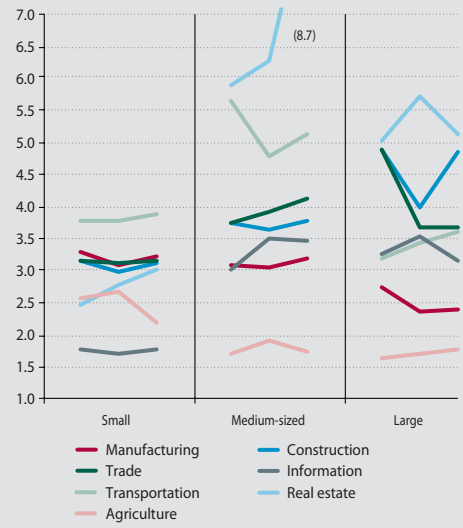
Quick ratio (Chart 85) represents the extent to which a firm's short-term debts are covered by total short-term assets (current assets – inventories / current liabilities). An increase in the ratio implies a rise in liquidity. Small enterprises reported a generally higher level of liquidity compared with larger enterprises. The ratio declined in 2009, and then improved in all the sectors under review except for real estate activities.

Using the leverage ratio (assets to equity), it is possible to quantify the extent to which borrowings and equity are used.[39] This ratio is an indirect indicator of a firm's indebtedness (it rises with indebtedness). After a general increase in median-level leverage in 2009, there was a further moderate decline (Chart 88). Only the sector of real estate activities showed a different trend, with leverage steadily rising.

Median-level leverage is not significantly lower in small enterprises than in larger enterprises, which have greater opportunities to use non-debt financing, such as internal funds and shares.

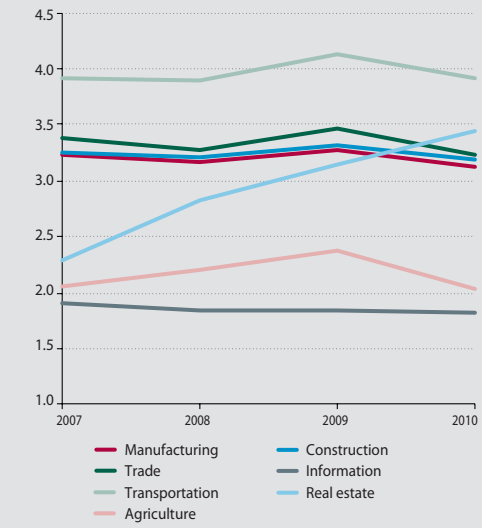
In 2009, the interest coverage ratio (earnings before tax + interest expenses / interest expenses) in the sectors of transportation and real estate activities fell into negative territory (Chart 89). Enterprises with an interest coverage ratio that is lower than 1 are not able to generate sufficient income to meet their interest payments. By that

Chart 87 Leverage broken down by enterprise size (coefficient)



Source: UR+.
Note: 2008-2010.

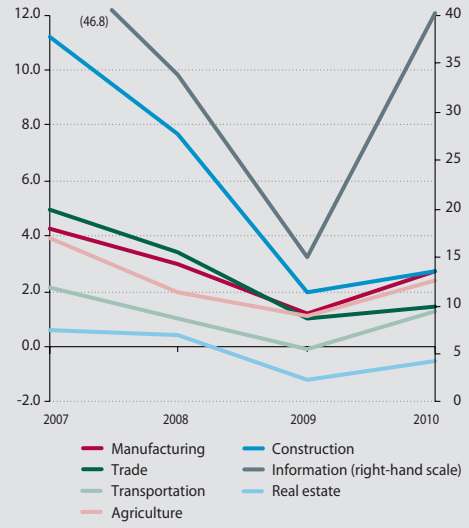
Chart 88 Leverage broken down by sector (coefficient)



Source: UR+.

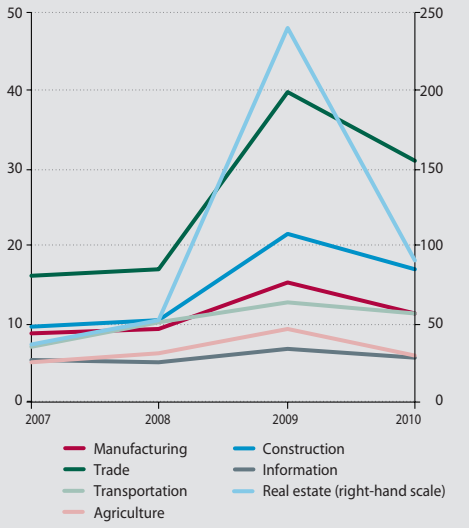
39 In this definition, assets comprise the financial and non-financial assets of an enterprise.

Chart 89 Interest coverage ratio (coefficient.)



Source: UR+.

Chart 90 Debt repayment period (years)



Source: UR+.

measure, more than half of the firms in these two sectors did not make a profit in 2009 that would be sufficient to cover these payments. In 2010, this ratio improved in other sectors and it also rose above 1 in the transportation sector.

The debt repayment period indicates how many years a firm will be repaying its debts out of operating income (Chart 90). Like the previous ratios, it implies that the situation is improving in all segments of the corporate sector except for real estate activities.

Conclusions

After 2005, non-financial corporations in Slovakia were not, at the aggregate level, exposed to critically significant balance-sheet risks. Compared with sectors in other euro area countries, the Slovak corporate sector was not overleveraged, not even during the recession. The currency composition of debt liabilities was not a risk at the aggregate level,[40] owing to the country's membership of the euro area (although being narrowly focused on the euro area, without further diversification, may itself be a risk, given the deteriorating sovereign positions of euro area countries).

A large share of corporate financing came under the category of *other payables,* which gave firms a buffer against the adversity of a recessionary credit crunch. In this way, they offset the cyclicality of developments in real and financial activity. At a time of elevated uncertainty and lower stability in the economic environment, firms behaved among themselves more like financial intermediaries.

Given the information asymmetry (between creditors and debtors), it is an open question whether cooperating enterprises have better information about one another than they would have if they cooperated through financial intermediaries. In the event of debtor default, firms may also be able to utilise collateral more efficiently than banks could.

The cyclicality observed in certain liquidity and debt ratios showed up in the sectoral data. Differences related to the size of firms were apparent. It is positive that the liquidity and debt ratios for most of the sectors under review improved in 2010.

The deleveraging process in Slovakia is relatively weak in the international context. One reason for the less pronounced changes in the balance sheet of the Slovak corporate sector was the weaker effects of valuation and other stock changes.

Domestic banks and domestic financial intermediaries saw their share of overall financing

40 Naturally, however, there are individual firms in which the situation may be different.

decline moderately. However, the share of the domestic financial sector did not fall to any significant extent. In 2011, after the economy had returned to growth, the share of banks in the financing of the corporate sector increased, while the share of other financial institutions declined slightly. The changes in the extent of corporate financing from other sectors may have reflected firms' substitution of funding sources at times when access to financing became more difficult. Information on the extent to which this substitution was voluntary or forced are not available.

From the view of the economy's financial stability, it matters whether the financial links between companies in Slovakia (or abroad) will be intensified, since that would involve a shift in the distribution of credit risk in the economy. The banking supervisor is generally well-informed about credit risks in banks; if, however, the corporate sector's largest creditors were not part of the banking system, the supervisor would probably have less information about these risks.

Another potential problem, if financing from the banking sector declined, would be a reduction in the transmission of monetary impulses to the interest rates of commercial banks.

The stability of the environment in the near future will be a decisive factor for a possible deterioration in the relatively fragile financial position of firms. It may also happen that a further reduction in access to external sources of financing will amplify the financial links between firms. If firms are forced to finance their activities from own funds to a greater extent, it could have a dampening effect on investment activity, which in Slovakia is a key driver of growth. As a result, amid low household consumption and restrictions in the general government sector, the outlook for economic growth would deteriorate further.

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ABBREVIATIONS

Abbreviations

AFS	available-for-sale securities portfolio
CDS	Credit Default Swap
CPI	Consumer Price Index
D/E	Debt to Equity Ratio
EBA	European Banking Authority
ECB	European Central Bank
EFSF	European Financial Stability Facility
EU	European Union
FED	Federal Reserve System
GDP	Gross Domestic Product
HTM	hold-to-maturity securities portfolio
IMF	International Monetary Fund
MB	mortgage bonds
LTRO	long-term refinancing operations
MFI	monetary financial institutions
NAV	Net Asset Value
OECD	Organisation for Economic Cooperation and Development
PFMC	Pension Asset Management Company
PMI	Purchasing Managers Index
ROA	Return on Assets
ROE	Return on Equity
SO SR	Statistical Office of the SR
SPMC	Supplementary Pension Asset Management Company
UR+	Universal Register Plus

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