



MAGYAR NEMZETI BANK

**REPORT  
ON FINANCIAL  
STABILITY**

**Update**

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– update –**

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*Financial stability is a state in which the financial system, including key financial markets and financial institutions, is capable of withstanding economic shocks and can fulfil its key functions smoothly, i.e. intermediating financial resources, managing financial risks and processing payment transactions.*

*The Magyar Nemzeti Bank's fundamental interest and joint responsibility with other government institutions is to maintain and promote the stability of the domestic financial system. The role of the Magyar Nemzeti Bank in the maintenance of financial stability is defined by the Central Bank Act and a Memorandum of Understanding on co-operation between the Hungarian Financial Supervisory Authority, the Ministry of Finance and the Magyar Nemzeti Bank.*

*The Magyar Nemzeti Bank facilitates and strengthens financial stability using all the tools at its disposal and, should the need arise, manages the impact of shocks. As part of this activity, the Magyar Nemzeti Bank undertakes a regular and comprehensive analysis of the macroeconomic environment, the operation of the financial markets, domestic financial intermediaries and the financial infrastructure, reviewing risks which pose a threat to financial stability and identifying the components and trends which increase the vulnerability of the financial system.*

*The primary objective of the Report on Financial Stability is to inform stakeholders on the topical issues related to financial stability, and thereby raise the risk awareness of those concerned as well as maintain and strengthen confidence in the financial system. Accordingly, it is the Magyar Nemzeti Bank's intention to ensure the availability of the information needed for financial decisions, and thereby make a contribution to increasing the stability of the financial system as a whole.*

The analyses in this *Report* were prepared by the Financial Stability, Financial Analysis, Monetary strategy and Economic Analysis as well as the Payments and Securities Settlements Directorates, under the general direction of Péter TABÁK, Director. The project was managed by Márton NAGY, Deputy Head of Financial Stability. The *Report* was approved for publication by Júlia KIRÁLY, Deputy Governor.

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The *Report* incorporates the Monetary Council's valuable comments and suggestions following its meetings on 5 October and 2 November 2009. However, the *Report* reflects the views of the contributing organisational units and does not necessarily reflect those of the Monetary Council or the MNB.

This *Report* is based on information in the period to 30 September 2009.



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# Overall assessment

## **Developed country central banks and governments have significantly eased monetary and fiscal conditions**

Since publication of the last Report on Financial Stability in April 2009, central banks and governments across the developed world have taken unprecedented remedial actions – in terms of both methods and scale – to stabilise their financial systems and economies. As conventional monetary policy tools became increasingly constrained, central banks eased monetary conditions further by deploying a range of unconventional measures, while governments introduced fiscal stimulus packages. Anti-cyclical monetary and fiscal interventions were aimed at cutting the negative feedback loop between the financial sector and the real economy by restoring the smooth operation of financial systems and fostering an economic recovery.

## **Interventions by the national authorities have led to a considerable reduction in systemic risk and improving economic growth outlook**

As a result of the various measures (mainly assuming part of the private sector's risk) by developed country central banks and governments, financial systems and economies gradually returned to normal functioning. Liquidity conditions in international financial markets improved and there were numerous signals that recession in the developed economies was coming to an end. International organisations expect growth to start again in the developed economies early 2010 at the latest.

## **Reducing government and central bank involvement in economic stimulus is necessary, but normal operation of financial systems and economies has not yet been fully restored**

Direct state involvement in developed economies will ultimately need to be reduced over the longer term. If national authorities withdraw from markets before their normal operations have been restored, however, another wave in the confidence crisis may occur. By contrast, if the authorities wait too long, the risks associated with the sustainability of high public sector debt and market distortions could impede the recovery. The continued fragility of financial systems and delays in reforming regulatory and supervisory regimes also make the timing of an exit scenario very difficult.

## **Deterioration in euro area banks' loan portfolios is likely to be a prolonged process, therefore, the credit supply may remain weak**

Despite improving global investors' sentiment, there is still significant uncertainty about the performance of the global financial system. First, labour market adjustment follows the economic cycle with a lag, and consequently the deterioration in banks' loan portfolios may only peak in the period ahead. This can be a problem particularly in the euro area, as the European banking sector is currently registering losses which limit the internal capital accumulation. Second, in preparation for the anticipated deterioration in portfolio quality, banks may deleverage their balance sheets further by cutting back lending in order to improve their own capital adequacy, which may aggravate recessionary risks.

## **Domestic financial market conditions have also improved significantly**

Since March 2009, CDS spreads in the Central and Eastern European region have fallen substantially and exchange rates have appreciated. All of this has made it possible for governments to restart their sovereign bond issuance programmes. The Hungarian Government successfully issued five-year euro-denominated foreign currency bonds. Implementation of the fiscal adjustment package and the reduction in the government's and banks' refinancing risks contributed significantly to the change in the S&P's rating outlook from negative to stable and to the improvement in investor sentiment towards Hungary.

**Reduction in the country's vulnerability implies a sharp output loss over the short term; however, it improves the sustainability of long-term economic growth**

Due to the high degree of openness of the Hungarian economy, the deterioration in global macroeconomic conditions has led to a rapid adjustment by the private sector and a sharp contraction in economic activity. Owing to the large net foreign debt, however, the adjustment in Hungary has been sharper and larger than in countries in a more favourable external financing position. The high indebtedness of the government and private sectors – the most important sources of Hungary's vulnerability – needs to be reduced. All of this, in turn, results in a significant, albeit unavoidable output loss over the short term, but improves the sustainability of long-term economic growth. As a result, Hungary's GDP is likely to decline sharply this year, followed by a moderate economic contraction in 2010.

**The global economic outlook has improved steadily, but a number of downside risks remain for Hungarian growth prospects**

Confidence indicators describing the future developments of economic activity have been rising continuously, and the euro area economy has performed above expectations. In Germany and France, GDP growth in the second quarter of 2009 was positive, which may improve the growth outlook for Central and Eastern Europe countries, including Hungary. Despite this, there are several downside risks to Hungarian growth prospects. Among the external risk factors, the fragility of the euro area economy and financial system can be highlighted. As concerns the domestic factors, the pro-cyclical behaviour of the fiscal and monetary policy as well as the banking sector may cause persistently weak demand.

**The banking sector has adjusted to the new environment by rapidly reducing its loan-to-deposit ratio**

The domestic banking sector has also been adjusting rapidly to the new financial and macroeconomic environment, resulting in a contraction in lending as well as a stronger deposit collection. This, in turn, has led to a decrease in the loan-to-deposit ratio and a rapid decline in the domestic banking sector's reliance on foreign funding. As the adjustment on both the asset and liability sides have mainly affected foreign currency loans and deposits, the banking sector's on-balance-sheet open FX position narrowed and thus outstanding FX swap volumes and the need for FX swap market financing declined. Banks' assets side liquidity has also improved, in addition to a reduction in funding risks. Currently there is ample HUF liquidity available for the banking sector. Normalisation of financial market operations has also contributed to the smooth adjustment of the banking sector. Bid-ask spreads have narrowed significantly and – except in the spot foreign exchange market – in the FX swap, the uncollateralised interbank and the government bond markets have returned to the low levels seen before October 2008.

**Due to the output loss associated with the necessary adjustment of the economy, the quality of loan portfolios has deteriorated sharply**

The banking sector is facing a significant deterioration in portfolio quality and mounting loan losses in the recessionary environment of this year and the next. In the first half of 2009, the partial passing on of the weak exchange rate and high foreign funding costs to costumers resulted in deterioration in banks' portfolio quality. However, looking ahead, it seems likely that the dominant factor will be the unfavourable macroeconomic conditions. The rising bankruptcy rate for the corporate sector, and an increasing unemployment rate and falling real wages for the households' sector, will reduce borrowers' ability to meet their debt service requirements in the corporate and household sectors, respectively. In line with our previous projection, the banking sector's loan losses on corporate and households portfolios are expected to triple from the end of 2008 to the end of 2009, reaching 3 per cent. In 2010, corporate loan losses are projected to increase further, due to a pick-up in the corporate

bankruptcy rate, while household loan losses may decrease slightly, owing to a slowdown in the increase in unemployment and banks' workout activities.

**The banking system may reach higher-than-expected profits this year, but this is mainly due to one-off factors**

Despite the substantial loan loss provisioning, the banking sector's earnings exceeded our expectations in the first half of 2009 and was only slightly less than in the same period of last year. This is a remarkable development as the euro area banking system recorded losses due to the write-down on toxic assets. The profitability of Hungarian banks was attributed mainly to outstanding revenues from financial transactions, rising interest income and improvements in operational efficiency. This strong profitability is, however, unlikely to be maintained in the future, given that, with the exception of efficiency improvements, earnings were boosted by one-off factors. Banks will try to price rising risk costs into the interest spread, i.e. the difference between lending rates and the funding costs, but this is unlikely to absorb loan losses entirely. The deteriorating income generating capacity of financial enterprises poses another downside risk to the financial system performance. Financial enterprises may incur losses even during this year, which may significantly reduce the consolidated results of banking groups owning financial enterprises.

**The banking sector's current capital position is strong and is expected to remain so along the baseline macroeconomic scenario**

The banking sector's already large capital buffers increased further in the first half of 2009. The capital adequacy ratio rose from 11.2 per cent to 12.3 per cent and the Tier 1 capital ratio from 9.3 per cent to 10.3 per cent by June 2009. Two important factors in these developments were that banks realised strong profits which were used for internal capital accumulation and that parent banks injected capital to reinforce the capital position of their subsidiaries. The sector's current level of capital appears adequate along the baseline macroeconomic path. The banking sector's capital adequacy ratio is expected to remain above 11 per cent over the period to the end of 2010, while all systemically important banks' capital adequacy ratios are likely to exceed the 8 per cent minimum capital requirement.

**The recapitalisation needs emerging in an unfavourable scenario are manageable**

According to the stress test results, in an unfavourable macroeconomic scenario a significant part of the banking sector would need a capital injection. However, the estimated amount of aggregate recapitalisation needs (HUF 100-170 billion for the entire banking system) is manageable. Parent banks have shown firm commitment to meet the future capital needs of their Hungarian subsidiaries even under more difficult conditions. This is not only demonstrated by their past behaviour, but also by their joint statements signed in Brussels.<sup>1</sup> An additional guarantee is that the Government will continue to make available a EUR 1 billion capital fund as part of its bank support package until the end of 2010, which may provide sufficient buffer to cover banks' capital needs even in a stress scenario.

**Reducing risks associated with households' foreign currency lending and excess indebtedness ...**

Households increasingly borrowed in foreign currency in previous years, which significantly exacerbated the vulnerability of the financial system and the economy. The financial crisis made the risks of household FX borrowing and excess indebtedness evident. Foreign investors' declining willingness to take risks led to both HUF depreciation and a sharp rise in country risk premia, which, in turn, triggered an increase in banks' foreign funding costs. Large, sustained depreciation of exchange rate, coupled with the banks passing on

<sup>1</sup> <http://www.imf.org/external/np/cm/2009/052009.htm>;

<http://europa.eu/rapid/pressReleasesAction.do?reference=IP/09/1359&format=HTML&aged=0&language=EN&guiLanguage=en>.

their higher funding costs to lending rates, led to a substantial increase in instalments on households' foreign currency loans. That, in turn, caused a sharp surge in defaults, leading to deterioration in the banking sector's financial position. The Magyar Nemzeti Bank considers necessary to use regulatory instruments, in order to limit risks. These include the tightening of risk taking guidelines and lending criteria in order to strengthen responsible lending.

**... as well as developing an efficient regulatory and supervisory framework are the key tasks for the Hungarian authorities responsible for financial stability**

The financial crisis has shown that the supervisory authorities of financial markets must adopt different policies than in the past, in respect of both crisis prevention and crisis management. Hungary's domestic authorities responsible for financial stability have realised this and have formulated proposals for a new supervisory architecture, in consultation with the IMF. In the proposed framework, the HFSA would have a right to issue regulations, the responsibilities of the Magyar Nemzeti Bank in the field of financial stability would be broadened, the legal status and organisational framework of the HFSA would be strengthened and a Financial Stability Council would be established in order to harmonise prudential supervision at both systemic and individual levels.

#### Reassessment of risks identified in the April 2009 issue of the Report on Financial Stability

	Direction of change
Risk of persistently low economic growth	↘
Liquidity risks facing the domestic financial system	↓
Solvency risks facing the domestic financial system	↘

Note: ↑ increased significantly, ↗ increased slightly, → remained flat, ↘ fell slightly, ↓ fell significantly.

# **1 Financial market and macroeconomic risks**





*The international financial market environment and the macroeconomic outlook have improved considerably since the publication of the Report on Financial Stability in April 2009. One of the key risks identified in the last report was that economic recession and the financial system turbulence in developed countries may exacerbate each other. Following the bankruptcy of Lehman Brothers, the central banks and the governments of developed countries took unprecedented actions to prevent a negative feedback loop between the real economy and financial sector and to ensure that the financial systems do not hinder, but rather support economic recovery. The positive effects of public interventions associating with the take-over of the private sector risks have become increasingly apparent since the beginning of 2009. The liquidity conditions of financial markets have improved, funding costs have decreased, and several indicators suggest that the global economy has reached a turning point. Notwithstanding the positive trends, the financial system and the economy remain fragile, and the financial system is still unable to support economic recovery on its own.*

*One of the most important sources of fragility is the unsustainability of prolonged public support. All market participants are aware that the central banks and the governments will have to scale back their roles over the long term. Premature withdrawal by the state at a time when the markets are not capable of functioning independently may result in a resurgence of the confidence crisis. By contrast, if the government leaves the markets too late, economic recovery may be inhibited by sustainability risk of high public debt and persistent market distortion. Withdrawal is also difficult because strengthening of the banking sector and the development of an adequate regulatory system are necessary before this occurs.*

*The international financial system remains vulnerable. Since the labour market follows the economic cycle with quite a lag, the realisation of massive loan losses in the banking system still lies ahead. This risk is particularly relevant in the euro area due to the more pronounced labour market rigidity coupled with low income-generating capacity of the banking sector. The euro area banking sector has been unprofitable since 2008 and, thus internal capital accumulation is limited. Though the capital adequacy of the banking systems has been*

*progressively improving primarily as a result of public capital injection, it is uncertain whether this capital buffer is sufficient to absorb future loan losses. This uncertainty may lead to further deleveraging and persistently tight credit standards.*

*The stabilisation of developed financial market operations and the improvement of global investor sentiment combined with Hungarian central bank and government measures all contributed to stabilisation of the domestic financial markets: CDS spreads decreased, a successful issuance of foreign currency denominated government bonds took place, the volume of HUF-denominated government securities' auctions returned to the pre-crisis levels, and key financial market operation normalised.*

*Due to Hungary's high level of financial and economic integration, the changes in developed economies have led to adjustments in the private sector and subsequently to an economic downturn in Hungary as well. Although the process was triggered by external factors, it has been also significantly intensified by internal factors. Due to high external imbalances, the level of adjustment in Hungary is inevitably faster and higher compared to that of other countries. This adjustment decreases Hungary's vulnerability by lowering the external financing requirements, but at the same time contributes to the deepening of the recession. As a result of the considerable economic downturn, the income position of companies has deteriorated significantly, driving up bankruptcy rates. The labour market adjustment and deleveraging of companies' balance sheet lead to a decline in real wages and employment, which worsens the income position of households, while forcing a decline in the indebtedness.*

*The better-than-expected global economic developments may improve the Hungarian economic outlook. For Hungary, the beginning of 2010 is expected to be a turning point, and the economy may recover from the recession as early as the end of 2010. At the same time, uncertainties, surrounding the performance of the financial systems in developed countries – especially in the euro area countries – represent a rather significant downward risk concerning economic growth.*

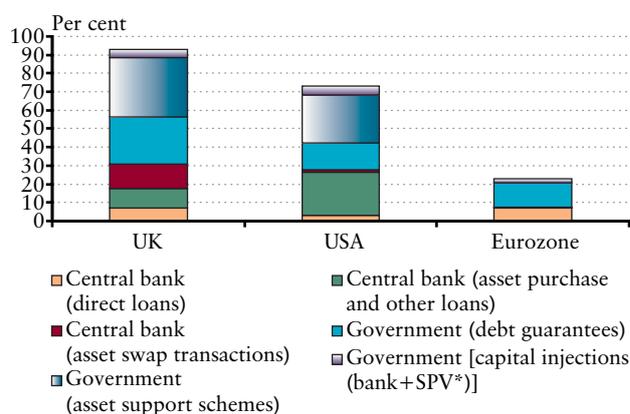
# 1.1 Global financial markets and the economy have stabilised, but complete regeneration may take a long time

In an effort to stabilise the financial system and the economy, the central banks and governments of developed countries took significant actions. Using traditional monetary instruments, the central banks of developed markets quickly responded to the liquidity crisis triggered by the bankruptcy of Lehman Brothers in October 2008. After the short term liquidity problems had been resolved, however, deflation and recession concerns appeared. As early as the beginning of 2009 the US Federal Reserve (Fed) and the Bank of England (BoE) reduced their policy rates to below 1 per cent, and the European Central Bank (ECB) cut its policy rate to 1 per cent. Thus, the possibility of further economic stimulation via traditional monetary instruments became strongly limited. Consequently, the use of non-traditional instruments increasingly came to the forefront at the central banks in developed countries.<sup>2</sup> This was also justified by the need to handle the disturbances on the securitisation and government securities markets. In addition to central bank interventions, governments also assisted the financial system via bank guarantees on the asset and liability sides and via capital injections.<sup>3</sup> In the United Kingdom, the total amount of the measures announced by the central bank and the government as a percentage of GDP reached 90 per cent, and amounted to around 70 per cent and 20 per cent in the United States and the euro area, respectively (see Chart 1-1). The low level of public interventions in the euro area may suggest that bank support packages, including the establishment of ‘bad banks’ is still in an early phase. Finally, in addition to supporting the banking system directly through fiscal instruments, developed country governments also facilitated economic recovery by stimulating internal demand. As a result, according to IMF’s October forecast, the ratio of the budget deficit to GDP may reach 10 per cent in the United Kingdom and the United States this year, while the euro area may face a budget deficit of 5 per cent.

**The functioning of the money markets in developed countries has gradually improved.** As a result of central

**Chart 1-1**  
Announced size of central bank and government financial support schemes as a percentage of GDP

(June 2009)



Note: \*SPV = special purpose vehicle.

Source: Bank of England Financial Stability Report.

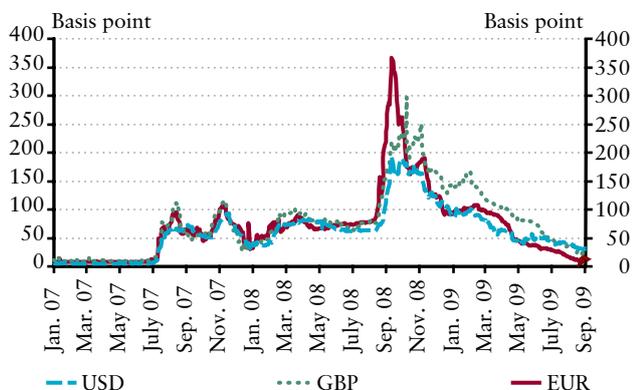
banks’ liquidity provisioning in the form of direct loans and FX swaps in the developed countries, short-term interbank interest rates started to decrease from October 2008, and consequently spreads between interbank rates and key policy rates narrowed to the levels before the Lehman Brothers’ bankruptcy (see Chart 1-2). In the euro market, recourse to the ECB’s deposit facility decreased, while interbank market turnover rebounded, which may also signal the easing of short-term liquidity tensions and counterparty risks. Following stabilisation of the interbank markets, in early 2009 the volume of short-term direct loans and foreign currency swaps from central banks to the banking sector gradually declined, although in the second quarter of 2009 the activity of the ECB and the BoE increased again. The ECB introduced the 12-month direct loan, while BoE expanded its asset purchase programme. At the same time, the balance sheet of the Fed was stagnating, as the declining utilisation of central bank loans was offset by a sudden surge in asset

<sup>2</sup> We can differentiate two main types: credit easing and quantitative easing. In case of the former, the central bank purchases securitised loan products; in case of the latter it purchases government securities.

<sup>3</sup> For further details see: André Meier (2009): Panacea, Curse, or Nonevent? Unconventional Monetary Policy in the United Kingdom, *IMF Working Paper* 09/163. [www.imf.org/external/pubs/ft/wp/2009/wp09163.pdf](http://www.imf.org/external/pubs/ft/wp/2009/wp09163.pdf); Bank of England (2009): *Financial Stability Report*, <http://www.bankofengland.co.uk/publications/fsr/2009/index.htm>.

**Chart 1-2**

**Spread between 3-month LIBOR and OIS (overnight indexed swap) interest rates**



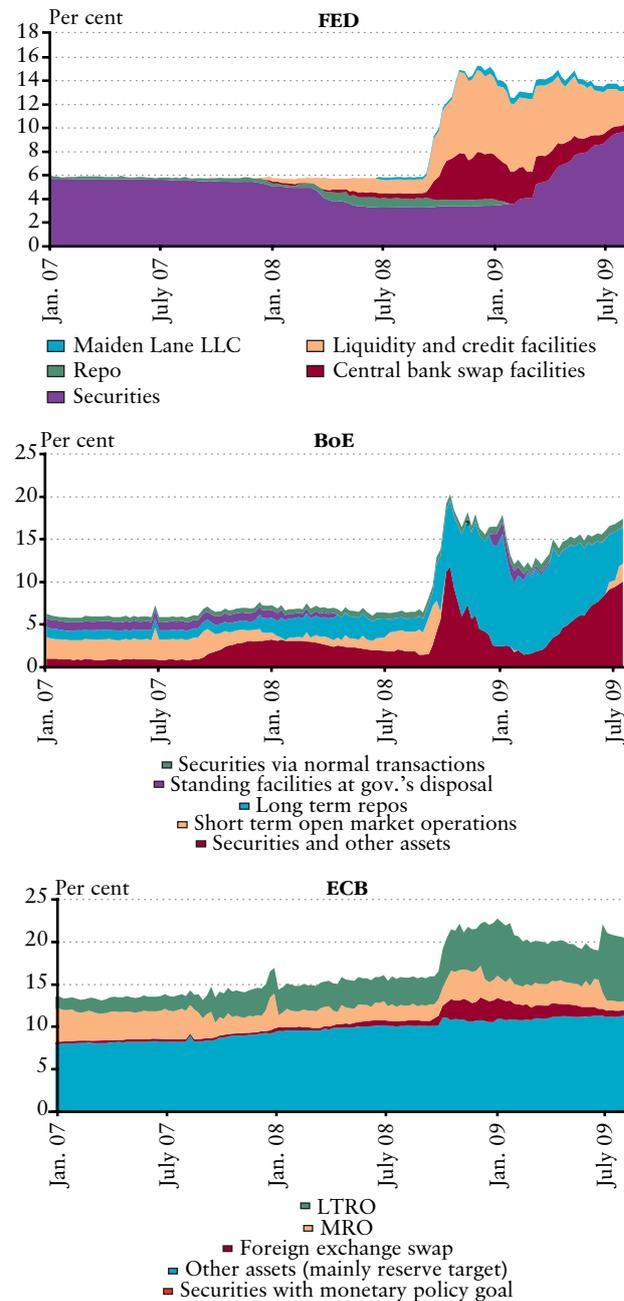
Sources: Bloomberg.

purchases. These programmes were already aimed at stabilising the long-term money and credit markets.

**Long-term financing conditions have also improved.** As early as October 2008, the Fed began purchasing short-term corporate bonds and from November 2008 it initiated a programme to purchase the debt instruments and mortgage-backed securities of government sponsored enterprises (GSE) (see Chart 1-3). In addition, in March 2009 the programme was expanded to cover the purchase of government bonds, and the Fed significantly increased the total amount available for the purchase of covered and uncovered securities of government sponsored enterprises.<sup>4</sup> At the end of September 2009, the Fed announced that government bond purchases were to be terminated by the end of October, while the asset purchase programme for GSEs' securities would be extended until the end of the first quarter of 2010. Finally, the Fed also announced that it would test the interbank market's operation by introducing reverse repo transactions to reduce surplus liquidity. The BoE launched its asset purchase programme in January 2009 with no liquidity effect initially, as it was conducted through the Asset Purchase Facility established for this purpose and financed by the government via the issuance of treasury bills. The central bank purchased commercial papers, corporate bonds and bank debt securities issued under Credit Guarantee Scheme. Since March 2009, however, the BoE has also been authorised to finance asset purchases (especially government securities) via money issuance. The ECB launched its own asset purchase programme limited to high-quality mortgage bonds in early

**Chart 1-3**

**Central bank assets as a percentage of GDP**



Note: Maiden Lane LLC = A limited liability company established by the New York Fed to finance the merge of Bear Stearns and JP Morgan, as well as AIG. MRO (main refinancing operation) = The liquidity-providing one-week repo tender of the ECB conducted on a weekly basis. LTRO (long-term refinancing operation) = Essentially, repo tenders of the ECB with a maturity of 1, 3, 6 and 12 months.

Sources: Fed, BoE, ECB.

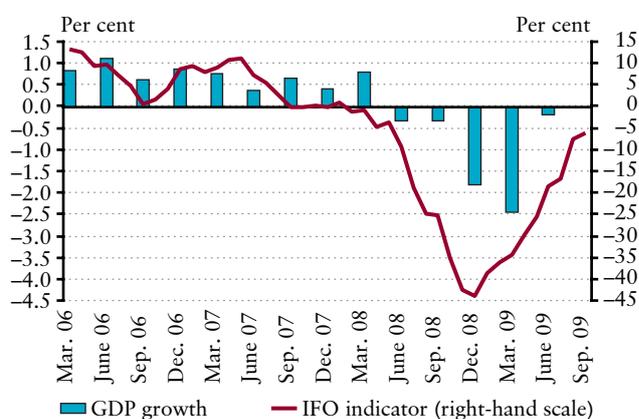
<sup>4</sup> The Fed announced a programme for the purchase of mortgage-backed securities of government sponsored enterprises with a volume of USD 1,250 billion, which accounts for more than 20 per cent of the total outstanding amount. All other asset purchase programmes remain below 5 per cent of the outstanding amount.

**Table 1-1****Spreads of main financial markets prior to the default of Lehman Brothers and at present***(in basis points)*

	Pre-crisis period	Turbulence	Crisis	Consolidation	Recent period
	Jan. 2007– July 2007 average	Aug. 2007– 14 Sep. 2008 average	15 Sep. 2008– Nov. 2008 average	Dec. 2008– Aug. 2009 average	Sep. 2009 average
Inter-bank spreads (3-month LIBOR – OIS):					
– USD	8	68	222	78	12
– GBP	10	70	195	111	27
– EUR	5	62	150	76	34
5-year CDS spreads of the banking sector:					
– US	18	158	209	211	115
– UK	7	97	140	167	137
– Eurozone	9	79	146	197	114
– Average of the parent banks of the domestic banking sector	21	81	153	206	129
The 5-year average sovereign CDS spreads:					
– US	-	11	33	53	23
– UK	-	13	52	100	50
– Eurozone	5	18	61	103	60
5-year CDS spreads of investment grade corporate sector:					
– US (CDX)	37	105	198	176	107
– Europe (ITRAXX)	25	76	143	145	88

Sources: Thomson Datastream, Bloomberg.

July 2009. While the value of the ECB's asset purchase programme is rather small relative to its balance sheet, the intervention can be considered fairly significant compared to the size of the covered bond market.<sup>5</sup> The asset purchases initiated by the central banks have contributed significantly to reviving securitisation and increasing liquidity. The market liquidity of long-term uncovered debt securities has also improved. The number of bond issuances has gradually increased. Even without government support, stronger banks are capable of issuing an increasing number of debt securities. Although weaker banks continue to rely on public support in raising long-term funds, the issuance of government guaranteed securities has declined. The reason is not only an improving money market environment, but also the fact that markets perceive government support as a negative sign. Improved financing conditions are also clearly reflected by the fact that, in several cases, funding costs have fallen below the levels prior to the bankruptcy of Lehman Brothers (see Table 1-1). Although the scope and size of the central bank and government measures have significantly dampened the impact of a systemic crisis similar to the bankruptcy of Lehman Brothers, money and credit markets are still unable to function independently, and financial conditions continue to be tight. The regeneration of key markets must continue in order to enable the financial system to perform its intermediary function efficiently once again.

**Chart 1-4****Quarterly GDP growth in the euro area and the German IFO sentiment indicator**

Note: GDP real growth rates are shown on the basis of quarterly/previous quarterly data. The IFO sentiment indicator presents the difference between the optimistic and pessimistic companies in percentage.

Sources: Eurostat, CESifo.

**The global economic outlook has improved as well. Reinforcement of the financial system in the developed countries and the substantial monetary and fiscal stimulus have mitigated the depth of the economic recession, and significantly improved the future outlook.**

<sup>5</sup> The covered bond purchase programme of the ECB represents nearly 10 per cent of the total market size.

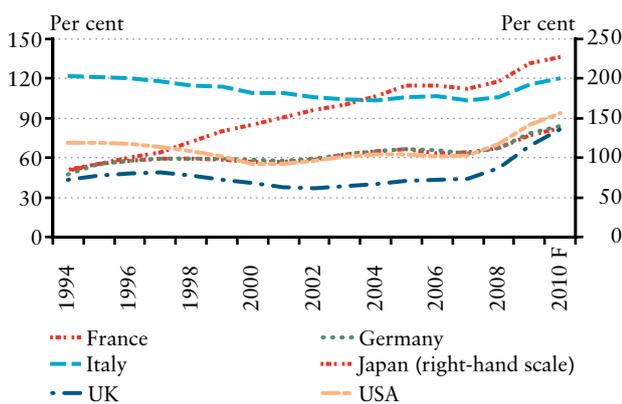
Recovery has already started in Asia, which is considered to be the main driving force of the global economy, and according to international institutions, economic growth is expected to rebound in other parts of the world during the second half of 2009 or at the beginning of 2010 at the latest. The fact that a number of economic indicators have proved to be unexpectedly positive in recent months is a particularly favourable development. In the euro area, confidence indices suggest that expectations have improved consistently since the beginning of the year, while the economy performed above earlier expectations (see Chart 1-4) in the second quarter.

**Due to the sustainability risk of public debt, government intervention is expected to inevitably decline in developed countries, which may impede economic recovery.** In the developed countries the fiscal economic stimulus packages (provided in the form of direct financial transfers, government lending and tax reductions<sup>6</sup>) may become mid-term risk factors as a result of excessive budget burdens (see Chart 1-5). Higher financing requirements and the related increase in funding costs significantly boost the risks related to the sustainability of public debt levels. Moreover, beyond a certain point fiscal expansion may hinder, rather than support, economic recovery. In most developed countries the interest rate channel has reached its limit, while increasing public debt combined with higher risk premia may lead to an increase in the general interest rate level which, as opposed to the original intentions, may crowd out private sector investment and reduce household consumption.<sup>7</sup> Sustainability risks will inevitably force developed countries' governments to reduce their

interventions. However, it is uncertain how long it will take to re-start the automatic mechanisms of the financial system and the economy. If central banks and governments cut back their support of the financial system's operation and abandon economic stimulation prematurely, the recession could deepen once again. In this case a U-shape or a W-shape growth path may occur as opposed to a rapidly rising V-shape path. According to the U-shape path a persistent period of slow growth is expected, while the W-shaped path forecasts another recession before a recovery can start.

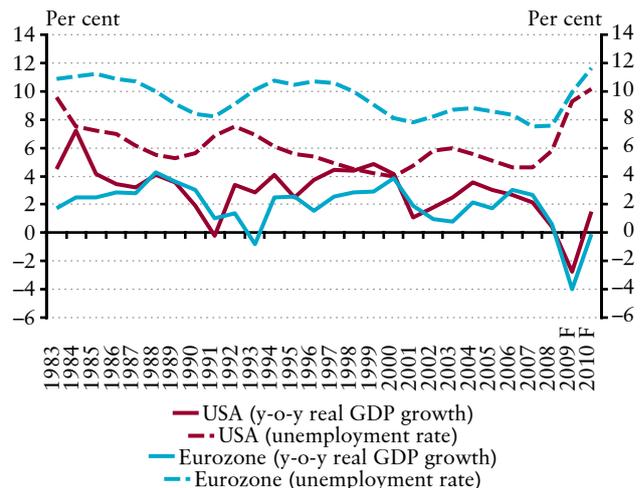
**Growing unemployment and the still vulnerable banking sector may slow down the central banks' and governments' withdrawal from monetary and fiscal stimulus.** A number of factors suggest that the economy and the financial system are still fraught with problems, which means that a premature exit from government measures may hinder economic recovery. The impact of the crisis on the labour markets remained moderate until recently. There may be a prolonged period of rising unemployment (see Chart 1-6); therefore a recovery could be delayed or even impeded by the deteriorating expectations and rising precautionary savings of households. The significant depreciation of households' financial and housing assets may also lead to a prolonged period of subdued internal consumption. Finally, the deterioration of loan portfolio quality may be persistent, which might jeopardise the stability of the financial system.

**Chart 1-5**  
**Gross public debt to GDP in developed countries**



Note: IMF forecasts for 2009 and 2010. The 2008 data are estimated for Germany, Japan and the USA.  
Source: IMF WEO Database.

**Chart 1-6**  
**GDP growth and unemployment in the USA and the Eurozone**



Note: IMF forecast for 2009 and 2010.  
Sources: IMF WEO Database, Eurostat.

<sup>6</sup> For instance the support granted to car manufacturers in the USA, the introduction of the so-called "cash for clunkers" in Germany, and the lowering of tax rates in the hospitality industry in France.

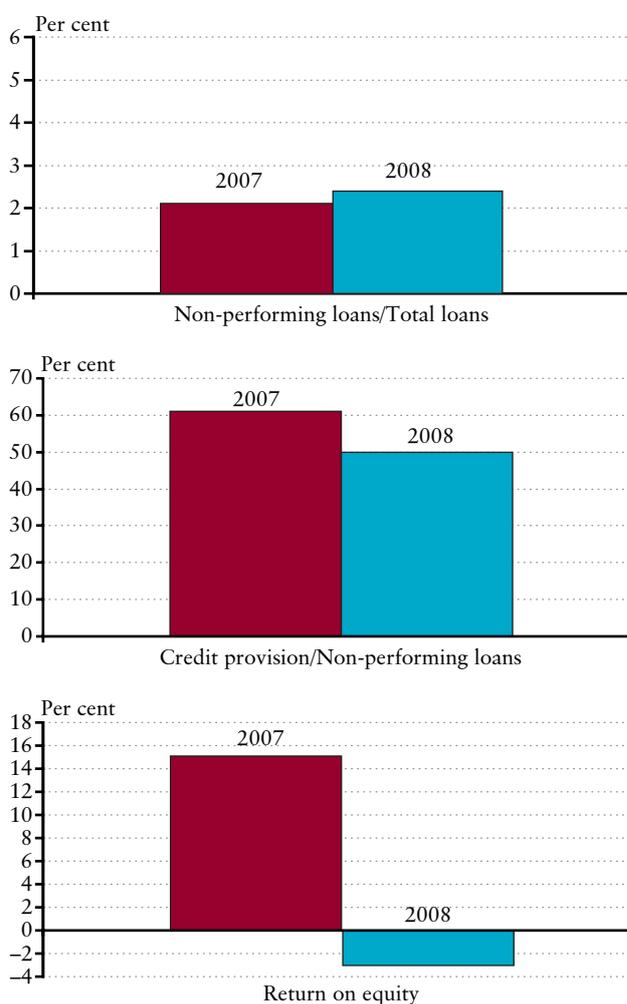
<sup>7</sup> See the summary paper in IMF: *Companion Paper-The State of Public Finances: Outlook and Medium-Term Policies After the 2008 Crisis*. <http://www.imf.org/external/np/pp/eng/2009/030609a.pdf>.

**The main reason behind the vulnerability of the financial system is the uncertainty surrounding the future magnitude of portfolio deterioration and its impact on banks' profitability.** In 2008 the share of non-performing loans in the portfolio of US banks quadrupled to reach 4 per cent.<sup>8</sup> This massive portfolio deterioration was primarily the consequence of a sharp fall in housing prices and rising unemployment. Albeit to a lesser extent, the share of non-performing loans in Europe also increased in 2008, reaching 2.4 per cent compared to 2.1 per cent in the previous year.<sup>9</sup> The more moderate increase is attributed to the protracted effect of the crisis on the labour market and banks' portfolio quality in Europe. Losses from portfolio deterioration can be absorbed by banks' before provisioning earnings or as a last resort, by their capital. However, the profitability of banks across the EU declined significantly in 2008, while in late 2008 and early 2009 the banking sector reported a negative profit due to losses on structured products and trading activities. It can be regarded as an unfavourable development, as in the case of the core activity significant portfolio deterioration is still to come. In addition, provisioning, and hence a decline in income may accelerate due to decreasing ratio of impairment provisions to non-performing loans. By contrast, the capital adequacy of the European banking sector shows some slight improvement as a result of capital injections by the public authorities and the market. Despite the losses, in 2008 the CAR (capital adequacy ratio) increased to 11.7 per cent from 11.4 per cent, while the Tier 1 CAR rose to 8.2 per cent from 8.1 per cent. Since recapitalisation in the European banking sector exceeded write-offs, the capital buffer is expected to have strengthened further in the first half of 2009.<sup>10</sup> The absorption of losses caused by the recessionary environment and withstanding further shocks – i.e. a deeper, more protracted economic downturn – are the biggest challenge to the banks' capital buffers, which might eventually result in further recapitalisation and balance sheet downsizing.

**Banks in developed countries are adjusting by continuous deleveraging.** Banks in developed countries are steadily deleveraging their balance sheets as they adjust to the new macroeconomic and financial market environment (see Chart 1-8). This has been particularly true in the United States and the United Kingdom, and to a lesser degree in the euro area. At present, the leverage of the banking sector in all three of these areas falls behind the level of early 2002. Strengthening of banks' capital adequacy is contributing to the deleveraging process. On account of their massive, partly public capital

Chart 1-7

### Portfolio quality and profitability of the EU banking sector



Source: ECB EU banking sector stability report.

injections the United States and the United Kingdom stand out in this process. Beside the waves of capital injections, however, stagnating or narrowing balance sheet totals have also contributed to the deleveraging process. Due to shrinking central bank balance sheets, weakening lending activities and the reduction in the excessive liquidity on the market, the balance sheet totals of the banking sectors in all three of these areas have declined consistently since the beginning of 2009. It is also important to note that the declining issuance of structured products and the dismantling of the shadow banking sector may lead to a more subdued off-balance sheet activity as well.<sup>11</sup> For the Hungarian banking system, the development of banking activities in the Eurozone is the key factor. If Eurozone

<sup>8</sup> Source: Federal Institutions Examination Council.

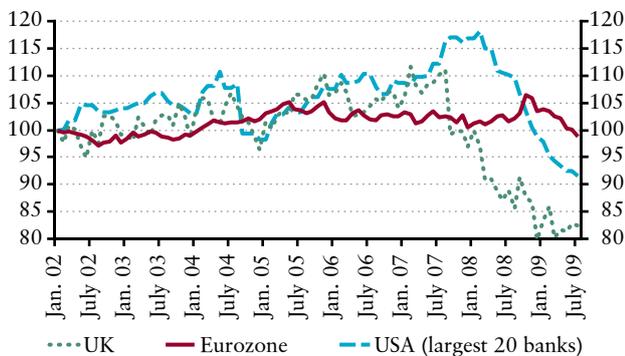
<sup>9</sup> Source: *EU Banking Sector Stability*, a publication of the ECB. <http://www.ecb.int/pub/pub/prud/html/index.en.html>.

<sup>10</sup> According to the information of Bloomberg, in the first half of 2009 the write-offs reported by the banking sector of the EU amounted to around EUR 50 billion, while banks were able to access to a total of EUR 70 billion fresh capital.

<sup>11</sup> About the size of off-balance sheet items see: *Report on Financial Stability* (October 2008). [http://www.mnb.hu/Engine.aspx?page=mnbnhu\\_stabil&ContentID=11578](http://www.mnb.hu/Engine.aspx?page=mnbnhu_stabil&ContentID=11578).

**Chart 1-8**  
**The leverage of developed countries' banking system**

(total assets/capital) (2002 Jan. = 100)



Note: Based on the ECB data, leverage applies to the overall banking sector in the United Kingdom and the euro area. Based on the Bloomberg data, leverage is the weighted average of the 20 largest banks of the United States.

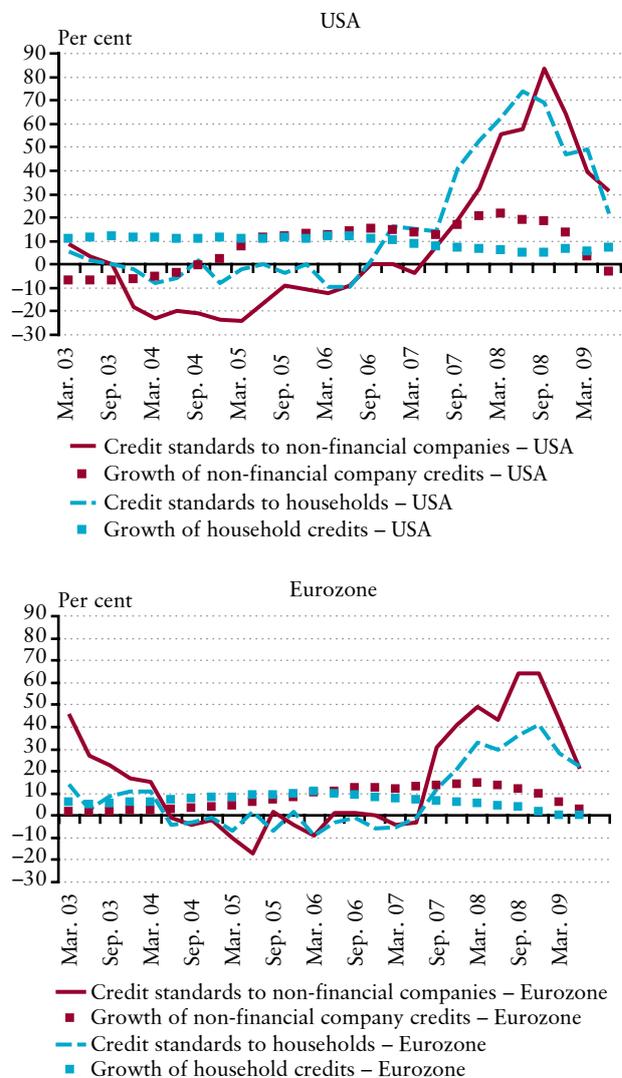
Sources: ECB, Bloomberg.

banks reduce their activity more than justified by the weakening credit demand this would have a negative impact on lending not just in Hungary but through decreasing external parent bank financing in the host market as well. This risk is further exacerbated by the low income-generating capacity of parent banks. Many Eurozone banks have been generating low profits or losses on an unconsolidated basis (not taking into account the earnings of subsidiaries and other entities) recently. As a result, internal capital accumulation is strongly limited, and moreover losses at many institutions are leading to deterioration in capital adequacy, which can force the parent banks to accelerate their deleveraging process and their repatriation of subsidiaries' profits.

**As a consequence of the protracted adjustment in the banking sector, tight non-pricing credit standards may persist.** In developed markets, changes in banks' credit standards may signal potential turning points in lending activity, and thereby, in real economic activity.<sup>12</sup> As a result of continuous deleveraging to improve capital adequacy and banks' low risk appetite, there have been no positive developments in credit conditions to date (see Chart 1-9). According to the senior loan officer surveys of the Fed and the ECB, increasing liquidity risks and the deteriorating macroeconomic outlook have clearly led to tightening pricing and non-pricing conditions in the previous year. Recent surveys from the aforementioned central banks point to the fact that the lending conditions remained tight in the first half of 2009, however it was due to the uncertain economic

prospects, low risk tolerance and industry-specific problems rather than liquidity risks. Although central bank interventions have improved price conditions, persistently tight credit standards suggest weak future lending activity. This risk is being mitigated by a strengthening disintermediation process in developed countries. Larger and stronger firms are financing themselves via the capital market primarily via bond issuance as this option is cheaper than bank loans. This is clearly reflected by the fact that the CDS spreads on investment grade firms are lower than those of banks and have also dropped to pre-crisis level (see Table 1-1).

**Chart 1-9**  
**Credit standards (difference between the ratio of banks indicating tightening vs. easing) and annual credit growth in the United States and the euro area**



Sources: ECB, Fed.

<sup>12</sup> For further details see: Cara Lown and Donald P. Morgan (2006): The Credit Cycle and the Business Cycle: New Findings Using the Loan Officer Opinion Survey, *Journal of Money, Credit and Banking*, Blackwell Publishing, Vol. 38(6) September, pages 1575-1597.

## 1.2 Domestic money market environment is improving and the country has become less vulnerable, while economic agents face a deep recession

**Investor sentiment in the region – including Hungary – has improved significantly.** Due to the improving global investment climate and recovering risk appetite, CDS spreads<sup>13</sup> of Central and Eastern European countries have been narrowing continuously since March 2009 (see Chart 1-10, Table 1-2). Despite this remarkable decrease, the level of CDS spreads still exceeds the levels before the default of Lehman Brothers. Narrowing CDS spreads have encouraged the issuance of foreign currency denominated government bonds in several countries in the region. Although the amounts of the government bond series fell behind – while their spreads significantly exceeded – the levels before October 2008, the issues proved that the countries of the region can again obtain funds from the market on their own. In July 2009 Hungary successfully issued a EUR 1 billion bond

with a maturity of 5 years and a spread 425 basis points above the comparable German government bond, which further boosted confidence in Hungary. In addition, due to the successful fiscal consolidation the rating agency S&P revised the outlook on Hungary's credit rating to stable from negative. Furthermore, the strengthening of the financial systems and economies in the region may also contribute to boosting investor confidence. However, GDP figures in the region have been rather unfavourable up to now, except for Poland, which has a somewhat less open economy. The Baltic States are in a deep recession; their banking sector is suffering from drastically falling housing prices. Finally the high ratio of foreign currency denominated loans poses a serious problem in Hungary, Poland and the Baltic states making them extremely vulnerable to an external risk premium shock.

**Table 1-2**

### Five-year CDS spreads and fixed-interest rate on Eurobond issues of CEE countries

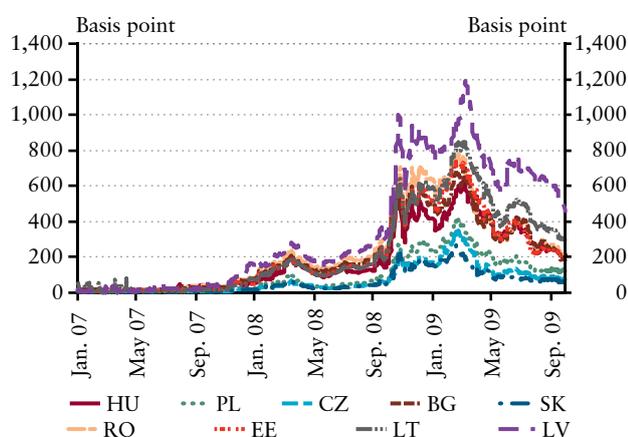
Country	Issuance	Maturity (year)	Amount (euro bn)	Coupon (%)	Bund margin (bp)
Poland	18 Jan. 2007	15	1.5	4.50	32.2
Hungary	1 Feb. 2007	10	1.0	4.38	28.3
Slovakia	15 May. 2007	10	1.0	4.38	12.5
Lithuania	29 Oct. 2007	10	0.6	4.85	68.3
Latvia	5 Mar. 2008	10	0.4	5.50	163.8
Hungary	11 June 2008	10	1.5	5.75	120.8
Czech Republic	11 June 2008	10	2.0	5.00	45.8
Romania	18 June 2008	10	0.8	6.50	188.6
Poland	20 June 2008	10	2.0	5.63	98.8
Lithuania	29 Jan. 2009	7	0.1	9.95	647.6
Poland	2 Feb. 2009	5	1.8	5.88	291.8
Czech Republic	5 May 2009	6	1.5	4.50	163.8
Slovakia	21 May 2009	6	2.0	4.38	141.5
Lithuania	22 June 2009	5	0.5	9.38	644.7
Hungary	28 July 2009	5	1.0	6.75	424.2

Sources: Thomson Datastream, MNB.

<sup>13</sup> For further details, see: Kornél Kisgergely: "What moved sovereign CDS spreads in the period of financial turbulence?" (Background study I.), November 2009, [http://english.mnb.hu/Resource.aspx?ResourceID=mnbfile&resourcename=stabjel\\_1\\_kisgergely\\_200911\\_en](http://english.mnb.hu/Resource.aspx?ResourceID=mnbfile&resourcename=stabjel_1_kisgergely_200911_en).

Chart 1-10

### Five-year CDS spreads and fixed-interest rate on Eurobond issues of CEE countries



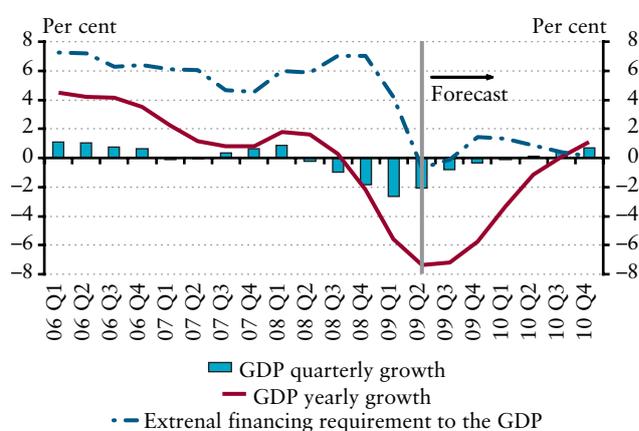
Note: Hungary (HU), Poland (PL), Czech Republic (CZ), Slovakia (SK), Romania (RO), Bulgaria (BG), Estonia (EE), Lithuania (LT), Latvia (LV).

Sources: Thomson Datastream, MNB.

In Hungary, balance sheet adjustments in the private and public sectors drastically reduce the country's main source of vulnerability, the external financing requirement, but deepen the economic recession at the same time. Due to Hungary's high level of financial and economic integration, the changes in developed economies have led to adjustments in the private sector and an economic downturn in Hungary as well. However, because of the country's large net external debt, the level of adjustment of private and public sectors in Hungary is inevitably faster and larger compared to other countries. At the same time this rapid adjustment decreases Hungary's vulnerability – i.e. it lowers the external financing requirement – and contributes to the deepening of the recession. In 2009, the ratio of external financing requirement to GDP is expected to decrease to 0.9 per cent compared to 7.6 per cent in the previous year and then to improve further slightly in 2010 (see Chart 1-11). Moreover there are downside risks to the country's external financing requirement in the two years ahead. Nonetheless, the situation appears to be less favourable when one takes into account that Hungary's debt ratio is still high in international comparison, and only a gradual decline can be expected over the long term.<sup>14</sup> Improvement in the external balance cannot take place without a negative impact on the economic performance. As a result of the global economic recession and the deleveraging process in the private and public sectors, the Hungarian economy has been in recession since the middle of 2008. Following a decline of around 7 per cent in 2009, the economic output may contract only slightly in 2010 and may grow again in 2011.

Chart 1-11

### The external financing requirement and GDP growth in Hungary



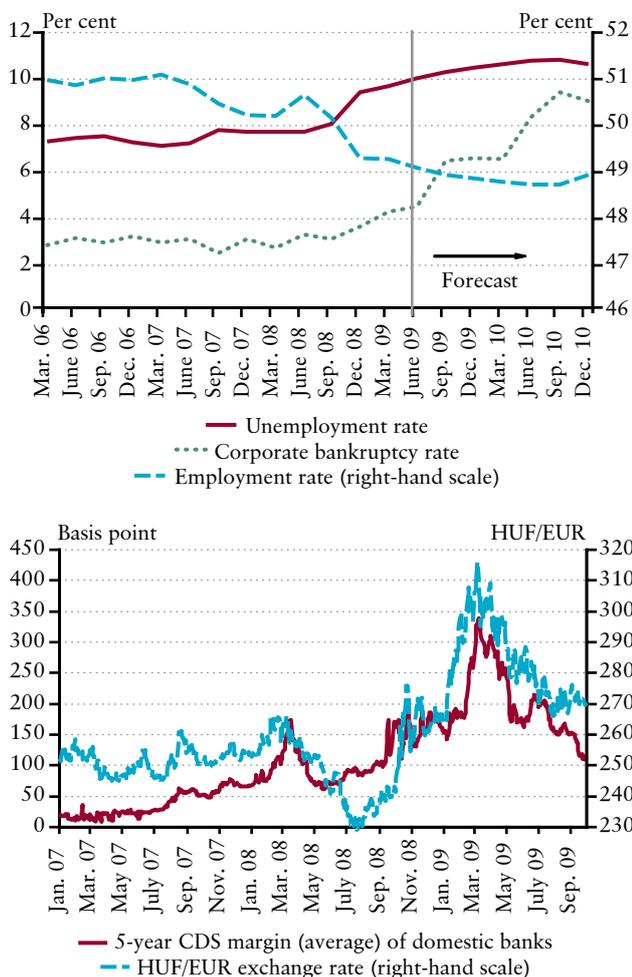
Sources: HCSO, MNB.

As a consequence of the severe economic downturn, the income position of the private sector is deteriorating, which is only partly offset by the declining debt burden due to the strengthening HUF exchange rate and moderating external financing costs. The income position of the corporate sector has been affected extremely adversely by the simultaneous decline in external and internal demand. In particular, the construction, manufacturing and service sector have been hit hard by the slump in activity. In these sectors the ratio of bankrupted companies increased drastically in the first half of the year, with the bankruptcy rate exceeding 5 per cent (see Chart 1-12). As for the domestic economy as a whole, the bankruptcy rate is currently around 4.5 per cent, and may peak by the end of 2010. Companies have adjusted wages and employment to offset deteriorating profitability, but the extent of these adjustments has fallen short of our expectations so far. This may lead to a larger-than-expected decline in corporate profitability and a steeper increase in the bankruptcy rate, or may further accelerate wage and employment adjustments. It remains to be seen whether the smaller-than-expected adjustment by firms will eventually lead to a deterioration of the household sector's income position during a potential acceleration of the corporate sector or labour market adjustment. Reflecting companies' wage adjustments, our current forecast indicates a slight moderation in real household wages for 2009. However, primarily as a result of a less drastic economic downturn and the lowering of personal income tax, wages may start to increase again in 2010. The unemployment rate may increase at a decelerating pace until the second half of 2010, approaching 11 per cent, while at the same time the

<sup>14</sup> For further details see: *Report on Financial Stability* (April 2009). [http://www.mnb.hu/Engine.aspx?page=mnbhu\\_stabil&ContentID=12306](http://www.mnb.hu/Engine.aspx?page=mnbhu_stabil&ContentID=12306).

**Chart 1-12**

**Relevant real economic and financial variables affecting the private sector income in Hungary**



Sources: Thomson Datastream, HCSO, MNB.

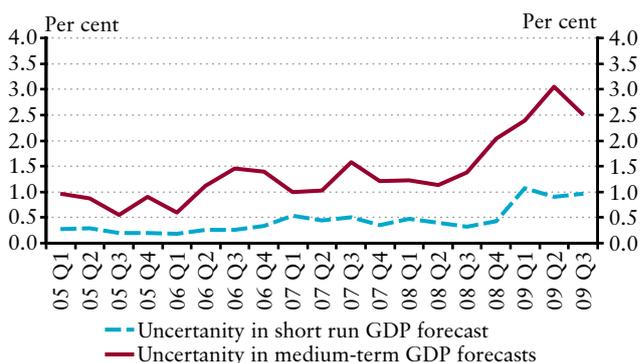
employment rate may drop below 49 per cent. The turning point in labour market developments is not expected until the last quarter of 2010. On the whole, these developments will result in a significant deterioration in the income position of households in 2009, and a somewhat more moderate one in 2010. Changes in the exchange rate and interest rates on foreign currency denominated loans are crucial for the income position of the private sector due to the high level of foreign currency indebtedness in the corporate and household sectors. The HUF exchange rate has been strengthening continuously since March 2009, while the costs of external financing have moderated. However, the positive effect of these two factors on loan rates may have been dampened, particularly in the household segment, by

the high credit risk premia and high domestic financing costs associated with fierce retail deposit competition.<sup>15</sup>

**Growth outlook of the Hungarian economy has improved, but the risk of persistently low economic growth is still high.** Economic growth in the euro area, which is Hungary's main trading partner, represents the most significant uncertainty factor. The fact that Germany and France reported positive economic growth for the second quarter of 2009 is a positive development, which may improve the growth outlook of the CEE countries exporting predominantly to the euro area, such as Hungary. Nonetheless, there are still several downward risks to Eurozone economic growth. Since the euro area has a rigid labour market, in the recessionary economic environment the necessary employment adjustment will be a prolonged process. Moreover, as a result of the portfolio deterioration, European banks may incur even more substantial losses which, due to their sustained negative profitability, may increase the vulnerability of the financial system. Furthermore, the extent of central bank and government market interventions, as well as the size of the economic stimulus packages are considered low in international comparison. In addition to external factors, a number of internal factors increase the risk of persistently low economic growth as well. For example, the uncertainty surrounding the budget for 2010<sup>16</sup> and banks' weak lending activity are such key factors. The pro-cyclical behaviour of the budget and the banks may contribute to continued weak internal demand.

**Chart 1-13**

**Uncertainty in the GDP forecast for Hungary**



Note: Short-term uncertainty in GDP forecast: deviation of the analysts' GDP forecasts for the quarter, upon filling out the Reuters' survey questionnaires and calculate on the basis of quarter/previous quarter data. Medium-term uncertainty in GDP forecast: deviation of the analysts' GDP forecasts for the present year and next year, in year-on-year terms.

Sources: Reuters, MNB.

<sup>15</sup> For further details, see Chapter 2.1.

<sup>16</sup> For further details see: Quarterly Report on Inflation (August 2009). [http://www.mnb.hu/Engine.aspx?page=mnbbu\\_inflacio\\_hu&ContentID=12970](http://www.mnb.hu/Engine.aspx?page=mnbbu_inflacio_hu&ContentID=12970).

The pro-cyclical behaviour of the budget is primarily reflected in the contracting government transfers and the restraining effect of the July value-added tax and excise duty increase on consumption. These factors, combined with rising unemployment and the financial wealth loss during the recession, may increase the precautionary savings of

households. The pro-cyclical behaviour of the banking sector manifests mainly in the persistently tight credit conditions.<sup>17</sup> All in all, due to the above mentioned factors the future market perception of domestic growth is highly uncertain (see Chart 1-13).

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<sup>17</sup> For further details, see Chapter 2.1.



## **2 Risks of financial institutions**





In the Report on Financial Stability published in April 2009 three major threats were identified: the negative economic consequences of financial system adjustment, the high liquidity risk and the high solvency risk. The following factors were highlighted in April as the most important components of liquidity risk: the high loan-to-deposit ratio, the significant reliance on external funding, the shortening maturity of the foreign liabilities, the large stock of FX-swaps and disturbances in the operation of key markets. Among the solvency indicators, the increasing loan losses in the banking sector and stresses on capital adequacy were emphasized.

Since the publication of the April Report, market and liquidity risks have declined substantially due to the stabilisation of the developed money markets, and local central bank, government and parent bank intervention. Currently the financial system has ample HUF liquidity, and normalisation of foreign currency swap markets allows an undisturbed flow between different currencies. The macro-prudential analysis concentrates on the adjustment of the banking sector and the extent of losses arising from loan portfolio deterioration.

As a result of private sector adjustment, the loan portfolio of the financial system has been continuously shrinking. In response to the recessionary environment companies and households have been restraining their credit demand and banks have been maintaining tight price and non-price credit conditions. The improvement in the private sector's net financing position is reflected by the decreasing loan-to-deposit ratio of banks. As Hungary was hit by the crisis at the same time as it faced a significant external imbalance, the adjustment has been faster and the decline in the loan-to-deposit ratio has been steeper than the regional average. In addition, the adjustment of the banking sector not only decreased reliance on external funds, but – through restrained foreign currency lending and foreign currency deposit placements of the private sector – also triggered a decline in the volume of outstanding FX swaps; in other words, the banks' exposure to the FX swap market has moderated.

Owing to the deteriorating portfolio quality, banks face sharp rises in loan losses. The most significant deterioration in portfolio quality has been in corporate project loans and unsecured household loans. Banks' efficient workout activities together with government interventions dampen the quality deterioration of the mortgage loan portfolio and hence reduce the related losses, or smooth out their impact. The loan portfolio quality of other financial intermediaries has deteriorated as well; in fact the extent of the deterioration has significantly exceeded that of bank portfolios, due to the high ratio of vehicle purchasing loan and car lease denominated in foreign currency in their portfolio. Regarding the bank portfolio, loan loss rates for corporate loans are expected to continue to rise until the end of 2010, while in the case of

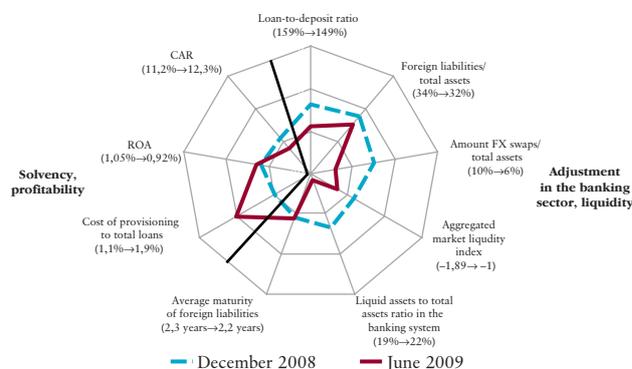
households a slow decline is expected from the beginning of next year. The loan loss rate of the non-bank portfolio may continue to increase until the end of 2010.

Over the past half year the profitability of the banking sector – i.e. the sector's primary buffer for withstand shocks – has remained favourable. Despite rising credit risk costs, in 2009 H1 the domestic banking sector generated almost the same amount of profit as in the same period of 2008. However, as one-off factors accounted for a large part of this unexpectedly good performance, it will be increasingly difficult for banks to offset the profit-reducing effect of credit losses in the future, which will result in continuously decreasing profits. This trend may be exacerbated by the fact that non-bank financial institutions have already been reporting a steep fall in profits, which are expected to turn negative at the end of this year. Losses at bank-owned financial enterprises may also result in a marked deterioration in the profit of banking groups.

Capital adequacy – the other source of the banking sector's shock absorbing capacity – has been subject to positive developments as well. In the first half of 2009 the capital adequacy of the domestic banking sector improved significantly and in international comparison, the level of the capital adequacy ratio is high. A sufficient level of capital adequacy is important from two aspects. On the one hand, a sufficient amount of capital is required to absorb loan losses. On the other hand, strong capital capacity is essential to support lending activity and economic recovery in the post-crisis environment. The current level is sufficient along the macroeconomic baseline scenario, and the recessionary environment is not expected to require further notable recapitalisation.

Chart 2-1

### Main risk indicators in December 2008 and June 2009



Note: Standardised values, scaled data into interval of 0 and 1 based on minimum and maximum values between beginning of 2005 and June 2009. Data points closer to the centre of the figure express lower risks. Figures in brackets indicate the values of given indicators in December 2008 and June 2009.

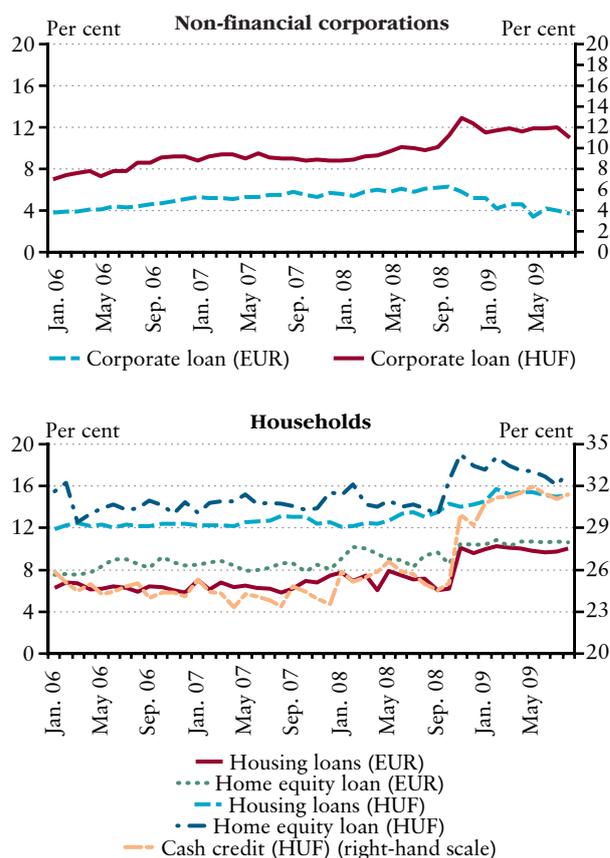
Source: MNB.

## 2.1 Tight price and non-price credit conditions largely contribute to weak lending activity

**Tight price conditions are not expected to ease, as rising credit risk premia are offsetting the decline in external financing costs.** In November 2008, newly announced interest rates increased significantly for all banking products, which primarily reflected the rising refinancing costs stemming from a drastic deterioration in liquidity conditions (see Chart 2-2).<sup>18, 19</sup> The previously dominant Swiss franc denominated loan products practically disappeared from the market. On the one hand, banks systematically priced out these products, while on the other hand, in an effort to reduce credit risk significantly, they imposed tight credit conditions. Essentially, only HUF- and euro-based loan products remained in the market; however, their interest rates are higher compared to Swiss franc-based loan products. Despite the decline in banks' foreign funding costs, household lending rates stabilised at high levels after November 2008. Due to the ECB's interest rate cut and a decrease in the sovereign CDS spread, from the spring of 2009 the cost of banks' external foreign currency financing started to moderate.<sup>20</sup> Nevertheless, household lending rates have not been lowered since November 2008. This may have two underlying reasons. On the one hand, in order to improve their loan-to-deposit ratios banks applied high, in most cases double-digit retail deposit interest rates independently from the development of central bank policy rate.<sup>21</sup> Parallel to these developments, credit risk and loan provisioning increased significantly, which were compensated by banks setting higher lending rates. A different trend can be observed for corporate loans. Euro-denominated products have been on a continuous decline since October 2008. Meanwhile, interest rates on HUF-denominated corporate loans fell following the interest rate cuts of the central bank in August 2009. The future development of interest rates will largely depend on how competitive will be the HUF-denominated loans against euro-denominated loans. Interest rates of household loans denominated in HUF and euro remained unchanged in August 2009 due to banks' fierce deposit competition and increased credit risk premia; thus the significant interest rate differential between HUF- and euro-denominated products remained unchanged until August 2009. In September and

Chart 2-2

### Banks' main lending rates on new contracts



Note: For household loans APRC (annual percentage rate of charge). Newly granted loans.

Source: MNB.

October 2009, however, several HUF-denominated mortgage loans appeared on the market with interest rates around 10 per cent. It is expected, accordingly, that the difference between the interest rate of HUF- and euro-denominated household loans will decline. In respect to corporate loans, the interest rate differential increased until August 2009, reflecting the faster decline of euro-denominated lending rates relative to HUF rates. Similar to household products in the case of corporate loans the interest

<sup>18</sup> In the case of euro-denominated household mortgage loans the market entry of several large banks contributed to the rising interest rates.

<sup>19</sup> Banks' interest spreads indicate that the increased funding costs were only partly transferred to customers. For further details, see Chapter 2.5.

<sup>20</sup> This effect mechanism may have been dampened by the fact that – as banks transferred only a part of their increased cost of funds to customers in 2008 Q4 – lending rates could only partly follow the moderation of the cost of funds from March 2009 as well.

<sup>21</sup> In August the promotional deposit interest rates of the largest banks remained 10-11 per cent, which implied a decrease by 50 basis points compared to July. At the same time, the central bank base rate decreased by 150 basis points between the end of July and the end of August.

rate differential is expected to start declining in the future as well. The major risk in the development of interest rates is the uncertainty surrounding the expected loan losses. Banks are unable to assess future credit risks precisely; therefore they are inclined to incorporate a higher premium into interest rates than the expected losses, which may hinder economic recovery.

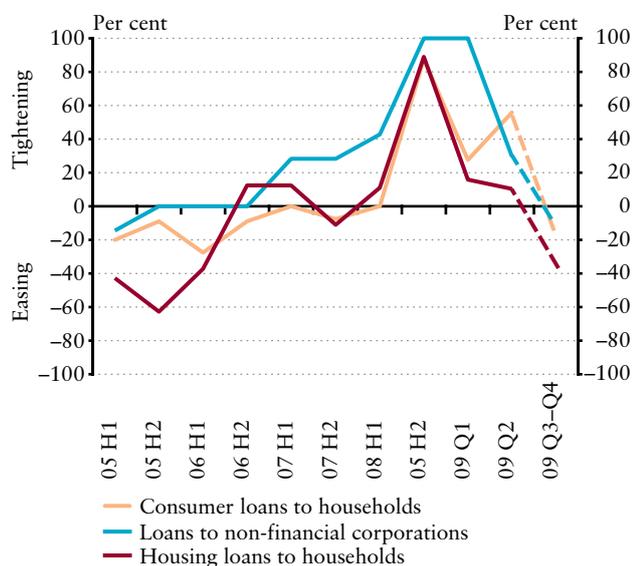
**Credit conditions for both corporate and household loans continue to tighten, but at a slower pace.** In line with global trends, Hungarian banks' willingness to lend continued to decline in 2009, and lending conditions for companies and households tightened further (see Chart 2-3). The pace of tightening has slowed down considerably, however, as less and less banks are willing to change the already tight credit conditions even further. The responses suggest that the series of tightening moves is mainly due to the expected impact of the economic downturn and banks' increasing risk aversion, rather than liquidity risks. The deterioration of non-price conditions was manifested primarily in the tightening of collateral requirements and the reduction of maximum maturities for corporates, and in the raising of minimum down payments [declining maximum

loan-to-value ratio (LTV)] and in the lowering of the PTI limit (payment-to-income) for households. Due to the strong interaction between the banking sector and the macroeconomy, persistently tight credit market conditions imply a significant risk to economic growth. One promising development is that banks intend to gradually ease conditions in all credit segments from the final quarter of 2009.

**Lending to the private sector has decelerated considerably with no turning point in sight until the end of 2010 or the beginning of 2011.** The domestic loan portfolio of enterprises has been declining since the end of November 2008 (see Chart 2-4), with an extremely significant fall of nearly HUF 140 billion in 2008 Q4. Although the contraction has eased somewhat since then (HUF 90-100 billion), it is still considered to be high.<sup>22, 23</sup> Short-term loans (typically used for financing working capital) declined more severely than long-term borrowings (typically used for financing investments). Looking at the size of companies, compared to large corporations, the borrowings of small and medium-sized enterprises decreased more significantly. In terms of denomination, no clear trend can be discerned, with both foreign currency loans and HUF loans on the decline. In addition to domestic bank loans, non-bank corporate lending has become subdued as well. It should be noted that the increase in direct external financing partly offset the decline in domestic loans. Nevertheless, this probably improved the funding of large corporations, rather than small and medium-sized enterprises. In this case, however, the assessment is hindered by the fact that direct external loans are supposedly related to declared but not-settled dividend payments. The growth rate of households' bank loans has also decelerated significantly. In the past households' bank loans had increased by a monthly amount of HUF 100 billion on average, whereas from November 2008, the stock increased only slightly or remained largely unchanged. The decline in foreign currency mortgage loans alone accounted for the deceleration of bank lending. At the same time, it should be noted that households' non-bank borrowings (vehicle purchase financing) declined to a larger extent than bank loans which led to a contraction in overall household debt in 2009 H1. In our view, a future rebound in lending will lag behind economic recovery.<sup>24</sup> A notable increase in the loan portfolios is only expected at the end of 2010 or at the beginning of 2011, after a recovery in external demand, a pick-up in investment projects and a decline in bankruptcy rates and unemployment.

**Chart 2-3**

**Changes in credit conditions of non-financial corporations and households**



Note: The scale indicates the difference between the market share of 'tighteners' and 'easers'. A positive value indicates that the majority of banks intend to tighten credit conditions.

Source: MNB.

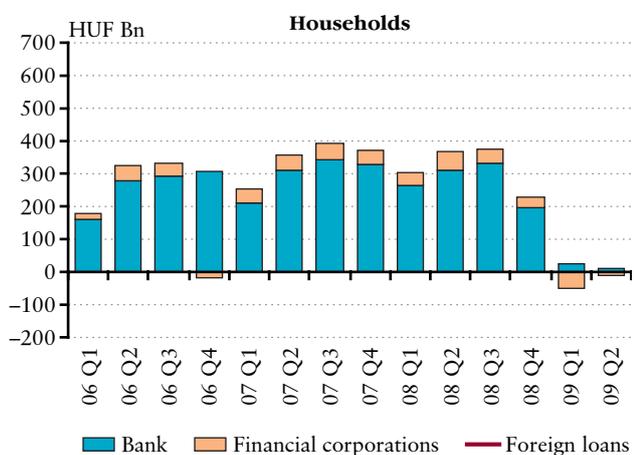
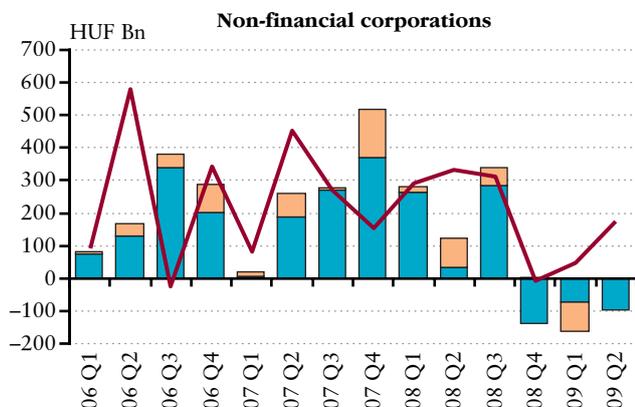
<sup>22</sup> It should be noted that reliance on bank loans may have increased significantly in this period due to the drying up of alternative financing channels (commercial lending). As a result, the continuing decline of bank loans indicates a rather more severe financing problem.

<sup>23</sup> Corporate lending must be maintained by banks, which received state loans or participated in the 6-month FX-swap tender of the central bank. These instruments have been unable to prevent the contraction in corporate lending, but they moderated the credit supply side constraints.

<sup>24</sup> Laeven, Luc and Valencia, Fabian (2008): Systemic Banking Crises: A New Database, *IMF Working Paper* No. 08/224. <http://www.imf.org/external/pubs/ft/wp/2008/wp08224.pdf>.

**Chart 2-4**

**Changes in the outstanding amount of private sector loans**



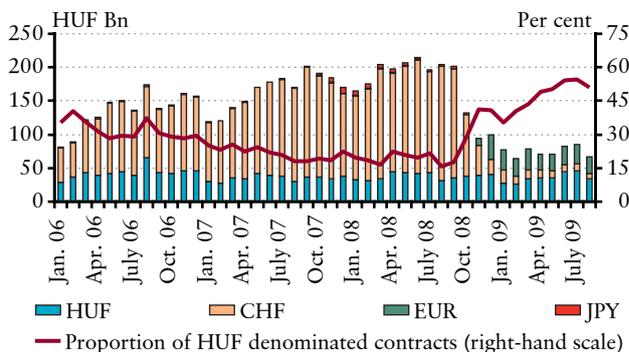
Note: Changes adjusted for exchange rate effect.

Source: MNB.

**Household borrowing has shifted away from Swiss franc denominated products to HUF- and euro-denominated loans.** The decline in the net borrowing of

**Chart 2-5**

**Foreign currency composition of households' new bank loans**



Source: MNB.

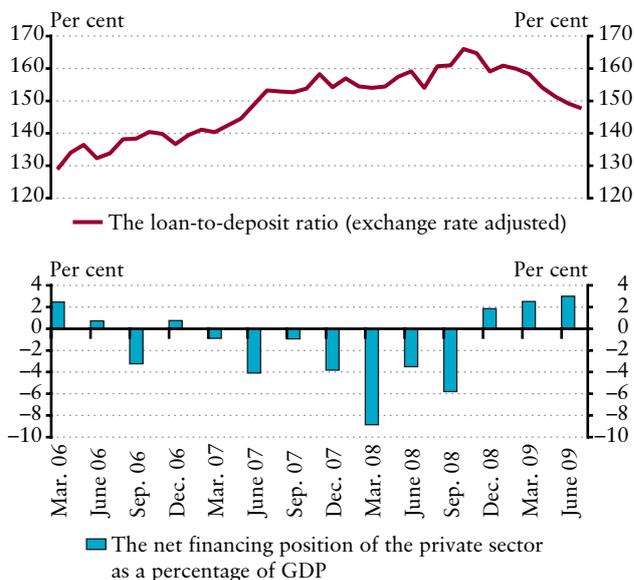
households is accounted for by a significant downturn in new, gross borrowings, rather than an increase in maturing stocks or the prepayment of outstanding loan amounts. The volume of new bank loans is currently less than one half of the figure for 2008 (see Chart 2-5). Yen-denominated products have disappeared from the market; and Swiss franc loans are only offered by a few small banks. Banks' offerings have shifted primarily to HUF- and euro-based loans. In the case of HUF loans, overdrafts came into focus in 2009 Q2, while in July we saw an increase in the amount of subsidised housing loan disbursements. Although customers had submitted their loan applications before the tightening of the subsidised housing loan system, disbursements did not take place until the third quarter. The increase in new euro-denominated products was mainly related to home equity loans. Due to the existing interest rate differential euro-based loans are expected to gain more ground as well. The surge in HUF lending may be supported by a decline in risk premia and the ensuing reduction of the central bank base rate.

## 2.2 The banking sector is adjusting to the new environment by reducing funding risk, while the functioning of financial markets is returning to normal

As a result of Hungary's declining vulnerability – i.e. the sharp drop in the high external financing requirements and the change in the savings' structure – the banking sector's high loan-to-deposit ratio has decreased drastically. In Hungary, the loan-to-deposit ratio is essentially determined by the net financing position of the private sector and the behaviour of banks.<sup>25</sup> Over the short term, however, re-allocation between forms of savings also affects the ratio. The structure of savings is influenced not only by the households' decision, but also the development of public debt and the denomination structure of its financing. The banking sector's loan-to-deposit ratio is over 100 per cent and in recent years it has increased significantly, suggesting that the private sector's debt through the banking sector has grown and the banking sector financed this through external funds. In 2008 Q4 and 2009 H1, however the private sector started to deleverage its balance sheet and therefore achieved a net saving financial position, which largely contributed to reducing the loan-to-deposit ratio of the banking sector, in other words, a reduction of funding risk (see Chart 2-6). The loan-to-deposit ratio has been further improved as a result of two additional factors. On the one hand, due to fierce retail deposit competition, the banking sector withdrew a substantial amount of funds from other forms of saving, namely, from investment funds and cash savings. On the other hand, in 2009 H1 the Hungarian government refinanced maturing HUF-denominated government securities primarily from the IMF's foreign currency denominated loan. The evolving HUF liquidity (money previously held by owners in government bonds) streamed into the banking sector in the form of deposits. The banking sector and its clients are expected to proceed with their adjustment to the changed financial market and macroeconomic environment. In the macroeconomic baseline scenario the private sector remains in a net saving position until 2011-2012, which should contribute to a further reduction of the loan-to-deposit ratio. In 2009 Q3, however, the financing conditions of the government improved considerably, the amount of HUF-denominated government securities auctions returned to pre-crisis levels and non-deposit savings forms became attractive again. According to this, liquidity inflows into deposits from

Chart 2-6

Net financing position of the private sector and the loan-to-deposit ratio of the banking sector



Note: Client loans include loans and bonds of non-financial corporations, household loans, loans and bonds of financial and investment enterprises, government loans, municipal loans and municipal bonds. Client deposits include the deposits of non-financial corporations, household deposits, deposits of money market funds, deposits of financial and investment corporations, government deposits and municipal deposits. Net financing position of the private sector means the position of non-financial corporations and households. The loan-to-deposit ratio is exchange rate-adjusted with respect to the last period. Negative/positive net financing position means requirements/savings.

Source: MNB.

government securities and investment funds are expected to decline, or there could be a backflow as well. As a result of further adjustment in the private and banking sector, the decline in the loan-to-deposit ratio is expected to continue, but at a slower pace than previously, because of re-allocation of the saving structure.

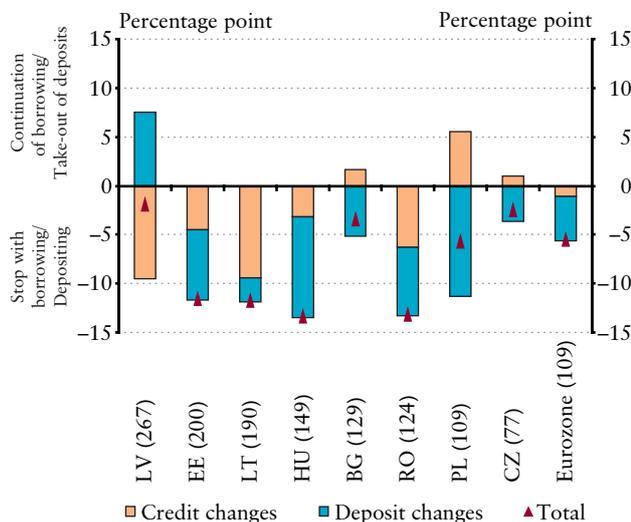
**The Hungarian banking sector's adjustment in the loan-to-deposit ratio is considered strong in regional comparison.** While the ratio of the balance sheet total to

<sup>25</sup> In the case of several domestic banks the owner expects the bank to reduce the loan-to-deposit ratio and increase domestic liabilities.

## Chart 2-7

### Changes in the loan-to-deposit ratios of CEE banking sectors since end-November 2008 (onset of the crisis) until June 2009

(exchange rate adjusted changes)



Note: Based on the definition of the ECB, loans include disbursements to non-financial institutions, households, non-monetary financial intermediaries (other than insurance corporations and pension funds), insurance corporations and pension funds. Deposits include the deposits collected from domestic agents – except the central government – and monetary financial institutions. Positive values indicate a rise, while negative values indicate a decline in the loan-to-deposit ratio. The contribution of loans (deposits) to changes in the loan-to-deposit ratio was calculated by fixing the deposit holdings (loan portfolio) prevailing in November as constant. Loan-to-deposit ratios as of June 2009 are indicated next to the name of countries in parentheses.

Sources: National central banks, ECB, MNB.

GDP is either stagnating or increasing<sup>26</sup> in the countries of the region, the adjustment of the banking sectors following the financial turmoil in October 2008 is better reflected by the decline in the loan-to-deposit ratio. The adjustment is stronger in those countries where the loan-to-deposit ratio was higher (see Chart 2-7). The only exception is Latvia, where – despite a significant downturn in lending – due to a sharp fall in household deposits the ratio declined only slightly. Restrained lending already reflects the adjustment that is taking place in the region, even though in most countries it is still the growth in deposits that primarily accounts for the decline in the loan-to-deposit ratios since November 2008. Along with the CEE region, a contraction in the loan-to-deposit ratio can be observed in the euro area as well, the extent of which did not deviate significantly from the regional average in the period under review.

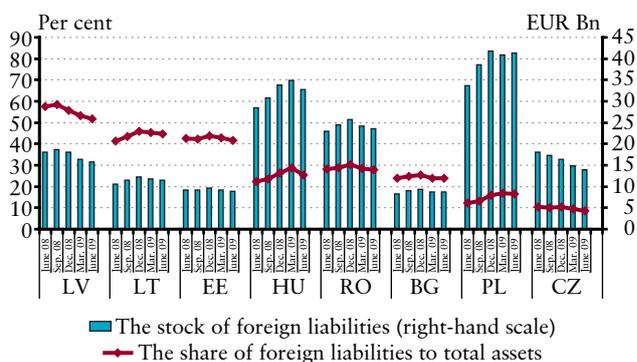
<sup>26</sup> Since the beginning of the year, the balance sheet totals of the banking sectors in the euro area and the Central and East European region have either stagnated or decreased. However, in line with previous trends, the ratio of the balance sheet total to GDP or the loan-to-GDP ratio continues to rise, as the magnitude of the economic downturn surpasses the size of balance sheet total or loan contractions. As lending activity lags behind the economic cycle, these ratios may start to decline only after the economic turning point.

### The banking sectors' reliance on external funds has decreased in the region, including Hungary.

At the onset of the financial crisis in the last quarter of 2008 foreign parent banks increased the financing of their Hungarian subsidiaries by nearly EUR 3 billion. Subsequently, however, normalisation of the money market situation and the private sector's gradual adjustment reduced the external financing requirement, and thus reliance on external funds declined. In parallel with the contraction in the loan-to-deposit ratio, an outflow of external funds commenced (see Chart 2-8). Nevertheless, in the domestic banking sector the volume and ratio of external funds to the balance sheet totals still exceed the levels observed in September 2008. In terms of the stability of external funds, two factors are worth examining: the share of parent bank funds and short-term loans. The share of parent bank funds within external funds continued to increase this year and approached 60 per cent. At the same time, while the maturity of external funds shortened after the beginning of the crisis in October 2008, no consistent shifts have been observed in the maturity structure since the beginning of 2009. The share of external funds with a maturity of up to one year is fluctuating around 43 per cent. When the crisis intensified after October 2008 other countries in the region also experienced an inflow and in the post-crisis period an outflow of external funds, primarily from parent bank.

## Chart 2-8

### Volume of external funds and their ratio to balance sheet totals in the CEE banking sectors



Source: ECB.

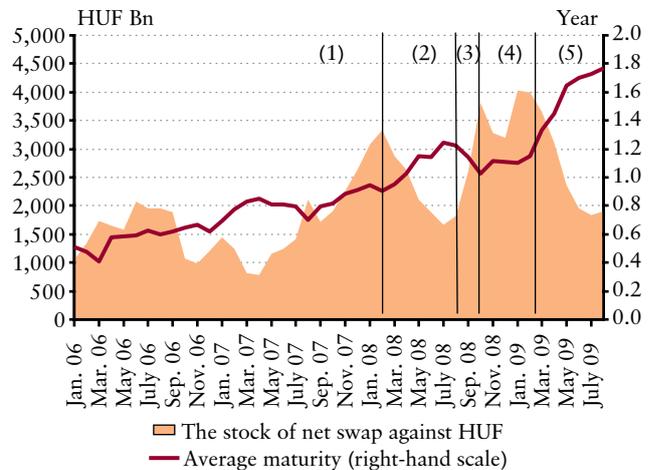
### Thanks to the adjustment in foreign currency assets and foreign currency liabilities, the banking sector's reliance on the FX swap market has declined as well.

Due to a surge in foreign currency lending in previous periods, the domestic banking sector has a high exposure to foreign currency swaps (see Chart 2-9). FX swaps have

shorter maturity than foreign currency loans, which makes the banking sector extremely sensitive to developments in the swap market. In October 2008 the drying up of the domestic swap markets as a result of the global financial market turbulence triggered liquidity disruptions in the banking sector; the renewal risk of FX swaps grew (lack of FX swap renewal may increase the open net foreign currency position of the banking sector), and depreciation of the HUF increased the margin requirement (associated with the forward leg of the swap transaction). Thanks to the improvement in global money market conditions and the joint effort of the central bank, the government and parent banks, the situation eventually normalised. However, it is crucial to gradually reduce the banking sector's exposure to the FX swap market, in other words, to facilitate the closure of banks' on-balance-sheet position. The FX swap stock is influenced by three main factors.<sup>27</sup> The composition effect influences the FX swap portfolio if customers change the denomination structure of loans and deposits while keeping their exposure steady. The volume effect occurs if the increase or decrease in foreign currency denominated assets is higher or lower than the increase or decrease in foreign currency denominated liabilities. The third factor is the exchange rate effect. If the exchange rate depreciates, banks have to deposit more foreign currency due to the margin call requirement of the FX swap's forward leg. Banks typically obtain this additional FX liquidity through another FX swap, which they carry out using their HUF liquidity. The domestic banking sector's FX swap portfolio has built up significantly in recent years, which can be primarily attributed to the volume effect, i.e. the surge in FX lending (1st period). The growth rate of foreign currency liabilities fell significantly behind that of foreign currency assets, including foreign currency loans. By contrast, in March-September 2008 the FX swap portfolio decreased considerably (2nd period). In addition to the appreciation of the exchange rate, the decline in the swap portfolio was due to the changing denomination structure of client deposits: the share of HUF deposits decreased while that of FX deposits increased. The swap portfolio was subject to an opposite, even stronger effect, due to the notable depreciation of the exchange rate in September-October 2008 (3rd period). Anticipating an exchange rate adjustment, firms converted their loans from HUF to foreign currency denomination, while firms and households converted their deposits from foreign currency to HUF denomination. The foreign currency loan portfolio started to shrink at the end of 2008, but the volume effect pointing to the diminishing of the swap portfolio was neutralised by the reverse exchange rate effect until March 2009 (4th period). In March 2009 the swap portfolio

Chart 2-9

### FX swap stock of the domestic banking sector and its average remaining maturity



Note: The stock indicates a net swap exposure; the average remaining maturity applies to the gross exposure. The numbers on chart indicate the different time periods under review.

Source: MNB.

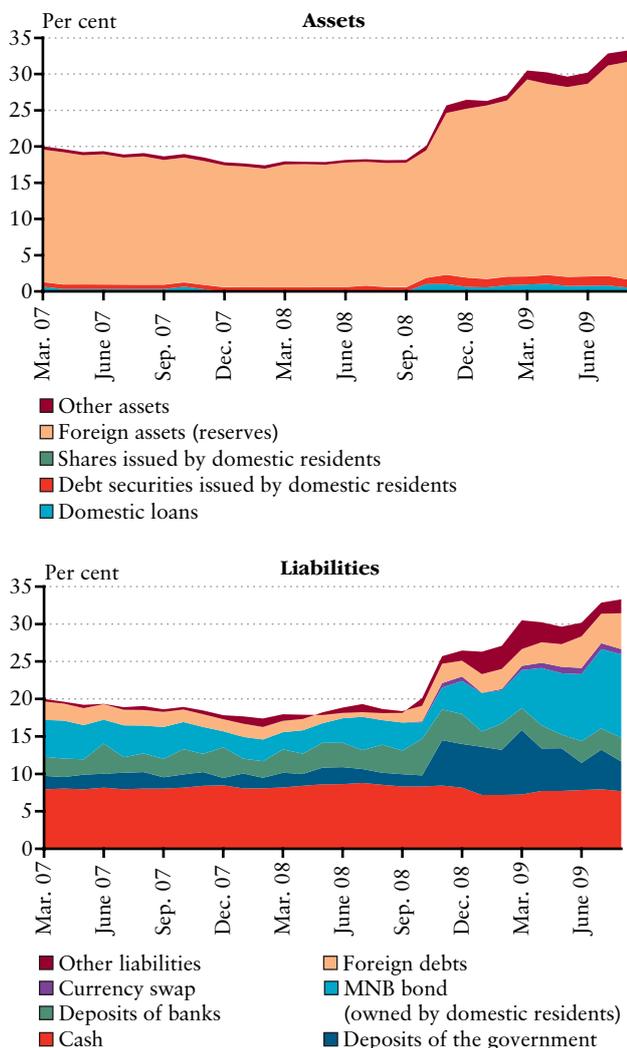
commenced a sustained descent from its historical high (5th period). At this point, the exchange rate and also the volume effects put downward pressure on the portfolio. The decline in foreign currency loans decreased, while FX-based deposit placements increased even further. Both corporate and household FX deposit holdings have increased substantially. For companies this process can be attributed to the fact that they over-hedged their export revenues in the forward markets, thus the decline in exports following the onset of the crisis left them in an open FX position. As their activity subsided, they had to place their excess FX liquidity in bank deposits in order to close their FX position. In the case of households, FX deposit placements may have been a response to the high volatility of the HUF exchange rate. The systematic reduction of the FX swap market exposure may moderate further with the adjustment of economic agents and the continued decline of foreign currency loans. This will greatly contribute to the reduction of the banking sector's vulnerability.

**In addition to funding, banks' asset side liquidity has also improved.** The liquidity of the banking sector has improved significantly, not only because of lower financing risks, but also because of the better asset side liquidity position. The HUF liquidity of the banking sector was boosted by central bank measures (lower reserve requirements, wider range of eligible collaterals, new credit

<sup>27</sup> Mák, István and Páles, Judit: Az FX-swap piac szerepe a hazai pénzügyi rendszerben (The role of the FX swap market in the Hungarian financial system), *MNB Bulletin*, May 2009. <http://www.mnb.hu/Resource.aspx?ResourceID=mnbfile&resourceName=mak-pales>.

**Chart 2-10**

**Balance sheet of the Magyar Nemzeti Bank as a proportion of GDP**

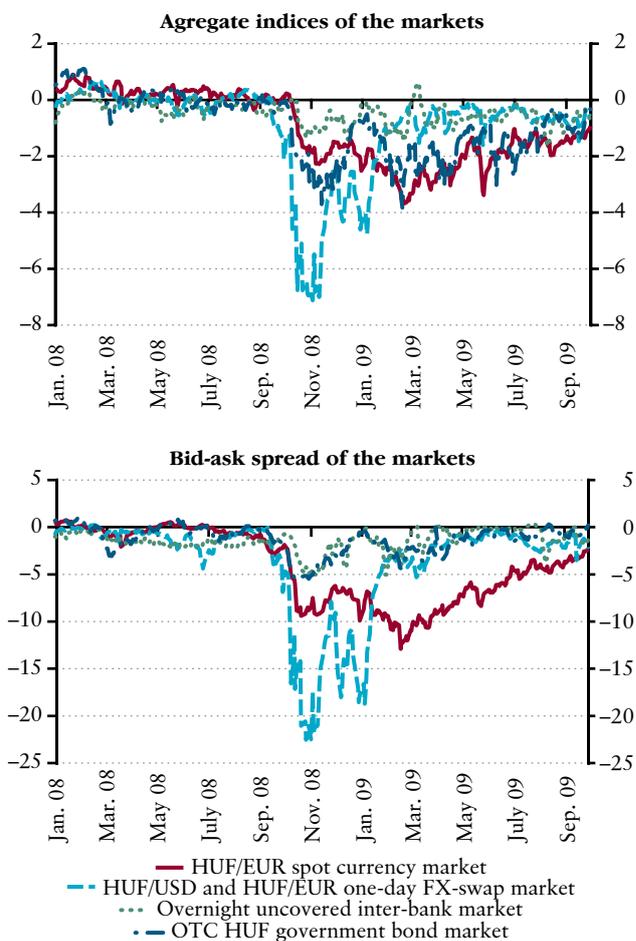


Note: Changes in assets were calculated at a fixed exchange rate (EUR/HUF exchange rate as of March 2007).  
Source: MNB.

structures) and by refinancing of the maturing HUF-denominated bonds of the government by IMF FX loan. By the middle of 2009 banks' overnight deposits and two-week MNB bill holdings reached an amount of HUF 4,000 billion, which represents nearly 40 per cent of the central bank's assets, and nearly 15 per cent of the domestic banking sector's balance sheet total. This excess HUF liquidity was accumulated gradually, and contributed to easing the liquidity tensions of financial institutions (see Chart 2-10).

**Chart 2-11**

**Aggregated and bid-ask spread liquidity indices by market segments<sup>28</sup>**



Note: Zero value indicates the long-term average of indices.  
Sources: Reuters, MNB.

Banks' lending decisions are currently determined by risk appetite and the profit outlook, rather than liquidity considerations. In the past half year the unfavourable macroeconomic and money market environment raised credit risk significantly, while banks' risk tolerance weakened significantly. This is reflected in banks' decision to maintain tight price and non-price credit conditions, which means that they are not circulating the ample liquidity to the real sector.<sup>29</sup> The ample HUF liquidity cannot flow into the real sector through lending activity unless credit conditions improve. If the outlook for economic activity and the sovereign risk premium are not expected to improve significantly, increased government involvement, in

<sup>28</sup> For further details on the methodology see: Varga Lóránt and Páles Judit: Trends in the liquidity of Hungarian financial markets – What does the MNB's new aggregate market liquidity index show? [http://english.mnb.hu/Resource.aspx?ResourceID=mnbfile&resourcename=mnb\\_bull\\_2008\\_04\\_judit\\_pales\\_lorant\\_varga\\_en](http://english.mnb.hu/Resource.aspx?ResourceID=mnbfile&resourcename=mnb_bull_2008_04_judit_pales_lorant_varga_en).

<sup>29</sup> If banks were willing to lend by multiplying commercial bank money, the balance sheet total of the banking sector would increase, while the volume of central bank money would remain unchanged.

particular state guarantee programmes (take-over of the banking sector's credit risk), will be necessary to ease price and non-price credit condition.

**The normalisation of the key financial markets' operation has also contributed to lowering the banking sector's liquidity risk.** Four financial markets are considered to be of key importance: the spot FX market, the FX swap market, the interbank market and the government bond market. Liquidity improved significantly in all four markets in the past half year, which is reflected mainly in the narrowing bid-ask spreads (see Chart 2-11). With the exception of the spot HUF market, bid-ask spreads in all other markets have returned to the low levels observed before October 2008. The unfavourable price-factors remaining in the spot FX market can be attributed to the still high, albeit decreasing, volatility of the HUF exchange rate. Trading on the FX swap market has normalised. Not only the bid-ask spread, but also the spread between the implied and interbank HUF yields has dropped to a low level. Moreover, banks' reliance on the central

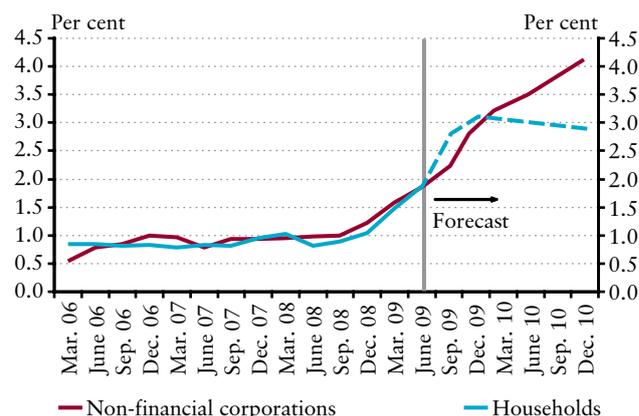
bank's swap instruments has decreased significantly. Banks have not used central bank's overnight swap tender since the end of April 2009, and the volume of new three-month and six-month swap deals has diminished as well. In addition, the remaining maturity of FX swap has increased (see Chart 2-9). Price conditions in the interbank market have improved considerably as well; nevertheless, turnover has remained subdued. The main reason behind this, however, is not insufficient HUF liquidity or high counterparty risk, but the excessive HUF liquidity and the narrow interest rate corridor. Because of the narrow interest rate corridor (now 100 basis points compared to the pre-crisis level of 200 basis points) and the ample HUF liquidity available to all banks, banks are not lending to each other, and thus the volume-weighted average interbank interest rate is permanently at the bottom of the interest rate corridor. In the government bond market both the price-based and volume-based liquidity indices have improved. Thanks to recovering global investment sentiment and increasing demand, primary issues and secondary turnover have returned to pre-crisis levels.

## 2.3 Credit risk is the most significant threat jeopardising the stability of the financial system

The loan loss rates (loan loss provisioning to total loans) in the banking sector's corporate and household portfolios may triple and, in line with our previous expectation, may increase to 3 per cent by the end of 2009. The most reliable indicator in the assessment of portfolio quality is loan loss provisioning, in other words, expected loan losses.<sup>30</sup> The ratio of loan losses to total loans expresses the proportion of loans expected not to be recovered, thus this ratio is often compared with the level of expected losses and referred to as risk cost. The loan loss rate stood at 1 per cent for banks' corporate and household loan portfolios at the end of 2008 and increased to almost 2 per cent by June 2009 (see Chart 2-12). In the case of household foreign currency loans, deteriorating loan portfolio quality and the associated expected losses can be attributed primarily to the devaluation of the exchange rate, rising FX interest rates and the negative income shock. For companies, in addition to the above mentioned effects, weakening external demand and consequently, rising bankruptcy rates played important role in portfolio deterioration. Also contributing to the increase of the loan loss rate, lending dynamics have decelerated significantly: only a mild growth can be observed in banks' household loan portfolio, while the corporate loan portfolio has contracted substantially. As further portfolio deterioration is expected, which may be accompanied by a continuing decline in the loan portfolio, in line with our previous expectation, the loan loss rate may increase to 3 per cent by the end of 2009. The impending portfolio deterioration is mainly a consequence of economic recession. In 2009 loan repayment ability has been impaired by increasing bankruptcy rates for companies and by sharply rising unemployment for households.

In 2010, due to sharply rising bankruptcy rates, non-financial companies' loan loss rate may continue to increase, while it may decrease slightly for households, thanks to more subdued growth in unemployment,<sup>31</sup> strengthening HUF

**Chart 2-12** Loan loss rate (loan loss provisioning to total loans) of the banking sector's non-financial corporate and household loan portfolio



Source: MNB.

exchange rate, real wage raises, and improving efficiency in banks' workout activities.<sup>32</sup> Upside risks are significant for households. The stronger-than-expected adjustment of companies in the labour market may lead to more substantial loan losses in the household sector. The most profound portfolio quality deterioration is expected to affect corporate project loans and unsecured household loans. In the case of mortgage loans the devaluation of collaterals may present an upside risk. However, this risk is mitigated due to the banks' intensified workout activity and the moderate decrease in housing prices. Following a slight increase in domestic housing prices in recent years, prices declined by around only<sup>33</sup> 6 per cent<sup>34</sup> in 2009 H1. However, it makes the situation less clear-cut that the housing price statistics noted above essentially reflect aggregate trends and are mainly related to transactions where a single property is being sold. If the workout of several problematic clients reaches a phase where the real estate collateral is foreclosed and sold at

<sup>30</sup> For further details, see: Tamás Balás: "Comparison of the indicators describing the loan portfolio quality of the banking sector" (*Background study III.*), November 2009, [http://english.mnb.hu/Resource.aspx?ResourceID=mnbfile&resourcename=stabiljel\\_3\\_balas\\_200911\\_en](http://english.mnb.hu/Resource.aspx?ResourceID=mnbfile&resourcename=stabiljel_3_balas_200911_en).

<sup>31</sup> Changes in unemployment and the loan loss rate are interrelated. Since the growth of unemployment will slow down in 2010 (growth of the unemployment rate declines), a slight decline in loan losses is consistent with this development along with lagged effect.

<sup>32</sup> According to the IMF *Global Financial Stability Report* published in October, in the euro area the ratio of provision on loans to total loans in the case of companies may reach 0.7 per cent in 2009, up from 0.3 per cent in 2008; followed by a slight decline in 2010. For households, this ratio may exceed 1 per cent in 2009, up from 0.5 per cent in 2008, and a moderate decline may follow in 2010. <http://www.imf.org/external/pubs/ft/gfsr/2009/02/index.htm>.

<sup>33</sup> Compared to Hungary, housing prices demonstrated significantly higher volatility in the countries in the region, particularly in the Baltic States, Bulgaria and Romania. In these countries the annual increase in housing prices exceeded 20 per cent on average between 2001 and 2008. As the asset price bubble burst, housing prices fell by more than 30 per cent in 2009.

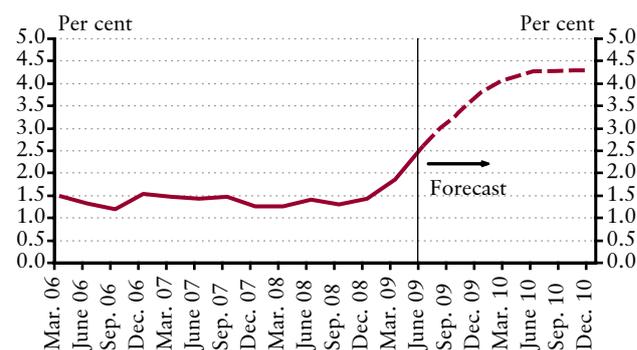
<sup>34</sup> For further details, see: Áron Horváth and Gyöngyi Körmendi: "Changes in domestic housing prices" (*Background paper*).

auction (a faster procedure relative to normal sales), the forced and expeditious sale – which involves several properties at a time – may take place at significantly discounted prices. Based on current auction prices this may reduce the value of collateral by an additional 30 per cent. However, both the bank and the client have a vested interest in avoiding any sale of the property, which is reflected in the small number of homes put up for auction (around 200 auctions per month).<sup>35</sup> Due to households' strong repayment willingness, government guaranties and the efficient workout activity of banks, the ratio of non-performing mortgage loans may remain low.<sup>36</sup>

**Restructuring of loans is a positive phenomenon as it improves clients' loan repayment ability, while at the same time allowing banks to reduce the level of provisions set aside to cover expected loan losses.** In an effort to avoid or to smooth losses, the banking sector is engaged in restructuring the loan portfolios and intensifying workout activity, mainly in the case of household loans.<sup>37</sup> This process is also supported by a new act and its implementing decree, which allow banks to extend government-guaranteed bridge loans to assist distressed debtors with mortgage loans.<sup>38</sup> The restructuring of loans is a positive phenomenon as it reduces clients' monthly debt service costs and therefore helps prevent default. At the same time, by restructuring loans banks can improve their non-performing portfolio on an accounting basis, whereby they can reduce the size of provisions for expected losses. In addition to re-structured loans, a more prudent provisioning behaviour of banks is crucial particularly in the case of corporate project loans, bullet loans (products where payment of the principal is due at the end of the loan term) and mortgage loan backed unit-linked products.

**Compared to the banks' loan portfolio financial enterprises may face more substantial portfolio deterioration.** The decline in household real income and employment results in a significant deterioration in households' loan repayment ability. Furthermore, households' willingness to repay is lower for unsecured loans than for secured loans. Since financial enterprises have specialised primarily in foreign currency vehicle financing the economic recession has had a devastating effect on the quality of their portfolio. By June 2009 the loan loss rate for financial enterprises' portfolio reached 2.6 per cent, up from 1.4 per cent at the end of 2008 (see Chart 2-13). Since the unfavourable economic environment may have a protracted effect on loan portfolio quality, and the loan portfolio of financial enterprises is expected to contract further, by the end of 2009 we anticipate a loan loss rate of 4 per cent.

**Chart 2-13**  
**Loan loss rate (total loss provisioning to total loans) of the financial enterprises' portfolio**



Source: MNB.

<sup>35</sup> For further details, see: Dániel Homolya and Gábor Szigel: "Banks' household credit collection procedures" (*Background study IV.*), November 2009, [http://english.mnb.hu/Resource.aspx?ResourceID=mnbfileresourcenam=stajjel\\_4\\_homolya\\_szigel\\_200911\\_en](http://english.mnb.hu/Resource.aspx?ResourceID=mnbfileresourcenam=stajjel_4_homolya_szigel_200911_en).

<sup>36</sup> In most cases, by restructuring the loans banks do not reduce the overall debt burden on the client. Banks merely lengthen the non-performing loan's maturity period and lower the monthly instalment in an effort to improve the client's debt repayment ability and thereby to avoid, postpone or smooth loan losses.

<sup>37</sup> For further details, see: Dániel Homolya and Gábor Szigel: "Banks' household credit collection procedures" (*Background study IV.*), November 2009, [http://english.mnb.hu/Resource.aspx?ResourceID=mnbfileresourcenam=stajjel\\_4\\_homolya\\_szigel\\_200911\\_en](http://english.mnb.hu/Resource.aspx?ResourceID=mnbfileresourcenam=stajjel_4_homolya_szigel_200911_en).

<sup>38</sup> Act IV of 2009 on government guarantee on non-performing home purchase mortgage loans.

## 2.4 The banking sector is capable of absorbing mounting loan losses, due to its strong profitability and capital position

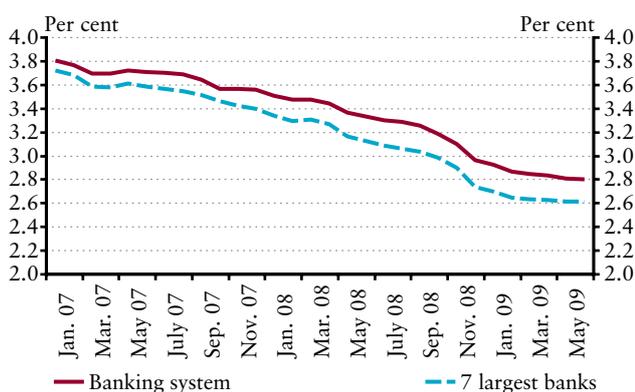
**The only reason behind the increase in interest income – the most important source of profitability – is the HUF exchange rate effect.** Interest income recorded in 2009 H1 was 6 per cent higher than in 2008 H1. Interest income grows in two basic cases: first, when banks raise their interest margins (i.e. the increase in loan rates exceeds the increase in funding costs); second, when the assets of the banking sector increase. Growth in assets calculated on a HUF basis reflects increased activity or depreciation of the HUF exchange rate. If a bank has a substantial amount of foreign currency assets and the domestic currency depreciates, its nominal interest income can grow even if interest margin and activity remain unchanged.<sup>39</sup> The interest margin has declined to 2.8 per cent from 3.3 per cent observed at the end of June 2008 (see Chart 2-14). The most significant decline took place between October 2008 and March 2009, when banks only partly transferred to borrowers the sharply rising external and internal funding costs (which is particularly true for the seven leading banks). Following March 2009 external funding costs started to decline, but competition for household deposits remained

fierce which, albeit to a lesser extent, narrowed the interest margin even further. With an unchanged exchange rate, the corporate loan portfolio was smaller in 2009 H1 than in 2008 H1. In year-on-year terms, the household loan portfolio slightly exceeded the value observed in 2008. Thus, the significant increase in assets resulted from the fact that the HUF exchange rate was weaker by nearly 15 per cent against the euro, and by nearly 20 per cent against the Swiss franc in 2009 H1 compared with 2008 H1.

**Despite significant increases in loan loss provisioning, the profit realised by the banking sector in 2009 H1 was substantially higher than expected.** By June 2009, provisions set aside by the banking sector amounted to HUF 188 billion, which exceeds the total value for 2008 by one-third, and is nearly 6.5 times higher than the value recorded for 2008 H1 (the difference amounting to HUF 158 billion). Provisions for impairment of the household and corporate portfolio account for around two-thirds of this additional provisioning. Thus far banks have been able to offset this substantial increase in losses by excess earning realised from other sources; consequently, in 2009 H1 the bank sector achieved a profit of HUF 190 billion similar to 2008 H1 data (see Chart 2-15). In year-on-year terms pre-provision profit significantly exceeded – by 70 per cent – the last year's value. The most important factor boosting profits was the high revenue from financial transactions, which doubled in size compared to 2008 H1 and was nearly as high as the 2008 data. As opposed to the losses reported in the previous year, the banking system realised continuously growing net gains on securities (mainly on government securities). As described above, as a second contributing factor the increase in net interest income also contributed to offsetting loan losses. The third contributing factor was improved efficiency through the reduction of operating costs at several banks. This is a particularly positive development, which will improve the profitability of the banking sector over the longer term. Finally, as a fourth factor, dividend income also increased at a number of banks. Based on the developments of the first half of the year, the banking sector is expected to post a

**Chart 2-14**

### Interest margins of the banking system and the seven largest banks



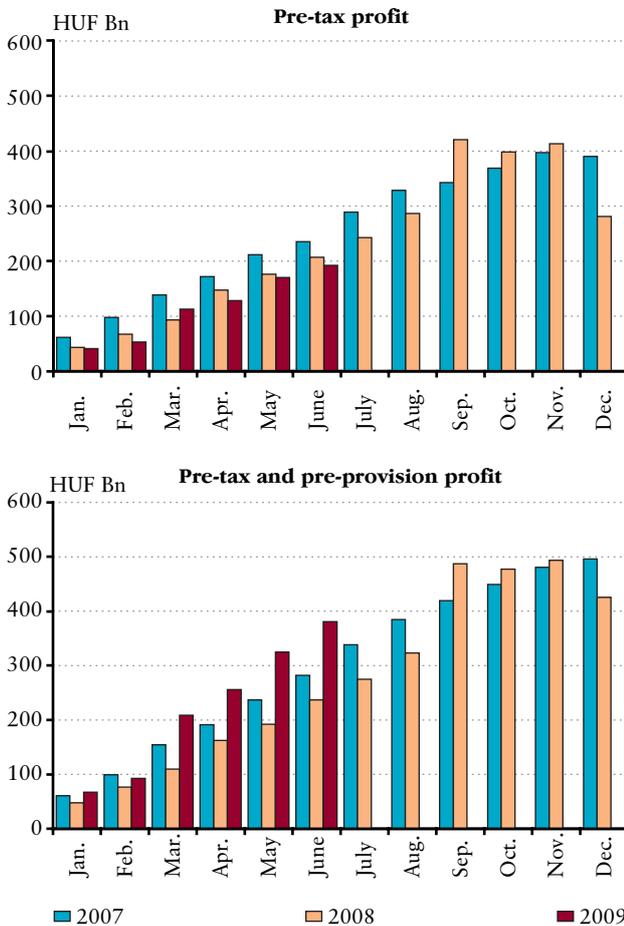
Note: Interest margin: (12-month rolling interest income-12-month rolling interest expenses)/12-month average interest-bearing assets).

Source: MNB.

<sup>39</sup> To explain it differently, if the exchange rate devaluates ceteris paribus, the monthly instalment amounts of FX loans will increase, and therefore the bank will realise higher HUF-denominated income from interest payments. In the case of principal repayments this correlation does not apply, because banks reflect any exchange rate risk deriving from the different denomination of assets and liabilities off the balance sheet.

Chart 2-15

## Pre-tax and pre-provision profit of the banking sector



Source: MNB.

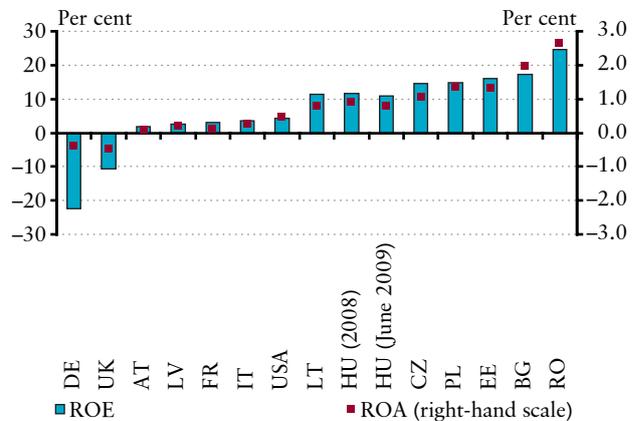
substantial amount of profit at the end of 2009. On the other hand, since earnings have been boosted by one-off factors – except cost efficiency improvement – this outstanding profitability is probably not sustainable. Banks are striving to incorporate their increasing risk costs – at least in part – in the interest margin. However, the increased interest margins will probably be unable to absorb loan losses, which may lead to a gradual decline in profit. On the whole, the banking sector's pre-tax profit may exceed our projection of HUF 100-200 billion published in the April 2009 Report on Financial Stability for 2009, and significantly fall short of the projection of HUF 150-250 billion for 2010. It should be emphasised once again, that reinvesting the profits in 2009-2010 is one of the most important sources of strengthening the capital position.

**The number of unprofitable banks, however, is on the rise.** The banking sector's annual rolling average of return on assets (ROA) was 0.9 per cent in 2009 H1, while return on equity (ROE) reached 12.7 per cent (based on profit after tax, ROA and ROE stood at 0.8 per cent and 10.9 per

Chart 2-16

## Profitability indices of the Hungarian banking sector in international comparison

(2008)

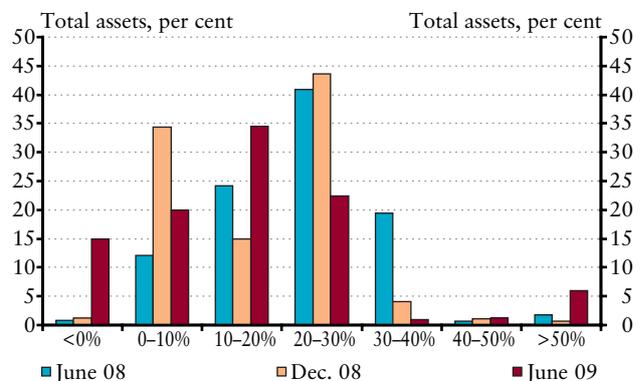


Note: The indices are based on profit after taxes. Hungary (HU), Poland (PL), Czech Republic (CZ), Slovakia (SK), Romania (RO), Bulgaria (BG), Estonia (EE), Lithuania (LT), Latvia (LV), United Kingdom (UK), United States of America (USA), France (FR), Germany (DE), Italy (IT) and Austria (AT). In case of Hungary data for 2009 H1 is calculated based on 12 month moving average.

Sources: ECB EU banking sector stability report, IMF FSI database.

Chart 2-17

## Dispersion of banks' total assets by ROE



Note: Based on intra-year pre-tax profit.

Source: MNB.

cent, respectively). This represents a slight decline compared to the end of 2008. The profitability of the Hungarian banking sector is considered favourable in international comparison (see Chart 2-16). Profit performance has exceeded expectations, which significantly enhances the banking sector's shock-absorbing capacity. At the same time it should be noted that this profit has been generated by a few large banks. While the ratio of unprofitable banks was negligible in 2008 based on total assets, by June 2009 the ratio had increased to 15 per cent (see Chart 2-17).

**Although the profitability of financial enterprises is still positive, they are expected to face losses in future,**

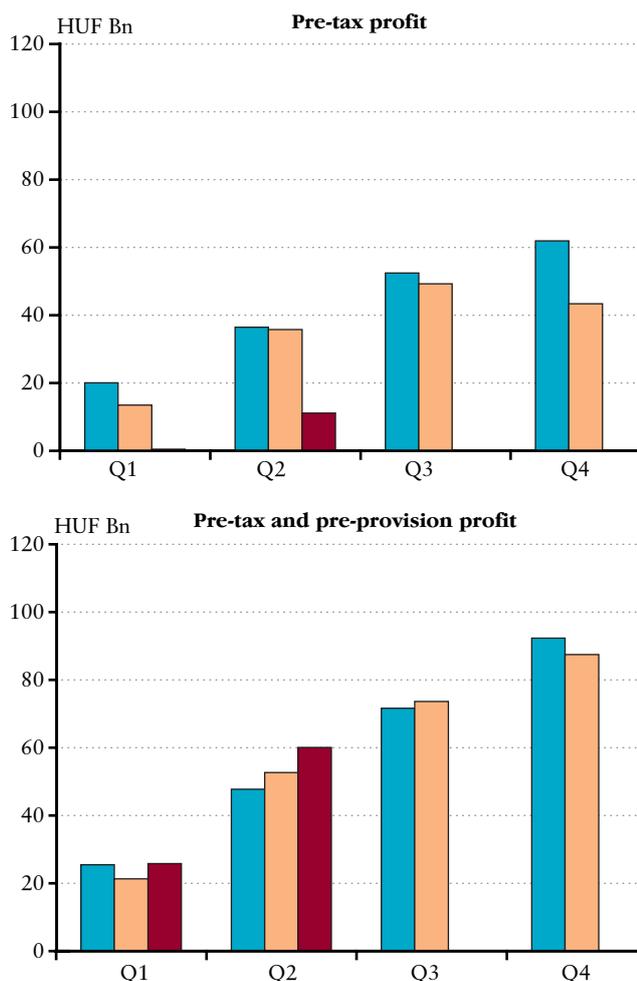
which may significantly worsen the consolidated results of the affected banking groups. In 2009 H1, loan loss provisioning increased considerably for financial enterprises as well. At the sector level, this amounted to HUF 50 billion, which is three times as high in the same period of 2008; moreover, it exceeds the provisions for the entire year of 2008 by 15 per cent. In addition, profitability was weakened by the fact that the profit on financial transactions fell far short of previous levels. Profit-reducing factors were partly offset by the interest income, which continued to grow at a similar pace as in previous periods, but the weaker exchange rate also played an important role in this achievement. As a result, the profit of financial enterprises shrank to HUF 11 billion in H1, which represents one-third of the value recorded in 2008 H1 (see Chart 2-18). Meanwhile, pre-provisioning profit increased only slightly. After a significant increase in the number of unprofitable

firms during 2009 H1, the ratio reached 40 per cent based on total assets. As a result of a further rise in credit risk costs, i.e. loan loss rate and a substantial contraction in the loan portfolio, the sector's profit may turn negative by the end of the year, deteriorating banks' domestic group-level consolidated results.

**The already considerable surplus capital of the banking sector has continued to grow; its capital position is adequate in the baseline macroeconomic scenario.** By June 2009 the capital adequacy ratio of the banking sector has increased to 12.3 per cent from 11.2 per cent, while the Tier 1 CAR rose to 10.3 per cent from 9.3 per cent. This capital adequacy is considered high in international comparison (see Chart 2-19). The expansion observed in H1 is attributed to several factors. Due to the high foreign currency content of the assets, appreciation of the exchange rate reduces the HUF-denominated value of risk-weighted assets. In order to achieve internal capital accumulation, a number of banks had their profit for H1 audited. In addition, parent banks increased their own subsidiaries' capital in numerous cases. In H1 2009, parent banks' capital injections reached HUF 50 billion (EUR 200 million). Finally, banks have also reduced their risk exposure

**Chart 2-18**

**Pre-tax and pre-provision profits of financial enterprises**

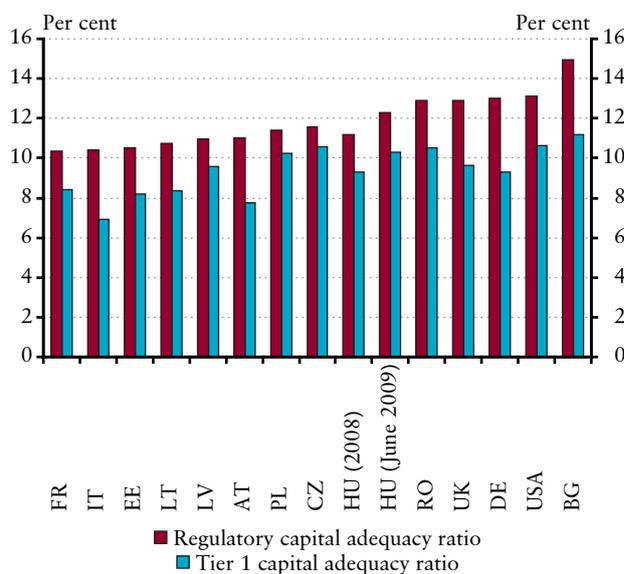


Source: MNB.

**Chart 2-19**

**Capital adequacy ratio of the Hungarian banking sector in international comparison**

(2008)

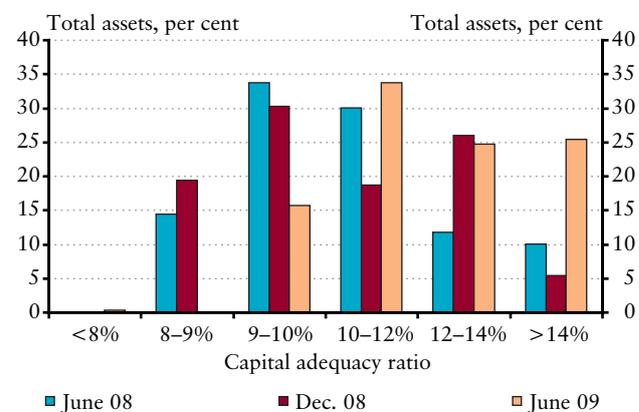


Note: Hungary (HU), Poland (PL), Czech Republic (CZ), Romania (RO), Bulgaria (BG), Estonia (EE), Lithuania (LT), Latvia (LV), United Kingdom (UK), United States of America (USA), France (FR), Germany (DE), Italy (IT) and Austria (AT).

Sources: ECB banking sector stability report, IMF FSI database.

by restraining lending activity, in particular in the corporate segment.<sup>40</sup> Looking at the dispersion of the capital adequacy ratio, the improvement was a general phenomenon (see Chart 2-20). Nearly all banks have a CAR ratio of over 9 per cent, and the number of banks in the highest category also increased substantially. Looking ahead, the capital adequacy ratio of the banking sector is likely to remain above 11 per cent until the end of 2010, and none of the largest, systematically important banks' capital adequacy ratio will probably drop below 8 per cent.

**Chart 2-20**  
**Dispersion of banks' total assets by capital adequacy ratio**



Source: MNB.

<sup>40</sup> In line with the owners' requirement, several banks maintain or reduce the level of RWA (risk-weighted assets). However, in addition to restrained activity the structure of RWA plays an important role in meeting this requirement. On average, the risk weight of corporate loans is higher than that of household loans, thus restraining lending activity in view of this structure reduces risk exposure faster.

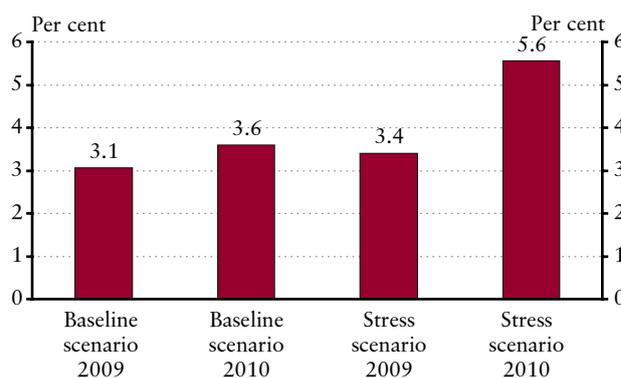
## 2.5 Credit risk stress test indicates manageable recapitalisation needs in the stress scenario

**In the unfavourable scenario investigated in the stress testing a deeper-than-expected recession and depreciating domestic currency is postulated.**<sup>41</sup> Our stress testing exercise considers two macroeconomic scenarios. The baseline scenario, i.e. the most probable macro path in the 2009-2010 period, is identical with the one published in the MNB's *Quarterly Report on Inflation* (August 2009). In the stress scenario, we attempted to outline a "severe but plausible" scenario. In the stress scenario, the global economy is hit by a new confidence shock, resulting in a global fall in investment and consumption (W-shaped recovery). Above and beyond the direct impact on domestic consumption and investment, in an open economy such as Hungary this decline would have a significant negative effect on growth through the fall in external (mainly euro area) demand as well. As a result of all the above, compared to the baseline scenario, in the stress scenario growth is lower by a total of 5 per cent during the two years. We also assumed that in the stress scenario the considerable deterioration in growth prospects trigger a risk premium shock, which results in a nearly 16 per cent depreciation of the exchange rate compared with the assumption in the baseline scenario, to EUR/HUF 315 in the final quarter of 2009 (Table 2-1). With regard to monetary policy, we assumed that it would remain neutral due to the joint occurrence of negative shock on economic growth and the risk premium shock. Through the stress testing we analyse whether banks' capital and pre-provisioning income can cover loan losses with a capital level remaining above the regulatory minimum, i.e. with a capital adequacy ratio over 8 per cent.<sup>42</sup>

In the stress scenario loan losses could be 5-6 times higher than the previous years' losses. Based on empirical relationships between historical loan losses on banks' household and corporate loan portfolio and the main indicators of the macroeconomic environment (economic growth, unemployment, inflation, exchange rate, domestic and foreign interest rates) we forecasted the loan losses in the baseline and stress scenario. There will be considerable loan losses in the banking system, as loan losses increase to a level around 3 times higher in 2009 and 4 times higher in 2010 in

**Chart 2-21**

### Consolidated loan loss rates in the baseline scenario and the stress scenario



*Note: Loan losses of financial corporations owned by banks are consolidated with the banks' loan losses. Loan loss rate is calculated by product of probability of default (PD) and loss given default (LGD).*

*Source: MNB.*

**Table 2-1**

### Macroeconomic indicators in the two scenarios

	Baseline		Stress		Difference between stress and baseline scenarios	
	2009	2010	2009	2010	2009	2010
GDP*	-6.7	-0.9	-7.9	-4.7	-1.2	-3.8
Private sector employment*	-3.6	-1.7	-3.7	-3.1	-0.1	-1.4
Consumer price index*	4.5	4.1	4.7	4.7	0.2	0.6
HUF/EUR	281	272	292	315	3.9%	15.8%

*Note: Values marked with an \* show year-on-year percentage changes.*

*Source: MNB.*

<sup>41</sup> Our calculations have not taken into account market and liquidity risks as well as the effect of possible contagions through banks' exposures to one another. The analysis covers the whole Hungarian banking sector and considers the risk of both the financial corporations and foreign subsidiaries owned by the banks.

<sup>42</sup> We took the capital increases implemented through September 2009 into consideration for the calculation of initial capital adequacy.

the baseline scenario compared to the 1 per cent level typical in previous years (see Chart 2-21). In the stress scenario, loan losses could be even higher; at the end of 2010 loan losses could be 5-6 times higher than in the past few years. It is important to highlight that in both the baseline scenario and the stress scenario loan losses reach their peak only in 2010. This finding is in line with the experience that loan losses tend to follow the business cycle only with some lag.

**In the stress scenario the banking system's earnings before provisioning could decrease significantly in 2010.**

One of the sources of absorbing loan losses is banks' earnings before provisioning. We forecasted the banking sector's earnings before provisioning for 2009 and 2010 in both scenarios. According to our results, compared to the 2007–2008 average, earnings before provisioning increase slightly in 2009, before declining markedly in 2010 (by 10 and 15 per cent in the baseline and stress scenarios, respectively). According to the latest data the profits of the banking sector in 2009 are expected to be higher than previously anticipated. Taking this into account we also prepared an alternative version for the bank income forecast, projecting the decline assumed for 2010 using the average for 2007–2009, instead of the average for 2007–2008 (applying an expert estimate for banks' income in the remaining months of 2009).

**In the stress scenario, a sizeable part of the banking sector needs additional capital, but volume of recapitalisation needs (HUF 100-170 billion) appears to be manageable.**

Combining our assumptions for loan losses and bank income results in net profit/loss, which together with the initial capital level yield capital adequacy in the individual scenarios. It is important to note that no dividend payments were taken into account, i.e. we assumed that banks will use their 2009 and 2010 profits, if any, entirely to strengthen their capital positions.<sup>43</sup> We use the two forecasts for profits before provisioning to give a lower and upper boundary estimation for capital needs. In the baseline scenario, the capital adequacy ratio of the banking system could remain around 11.9–12.8 per cent by end-2010. While capital adequacy remains on a more or less stable path at the

aggregate level, individual banks show strong heterogeneity, although the capital adequacy ratio of all the major, systemically important banks remains above 8 per cent. In the stress scenario, the aggregate capital adequacy ratio declines to 8.2–9.1 per cent by end-2010. But while capital adequacy is satisfactory at the aggregate level, there is significant asymmetry in this case as well. Namely, in the stress scenario, the capital adequacy of 40 per cent (or 57 per cent weighted by the balance sheet total) of the banking sector would not be satisfactory, which may also affect certain systemically important banks. In order to reach the legal minimum for capital adequacy, however, under-capitalised banks would need only a moderate amount of capital injections, totalling HUF 100-170 billion. Risks may be reduced by the commitment of domestic banks' parent banks to provide for the capital adequacy of their Hungarian subsidiaries, which has been demonstrated so far (in the form of significant capital increases during the year) and also confirmed in statements on 20 May 2009<sup>44</sup> and 25 September 2009.<sup>45</sup> Another risk mitigation factor is that state of Hungary extended the availability of the scheme for the EUR 1 billion capital fund that would be sufficient to cover the banking system's capital need even in the stress scenario.

**The calculations described above involve a high degree of uncertainty.**

Our calculations have not taken into account market and liquidity risks as well as the effect of possible contagions through banks' exposures to one another. When exploring the correlations between various macroeconomic variables and loan losses – as our time series do not contain an economic downturn similar in magnitude to the current one – we managed to take account of non-linearities only to a very limited extent, which may lead to an underestimation of risks especially in the case of extreme shifts. In the case of foreign subsidiaries of Hungarian banks we have a much less detailed picture of the correlations between the macroeconomic environment and loan losses. Banks' income generating capacity shows much uncertainty, as it is difficult to judge at this juncture, whether or not the relatively good performance of banks in 2009 until now is due to temporary effects, and whether or not it reflects a long-term adjustment of the banking sector.

<sup>43</sup> For the calculation of capital adequacy we also need the risk-weighted assets. Here we assumed that they change in proportion to outstanding loans.

<sup>44</sup> <http://www.imf.org/external/np/sec/pr/2009/pr09180.htm>.

<sup>45</sup> <http://europa.eu/rapid/pressReleasesAction.do?reference=IP/09/1359&format=HTML&aged=0&language=EN&guiLanguage=en>.



## **3 Risk-reducing measures**





*The financial crisis posed several challenges for the Hungarian authorities responsible for financial stability, including the Magyar Nemzeti Bank. In response to these challenges and with a view to strengthening financial stability, the central bank took actions in two main areas. The MNB drew public attention to the increased risks associated with foreign currency lending on several occasions, including its Reports on Financial Stability. As the financial crisis has significantly raised the dangers of foreign currency lending, the MNB urges the authorities to adopt, as soon as possible, regulations designed to reduce such risks materially and strengthen responsible lending. Such regulations may involve tightening the risk policies and lending conditions of the individual banks, including restrictions on the loan-to-value (LTV) ratio, the payment-to-income (PTI) ratio, the currency denomination and the maximum term of vehicle financing. At the same time, in a joint effort with other institutions responsible for safeguarding financial stability, the MNB has actively participated in the elaboration of a new supervisory structure. According to the government proposal, in the new structure the HFSA would be empowered to adopt regulations on certain issues; the scope of the Magyar Nemzeti Bank's responsibilities regarding financial stability would be expanded; the legal status and organisational structure of the HFSA would be modified; and a Financial Stability Council would be set up with a mandate to coordinate system-level and individual-level supervision.*

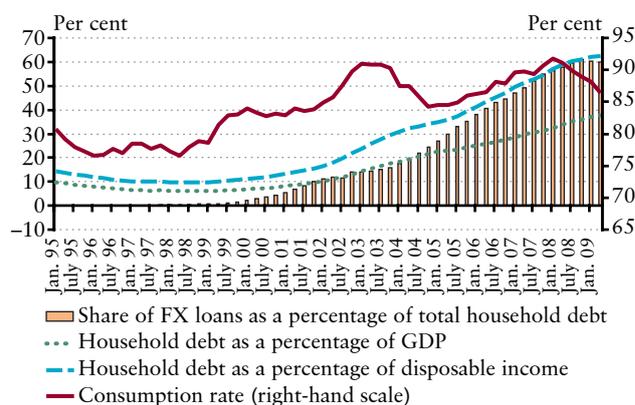
## 3.1 Regulatory proposal by the MNB to strengthen responsible lending

Over recent years the rapid rise in household indebtedness contributed significantly to the vulnerability of the Hungarian financial system. Since 2000 a surge has been observed in household lending (see Chart 3-1). The growing role of household financial intermediation was partly a fundamental process, providing an opportunity to optimise consumption-saving decisions for a growing range of households for a longer period of time. At the same time, it can be assumed that the rise in household indebtedness was faster than justified by the convergence or equilibrium process. The domestic consumption rate – which is high in international comparison – and the sustained high current account deficit in recent years also point in this direction. At the individual level, the greatest danger associated with foreign currency lending lies in the excessive risk-taking of individuals. At the system level three major risks may arise: the excessive indebtedness of households (capital mismatch); the exchange rate risk associated with foreign currency loans (currency mismatch); and the difference between the asset-liability maturities of the banking sector (maturity mismatch).<sup>46</sup> The excessive indebtedness of households may lead to external imbalance and an unsustainable growth path, further increasing the vulnerability of the country. A marked exchange rate depreciation increases the instalment amounts of foreign currency loans, restricting households' disposable income and declining consumption as well as undermining the repayment probability of household loans. The maturity mismatch<sup>47</sup> characterising the banking sector generates significant liquidity and financing risks. As a result of the financial crisis, risks deriving from household foreign currency lending have materialised. Declining risk appetite led to a weakening of the HUF exchange rate and a significant increase in sovereign risk premia simultaneously, which also increased banks' financing costs. Through a substantial, sustained devaluation and the incorporation of banks' higher funding costs into the lending rates, the rising instalment amount payable by households with foreign currency loans and the income shocks at households generated a substantial increase in defaults, which in turn deteriorated the financial position of the banking sector. In addition, liquidity risks were significantly heightened by the

shrinking of external financing opportunities and the drying up of the FX swap market. All these factors contributed to limiting the monetary policy's room to manoeuvre in the past period.

**Aiming to reduce risks associated with foreign currency lending and indebtedness and to strengthen responsible lending, the MNB has proposed regulatory interventions in the area of household lending.** In the view of the Magyar Nemzeti Bank, the use of regulatory measures is required in this respect. The regulation aims at tightening the risk policies of individual banks as well as credit conditions for household loan products by prescribing individually tailored conditions for HUF-, euro- and other foreign currency-based loans based on the different risks they imply. This could involve the definition of limits regarding the loan-to-value (LTV) ratio, the payment-to-income (PTI) ratio and the maximum term of vehicle financing. In defining the maximum level of LTV, real estate market price fluctuations and risks deriving from depressed prices associated with fire sales should be taken into consideration in particular. Accordingly, a market price-based LTV limit of 70 per cent is recommendable for household HUF-denominated loans.<sup>48</sup> In the case of the PTI ratio, the limit on payment capacity can be estimated from the verifiable net

**Chart 3-1**  
**Household debt and household consumption rate**



Source: MNB.

<sup>46</sup> It is important to stress that imbalances may build up at the macro level even though risks do not increase at the micro level.

<sup>47</sup> Renewal risks are aggravated by the fact that long-term FX mortgage loans are financed through short-term external funds or short-term FX swaps.

<sup>48</sup> The market price-based 70 per cent LTV limit is approximately equivalent to an 80-85 per cent collateral-based LTV limit.

**Table 3-1****Summary of the MNB's proposal**

Loan type	Currency	MNB's proposal		
		Up to HUF 250,000 monthly net income*	Up to HUF 500,000 monthly net income*	From HUF 500,000 monthly net income*
For all types of household loans maximum payment-to-income ratio	HUF	30 per cent	40 per cent	50 per cent
	EUR	23 per cent	31 per cent	38 per cent
	Other currency	15 per cent	20 per cent	25 per cent
For household mortgages maximum loan-to-value ratio	HUF	70 per cent		
	EUR	54 per cent		
	Other currency	35 per cent		
For car purchase financing maximum loan-to-value ratio	HUF	80 per cent		
	EUR	62 per cent		
	Other currency	40 per cent		

Maximum maturity of car financing: 5 years

Notes: Publicly announced on 5 October.

\* The income limit is to be applied to the entire household (incomes are added together in the case of more wage-earners).

[http://english.mnb.hu/engine.aspx?page=mnben\\_pressreleases\\_2009&ContentID=13188](http://english.mnb.hu/engine.aspx?page=mnben_pressreleases_2009&ContentID=13188).

Source: MNB.

income of the household and the statistical minimum amount required for the sustenance of the household. For HUF-denominated loans, the MNB has proposed PTI limits of 30 per cent up to the net average income recorded by the household (net HUF 250,000 in 2008), 40 per cent up to HUF 500,000, and 50 per cent for net average incomes higher than that. Based on exchange rate volatility, the limit for euro-denominated products should be 30 per cent tighter for both LTV and PTI; and for loans denominated in foreign currencies other than euro further tightening of a similar magnitude is justified (Table 3-1 summarises the MNB's proposal). An LTV limit of about 70 per cent exists in a number of countries including Austria, Romania, Bulgaria and Ireland. Application of PTI limits can be found in fewer countries. In addition to the Netherlands, there are supervisory loan-to-income (LTI) limits or PTI limits in Greece and in Romania.

**Application of these limits proposed for HUF and foreign currency loans by the MNB would prevent excessive easing of credit conditions and excessive household's indebtedness thus contribute to more sustainable economic growth and lower external vulnerability on long run.** As the growth rate of the foreign currency loan portfolio decelerated significantly by the beginning of 2009, while the share of HUF loans

increased, adoption of the limits at the present time would not have a serious impact on the flow of credit and the performance of the banking sector and the macroeconomy. Nevertheless, as past experiences have shown, risks are prone to rebuild quickly and therefore the proposed regulation should be adopted even before the period of recovery. To demonstrate the effect of the limits, we present below the alternative macroeconomic path which the country would have followed in the past if the limits had been introduced earlier. For the purposes of this simulation we assumed that clients exceeding the limit would have borrowed a smaller loan amount consistent with the limit. In this case, if the limits had been introduced in January 2004, net lending during the five years between 2004 and 2008 would have been lower by around HUF 1,200 billion.<sup>49</sup> This implies that the household loan portfolio, which amounted to HUF 9,500 billion at the end of 2008, would have been around HUF 8,300 billion. A tightening of credit conditions on this order of magnitude would not have generated similar constraints on consumption and investment spending. The reason for this is the fact that many households may have responded by downsizing their financial assets, rather than restraining their consumption and investment activity significantly, which means that mainly lower-income households would have demonstrated a more pronounced real economic adjustment. The proposed regulations would have generated more

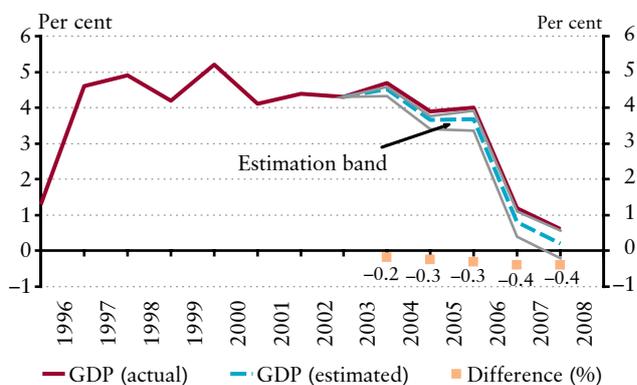
<sup>49</sup> Upon estimating the impact of supervisory LTV limits on lending, we should not use the data from 2007–2008 as the starting point. Indeed, loans were extended under excessively lax conditions in that period, and thus we need to take into account a period when there were tighter lending conditions, thereby allowing us to observe a full cycle.

substantial restraint in (net) credit expansion in the last two years mainly, thus the real economic effects would have been the strongest in this period. According to our estimates, the loss in new disbursements would have reduced the consumption and investment demand of households by around 20-55 per cent of the initial amount. Overall, in the past five years lower lending activity would have decreased GDP dynamics by 0.3 percentage points on average (see Chart 3-2). At the same time – depending on the applied model – the results of our estimates are dispersed in a wide range (between 0.1 and 0.5 annually). It is worth noting that at the time being, our macro-econometric models, used for forecasting, could not capture entirely the simultaneous feedback loops between the banking sector and the real economy, which eventually could lead to larger estimation errors. In addition to the quantification of growth effects it should be stressed that regulation affecting household lending would have impacted only the actual growth rate of the economy, and would have had practically no effect on long-term potential growth. The short-term output loss

would have been offset by a more favourable long-term growth structure and lower external vulnerability i.e. lower net external debt, which may have also reduced the extent of the negative real economic adjustment observed this year.

**Chart 3-2**

**Effect of tighter credit conditions on GDP growth**



Source: MNB.

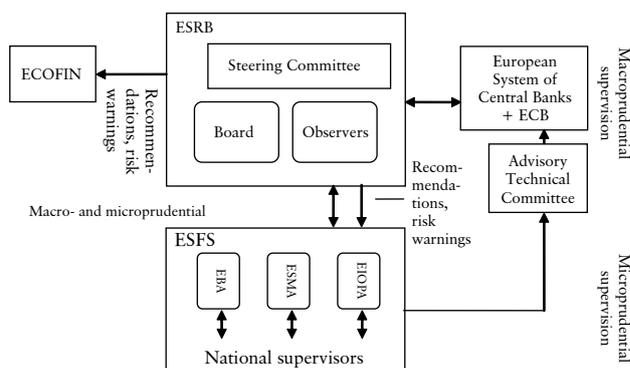
## 3.2 Proposal to set up a new financial supervisory structure

**Reinforcement of the macroprudential analytical and intervention framework is a key task.** As crisis experiences have confirmed, even if the participants appear healthy and stable individually, certain risks may materialise at the level of the financial system, which increase the vulnerability of the overall system. Macroprudential analysis should address two main dimensions of systemic risks. First of all, it should examine the distribution of risks between the sectors, and identify the type and magnitude of risks that affect the main parts of the intermediary system at that point. On the other hand, it is equally important to examine the time dimension; in other words, to assess how systemic risks evolve over time, and how the behaviour of the participants of the intermediary system may escalate these risks. Although it will take a long time to fully recover from the current crisis, the foundations for a system that will be capable of preventing the next, equally deep crisis should be laid down now, during the period of regeneration.

**Changes in attitude, as well as structural and organisational changes are required in the European Union.** In its proposals regarding the structural transformation of the European Union's financial supervision, the expert group chaired by Jacques de Larosière pointed out that too much attention was being paid to the examination of individual institutions in the EU as well. The new two-prong (macro- and microprudential) European supervision system (see Chart 3-3) proposed by the report will be set up as early as 2010. On the one hand, the European Systemic Risk Board (ESRB) will be established, in which central banks will play a key role. The main task of this organisation will be to explore the systemic risks threatening the financial stability of the EU. However, the ESRB will not have tools for direct intervention to circumvent the identified systemic risks on its own. Instead, it will draw attention to threats and will put forward specific proposals as required to the ECOFIN Council, the Member States or supervisory authorities. While these proposals will not be legally binding, the 'addressees' will be required to provide an explanation if they fail to implement the proposed actions ('act or explain' mechanism). As regards microprudential supervision, the

Chart 3-3

### Proposed new European Supervisory Structure



Source: European Commission.

European System of Financial Supervisors (ESFS) will be established with a mandate to provide a framework for closer cooperation between national supervisors.

The existing European supervisory committees – whose role is currently limited to consultation – will become authorities<sup>50</sup> (European Supervisory Authorities, ESA), and will be primarily responsible for the standardisation of national regulations and supervisory practices, and cooperation and information flow between national supervisors. The supervision of financial markets and individual institutions will basically remain a national responsibility. Therefore, the ESFS – as a kind of decentralised network – will be composed of Member State supervisors (set up in colleges of supervisors 'around' cross-border financial groups) and the three European authorities.

**In line with the European changes, the draft legislation<sup>51</sup> on the reform of domestic supervision strengthens the coordination between micro- and macroprudential supervision, and supplies both the HFSA and the MNB with more efficient tools.** In response to frictions experienced in the handling of the financial crisis, the cumbersome nature of the supervisory decision-making mechanism and the insufficiency of the supervisory tool-set, the government decided to revise the supervisory framework.

<sup>50</sup> The three future authorities are comprised of the European Banking Authority (EBA), the European Securities and Markets Authority (ESMA) and the European Insurance and Occupational Pensions Authority (EIOPA).

<sup>51</sup> In view of the fact that the Parliament has not passed the legislation as of the date of the Report, we will limit its description to the expected changes, of which we will only highlight the modifications most relevant to the topic discussed.

Having considered a number of possible alternatives, the government puts forward a draft legislation to Parliament, which is aimed at providing both the HFSA and the MNB with more efficient tools, while at the same time strengthening the coordination between micro- and macroprudential supervisions. The HFSA will be reinforced and made more efficient by becoming more independent of the government, and by assuming the status of an autonomous administrative body (rather than being a government office) ‘reporting’ directly to Parliament. The governing body of the Supervisory Board will be replaced by personal governance (by the chairman), which is expected to produce better response times. As another important change, the HFSA will be empowered to issue legally binding regulations, which will reinforce its influence on the prudent operation of market participants on the one hand, and may allow for more flexible regulatory responses to emerging risks on the other hand. The other prong of the legislation makes provisions regarding the roles of the HFSA, the MNB and the Ministry of Finance in financial supervision and regulation. This partly implies new directions, and partly intends to clarify existing roles. Within the new framework the HFSA will continue to focus on the stability and prudent operation of individual institutions, and will strive to identify and restrain the actions and risks threatening specific sectors. The central bank assumes the main responsibility for identifying risks jeopardising the stability of the financial system as a whole. Closer cooperation between the two

authorities will be institutionalised and formalised. Accordingly, the MNB will be represented in the Financial Stability Council (FSC),<sup>52</sup> a new organisation set up for the strategic control of the HFSA, which will allow the MNB to impose its macroprudential aspects on the activity of the HFSA more forcefully, including the identification of target areas for supervision, or the contents of guidelines issued by the HFSA. The 6-member organisation will have two representatives from the HFSA, the MNB and the Ministry of Finance, respectively.

**In order to prevent the rapid build-up of systemic risks, the legislation also vests the MNB with new competences, and formalises the role of the central bank in the identification and analysis of systemic risks.** The MNB would receive additional authority in two areas. If the macroprudential analyses indicated an accelerated build-up of risks, the MNB would have authority to intervene directly, i.e. to restrict, ban or impose conditions on certain activities or products for a pre-defined period of time (maximum 120 days). Moreover, the MNB’s competences regarding the initiation of legislation will be enhanced as well. According to the draft legislation, if – in the interest of preserving financial stability – the central bank proposes legislation to the government or the HFSA, they will have to provide a detailed explanation in the case of rejection, as is the case with the recommendations of the European Systemic Risk Board described above.

<sup>52</sup> Essentially, the FSC would be set up as an enhanced version of the Financial Stability Committee established in 2005 with the participation of the MNB, the Ministry of Finance and the HFSA. The former organisation did not have decision-making authority and had a consultation role only; moreover, its activity was based on a cooperation agreement between the three authorities rather than on national legislation.

# **Appendix: Macro-prudential indicators**

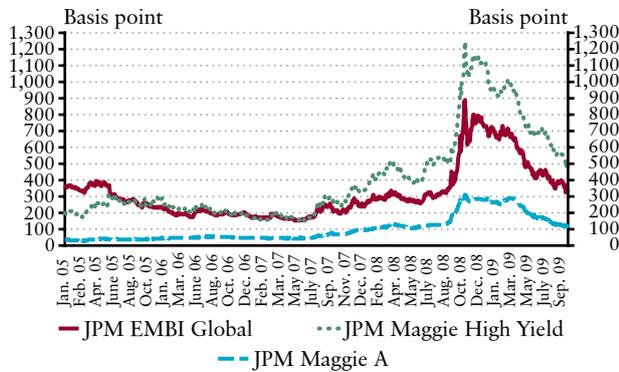




# 1 Risk appetite

**Chart 1**

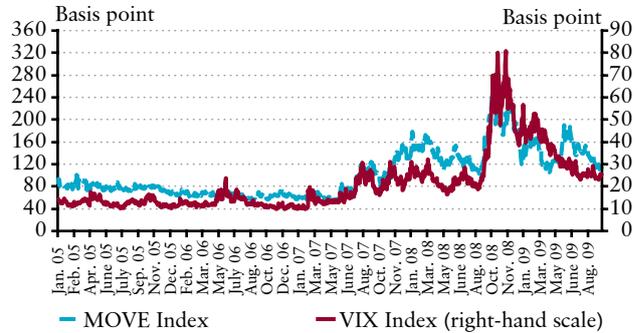
## Primary risk indicators



Source: Datastream, JP Morgan.

**Chart 2**

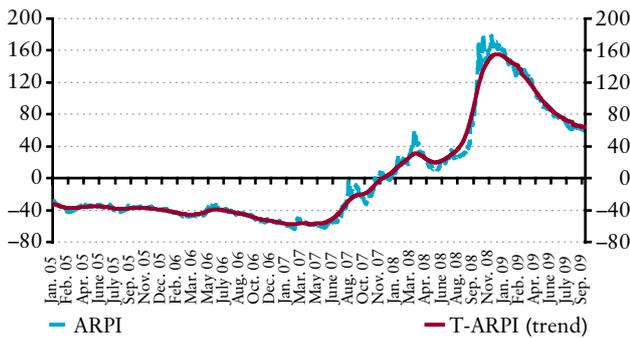
## Implied volatility of the primary markets



Source: Datastream, Bloomberg.

**Chart 3**

## Dresdner Kleinwort indicator



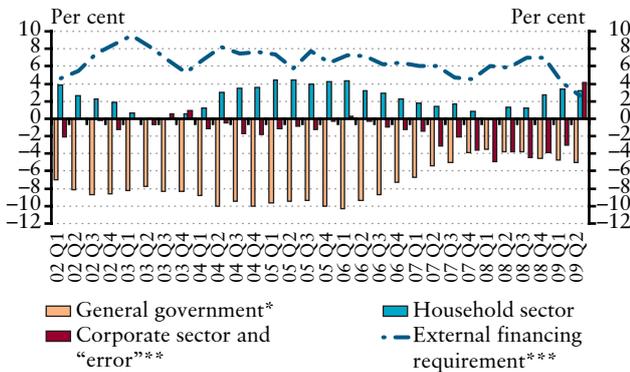
Source: DrKW.

# 2 External balance and vulnerability

**Chart 4**

## Net financing capacity of the main sectors and external equilibrium as percentage of GDP

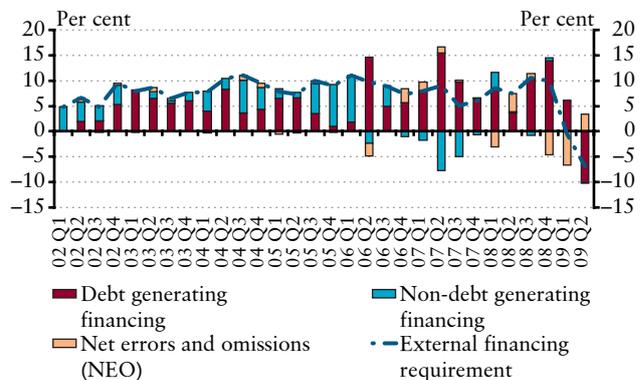
(seasonally adjusted)



Source: MNB.

**Chart 5**

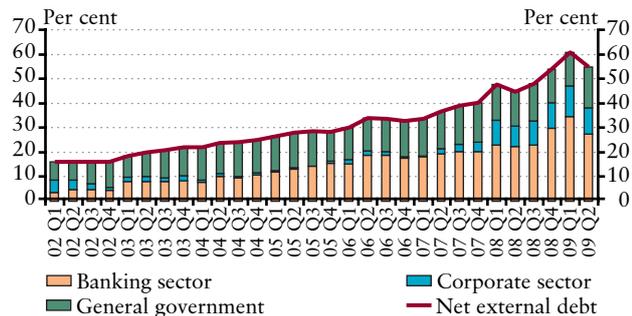
## External financing requirement and its financing as percentage of GDP



Source: MNB.

**Chart 6**

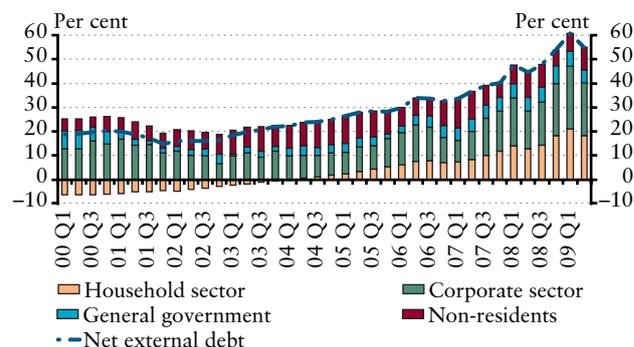
**Net external debt as percentage of GDP**



Source: MNB.

**Chart 7**

**Open FX position of the main sectors as percentage of GDP**



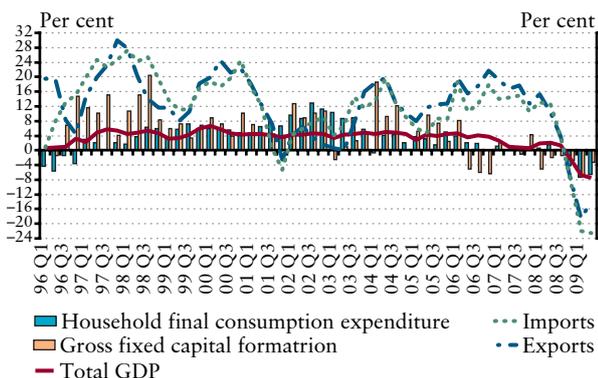
Source: MNB.

**3 Macroeconomic performance**

**Chart 8**

**GDP growth and its main components**

(annual growth rate)

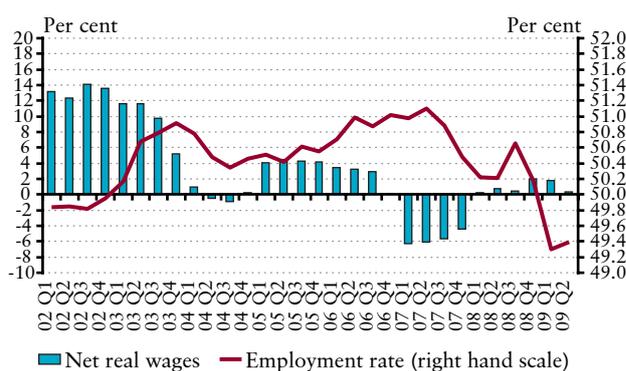


Source: HCSO.

**Chart 9**

**Employment rate and net wage developments**

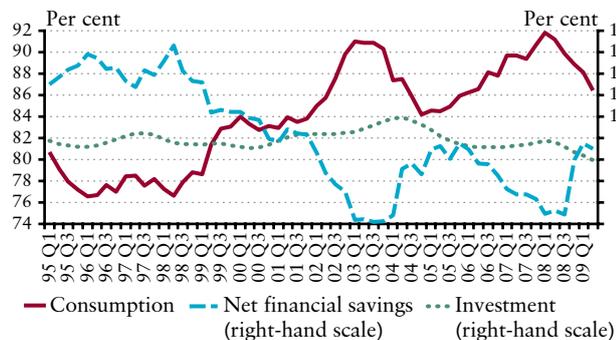
(annual growth rate)



Source: HCSO.

**Chart 10**

**Use of household income as a ratio of disposable income**

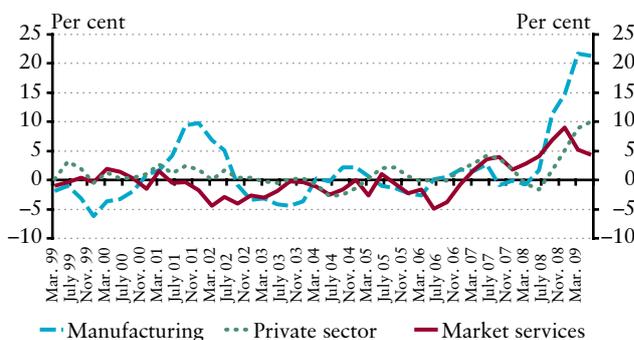


Source: HCSO, MNB.

**Chart 11**

**Corporate real unit labour cost in the private sector**

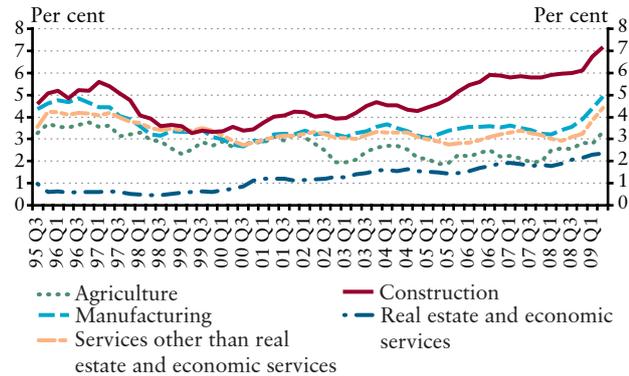
(annual growth rate)



Source: HCSO, MNB.

**Chart 12**

**Sectoral bankruptcy rates**

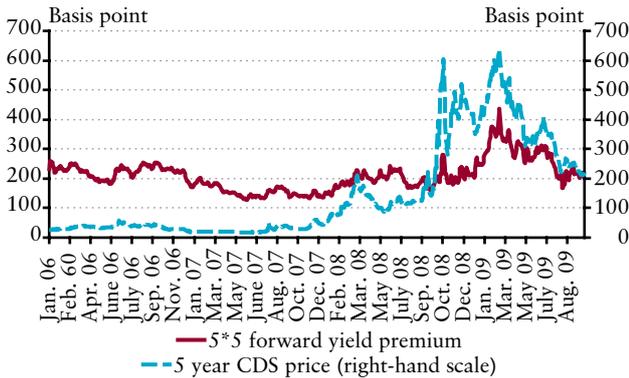


Source: Opten, HCSO, MNB.

**4 Monetary and financial conditions**

**Chart 13**

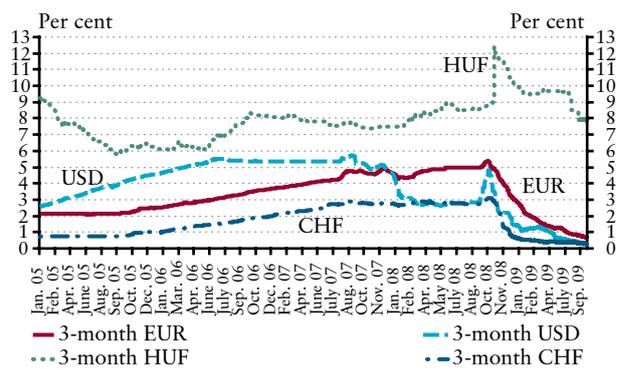
**Long-term default risk and forward premium of Hungary**



Source: Datastream, Reuters.

**Chart 14**

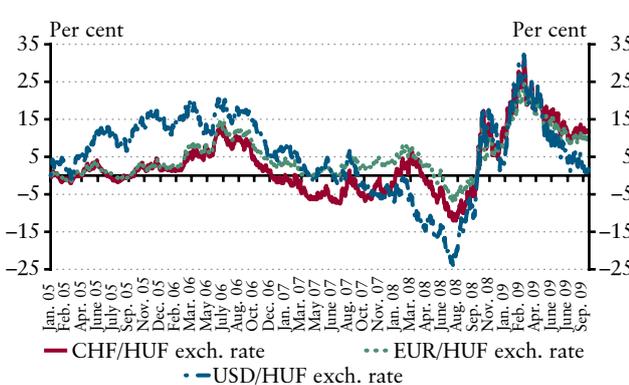
**Three-month EUR, USD, CHF and HUF money market interest rates (LIBOR and BUBOR fixing)**



Source: Reuters.

**Chart 15**

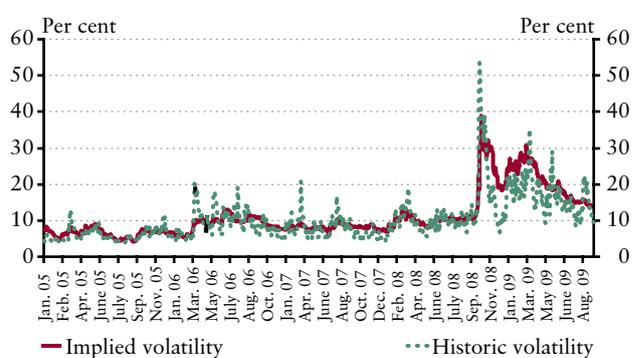
**HUF/EUR, HUF/USD and HUF/CHF exchange rates compared to January 3, 2005**



Source: Reuters.

**Chart 16**

**Volatility of the HUF/EUR exchange rate**

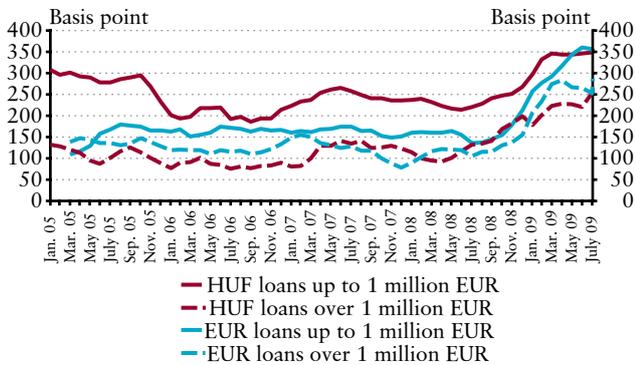


Source: Reuters, MNB.

**Chart 17**

**Interest rate premium of new loans to non-financial enterprises**

(over 3-month BUBOR and EURIBOR, respectively, 3-month moving average)

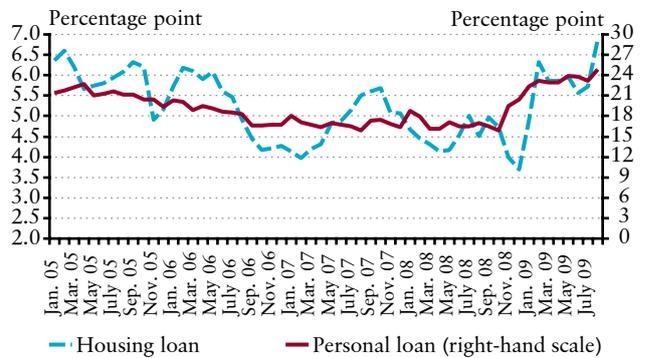


Source: MNB, Euribor.

**Chart 18**

**Interest rate premium of new HUF loans to households**

(over 3-month BUBOR)

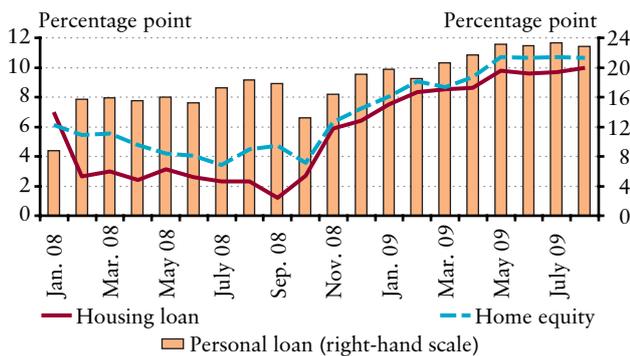


Source: MNB.

**Chart 19**

**Interest rate premium of new EUR loans to households**

(over 3-month EUR LIBOR)



Source: MNB, Euribor.

**5 Asset prices**

**Chart 20**

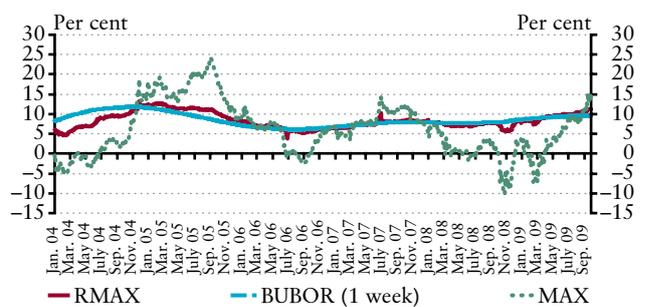
**Real home prices**



Source: Origo.

**Chart 21**

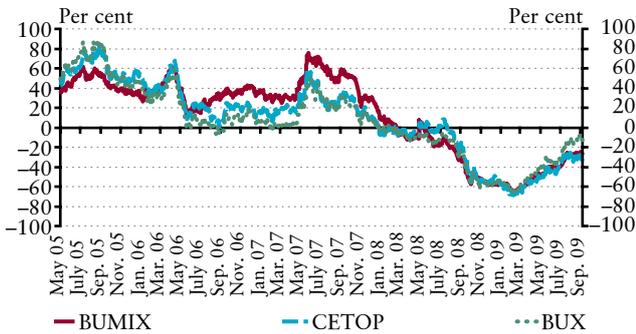
**Annualised yields on government securities' indices and money markets**



Source: Government Debt Management Agency, MNB, portfolio.hu.

**Chart 22**

**Annual yield of key Hungarian and Central and Eastern European stock market indices**

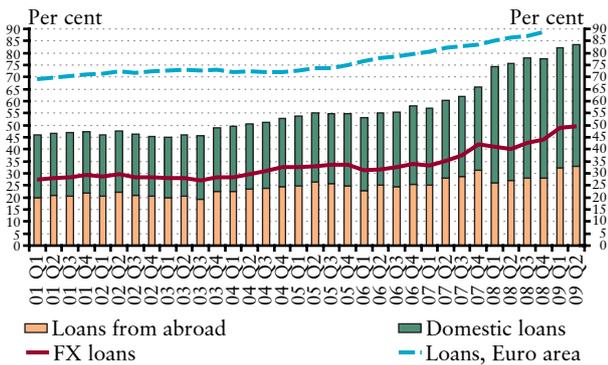


Source: BSE, portfolio.hu.

**6 Risks of the financial intermediary system**

**Chart 23**

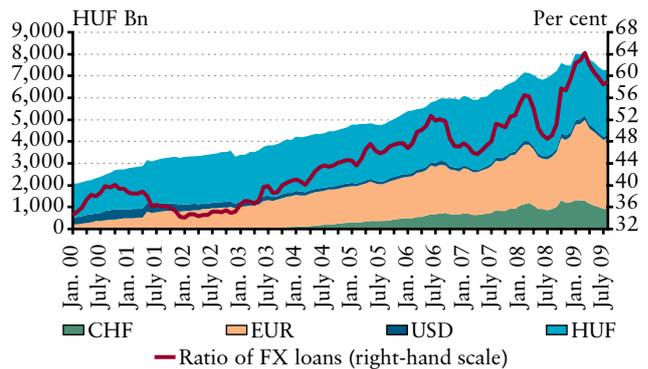
**Indebtedness of non-financial enterprises as a percentage of GDP**



Source: MNB, Eurostat.

**Chart 24**

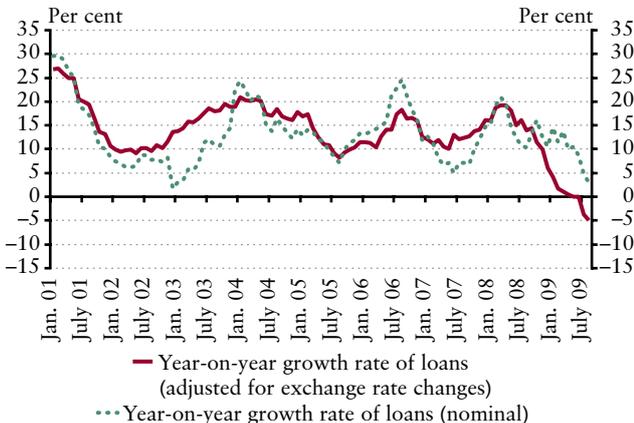
**Denomination structure of domestic bank loans of non-financial enterprises**



Source: MNB.

**Chart 25**

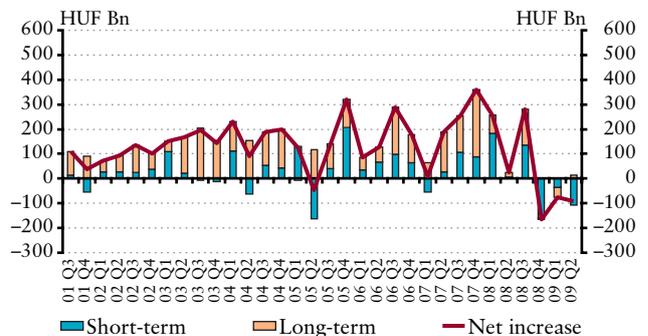
**Annual growth rate of loans provided to non-financial corporations by domestic banks**



Source: MNB.

**Chart 26**

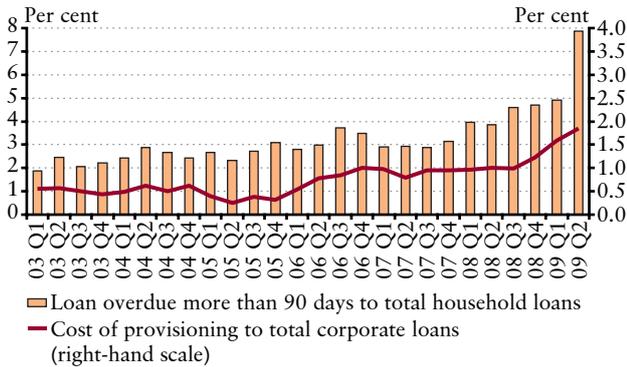
**Net quarterly change of bank loan volumes of non-financial enterprises**



Source: MNB.

**Chart 27**

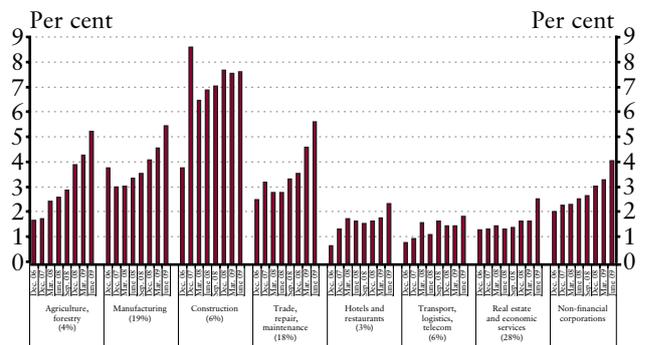
**Quality of the corporate loan portfolio**



Source: MNB.

**Chart 28**

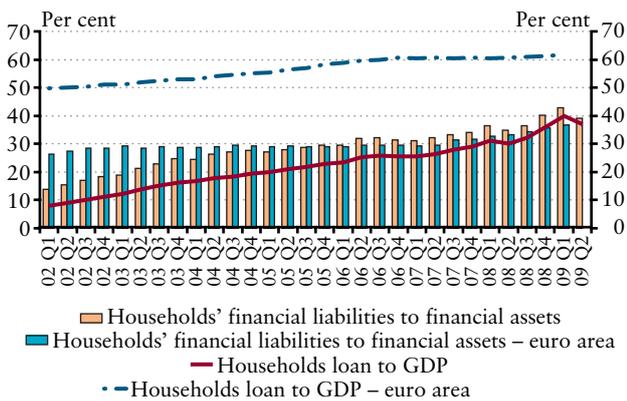
**Provisioning on loans of non-financial corporations by industry**



Source: MNB.

**Chart 29**

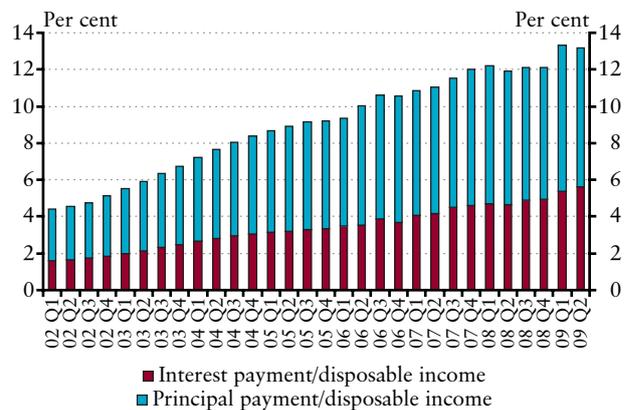
**Indebtedness of households in international comparison**



Source: ECB, MNB.

**Chart 30**

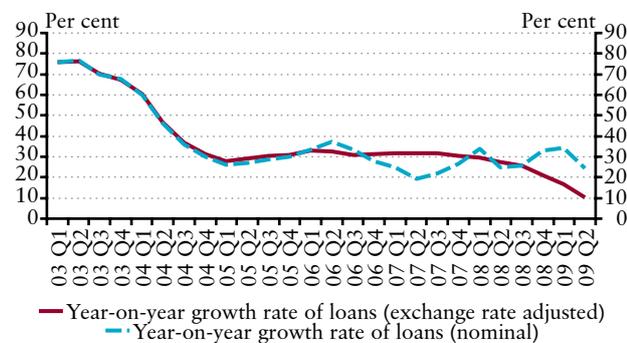
**Debt service burden of the household sector**



Source: MNB.

**Chart 31**

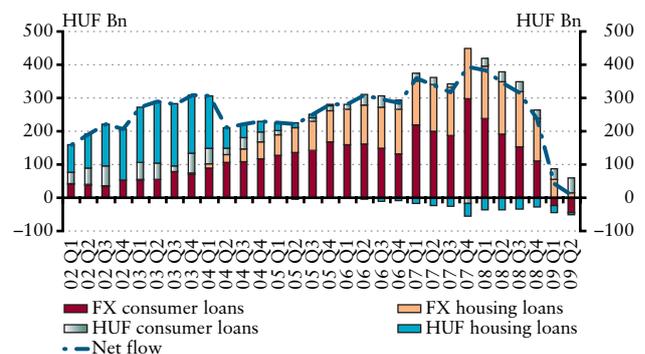
**Annual growth rate of total household loans**



Source: MNB.

**Chart 32**

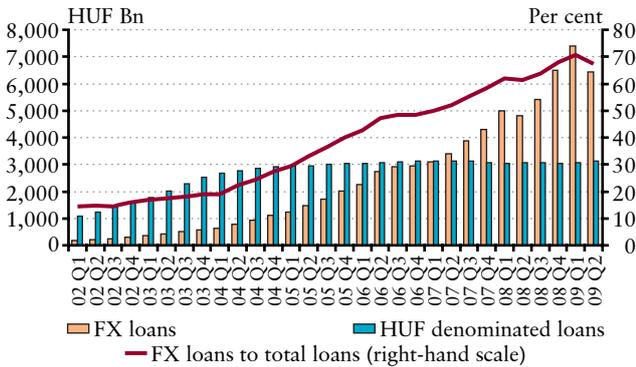
**Net quarterly change of bank loan volumes of households by main products and currencies, adjusted for exchange rate changes, seasonally adjusted**



Source: MNB.

**Chart 33**

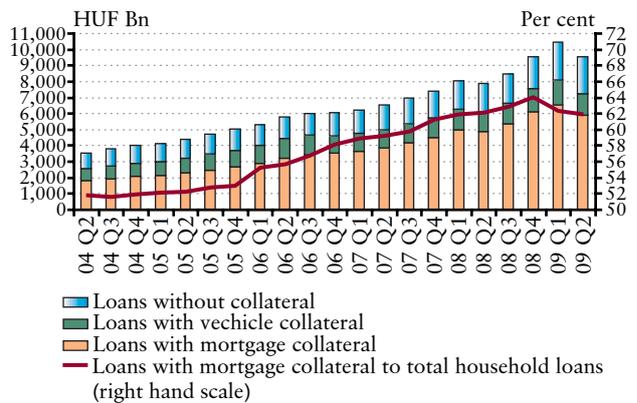
**Household loans distribution by denomination**



Source: MNB.

**Chart 34**

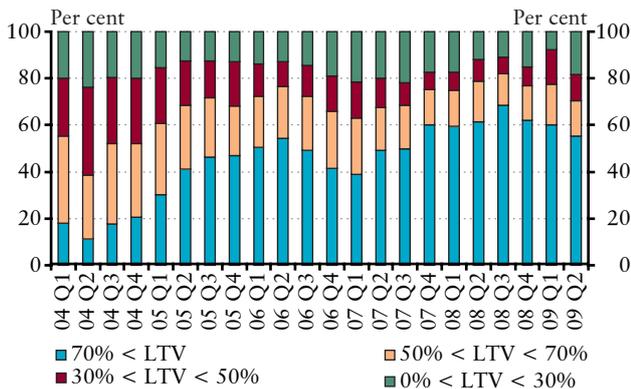
**Household loans distribution by collateral**



Source: MNB.

**Chart 35**

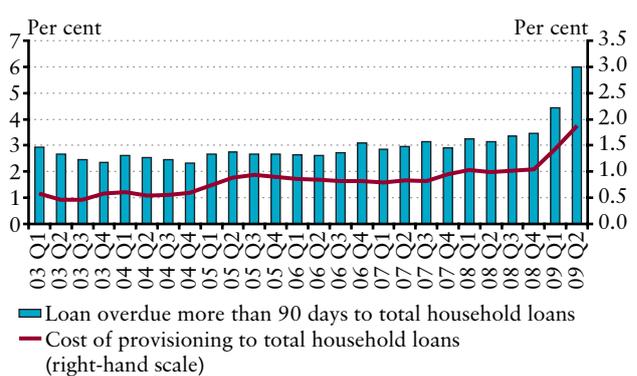
**Distribution of new housing loans by LTV**



Source: MNB.

**Chart 36**

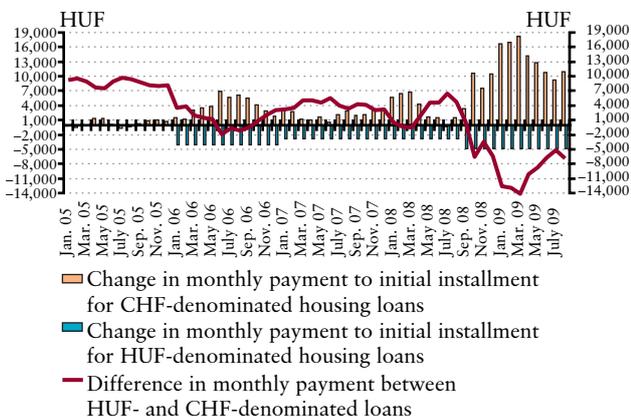
**Quality of the household loan portfolio**



Source: MNB.

**Chart 37**

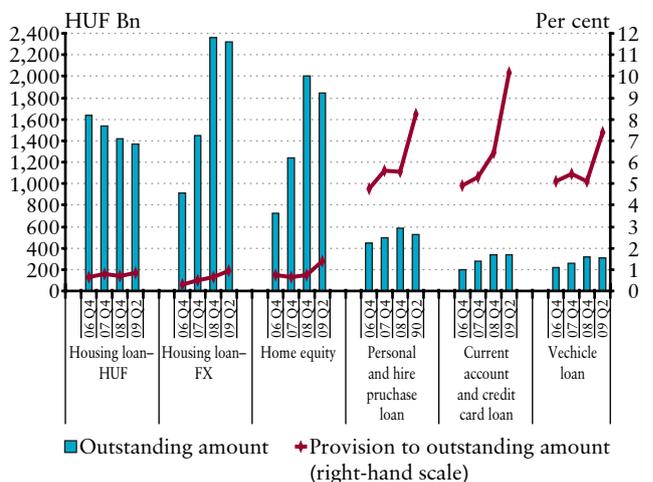
**Comparison of instalment payments of CHF- and HUF-denominated housing loans**



Source: MNB.

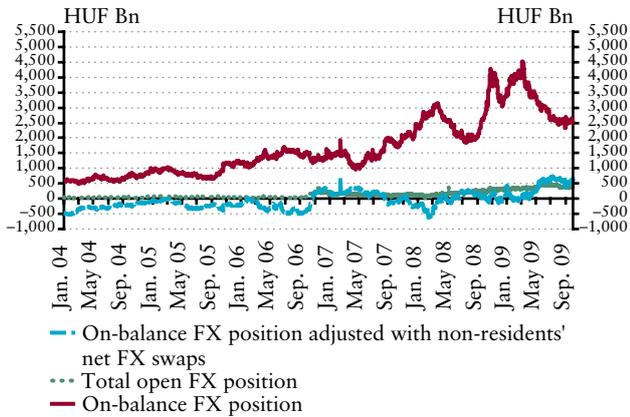
**Chart 38**

**Provisioning on household loans**



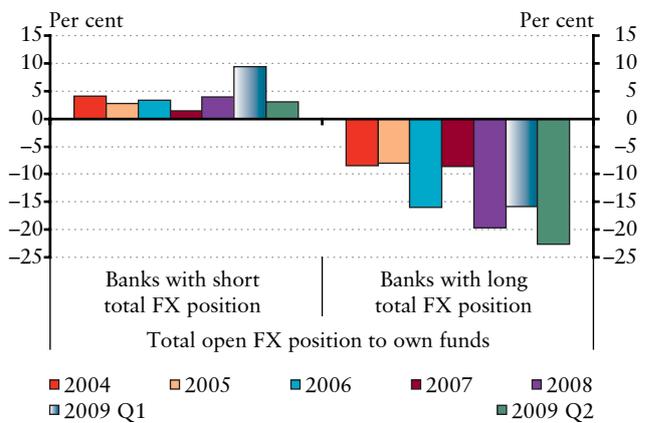
Source: MNB.

**Chart 39**  
**Open FX position of the domestic banking system**



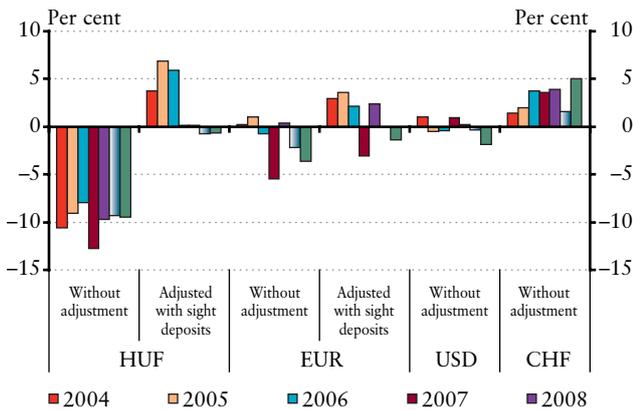
Source: MNB.

**Chart 40**  
**Banking sector's exchange rate exposure**



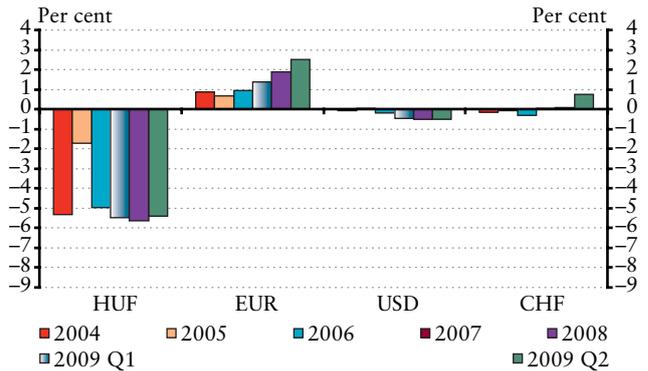
Source: MNB.

**Chart 41**  
**90-day re-pricing gap of the banking sector**



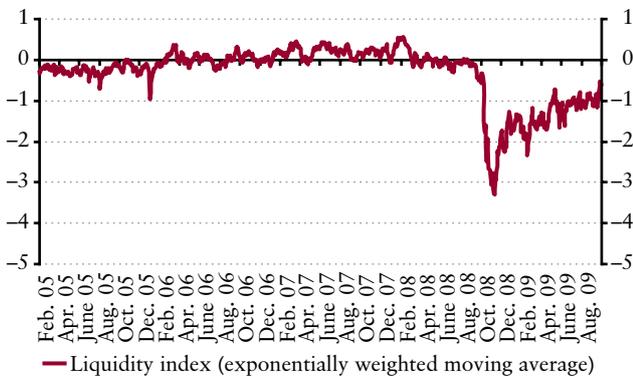
Source: MNB.

**Chart 42**  
**Estimated maximum loss based on interest rate risk stress tests relative to equity**



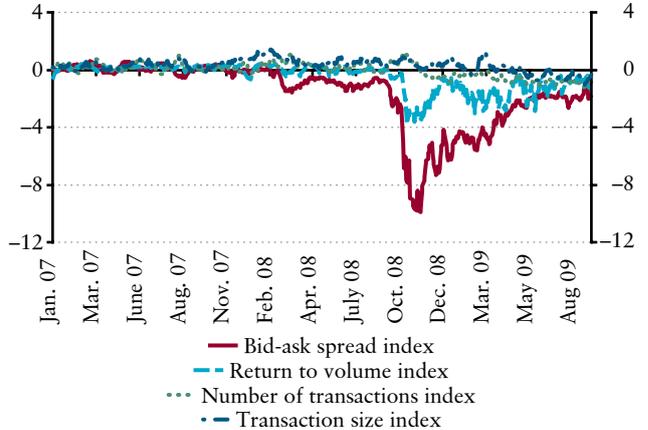
Source: MNB.

**Chart 43**  
**Liquidity index**  
(exponentially weighted moving average)



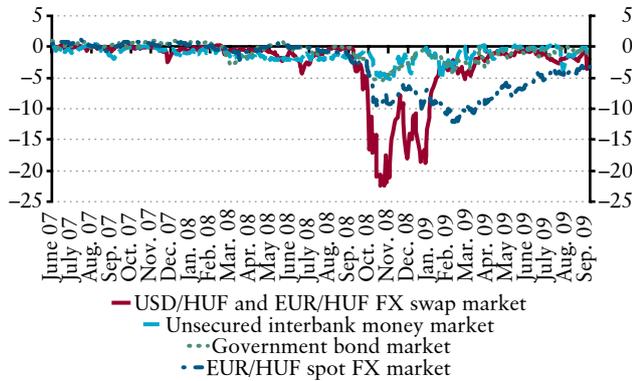
Source: MNB, KELER, Reuters, DrKW.

**Chart 44**  
**Liquidity sub-indices**  
(exponentially weighted moving average)



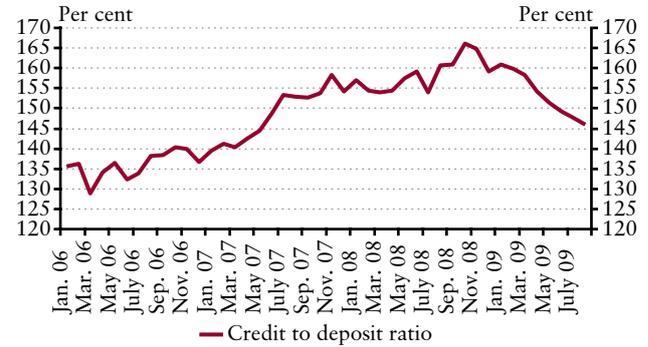
Source: MNB, KELER, Reuters, DrKW.

**Chart 45**  
**Bid-ask spread indices of the major domestic financial markets**  
 (exponentially weighted moving average)



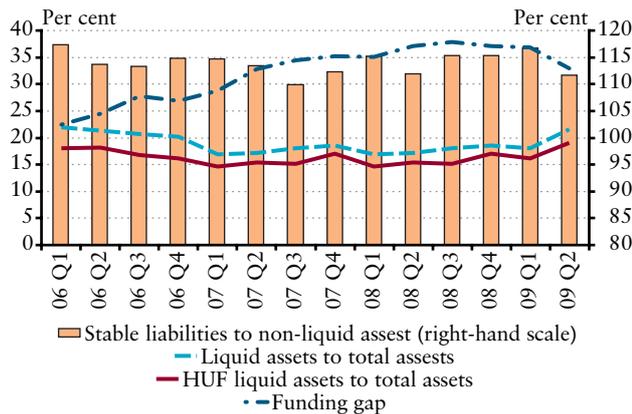
Source: MNB, KELER, Reuters, DrKW.

**Chart 46**  
**Credit to deposit ratio of the banking sector**  
 (adjusted for exchange rate changes)



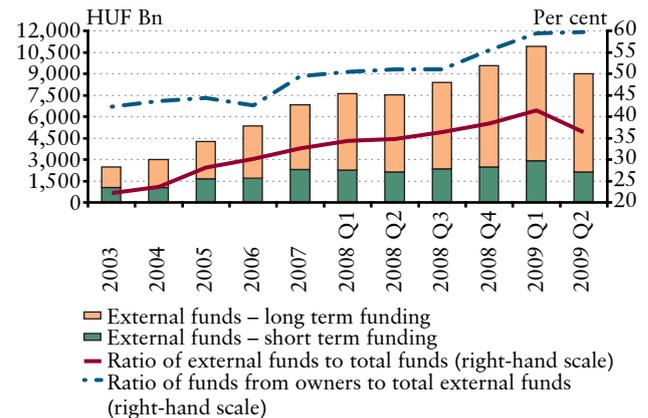
Source: MNB.

**Chart 47**  
**Liquidity ratios of the banking sector**



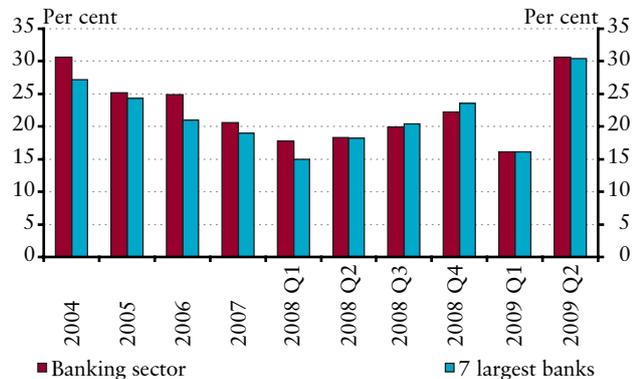
Source: MNB.

**Chart 48**  
**External funds of the banking sector**



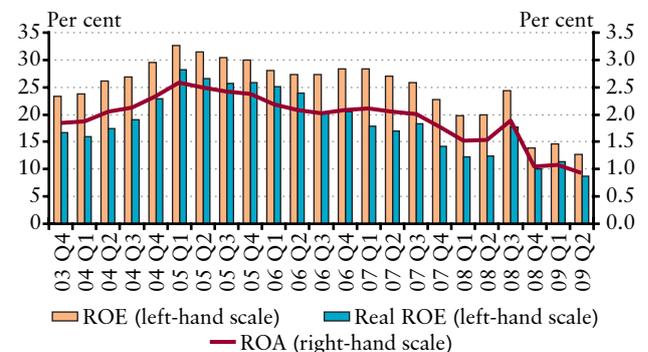
Source: MNB.

**Chart 49**  
**"One month" liquidity stress indicator of the banking sector**



Source: MNB.

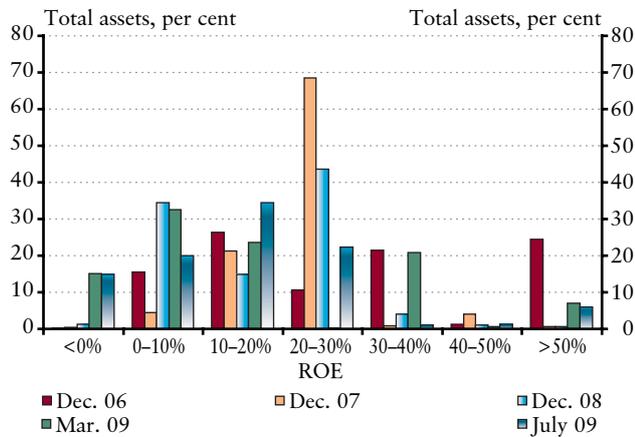
**Chart 50**  
**ROA, ROE and real ROE of the banking sector**



Source: MNB.

**Chart 51**

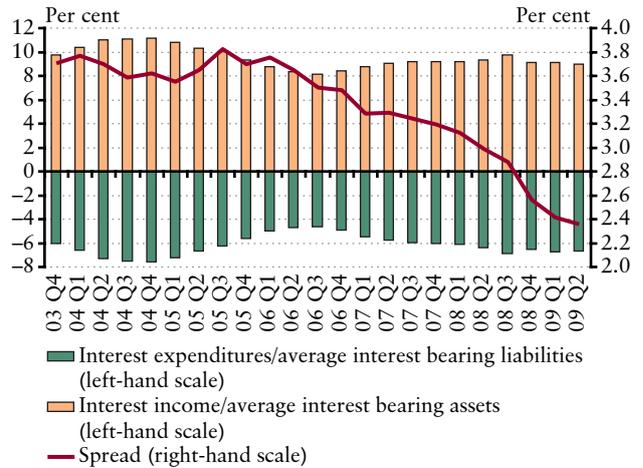
**Dispersion of banks' total assets by ROE**



Source: MNB.

**Chart 52**

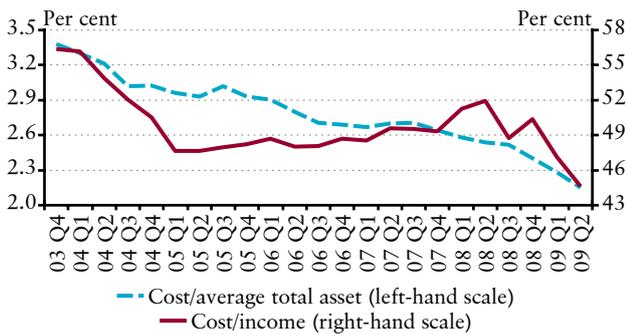
**Banking sector spread and its components**



Source: MNB.

**Chart 53**

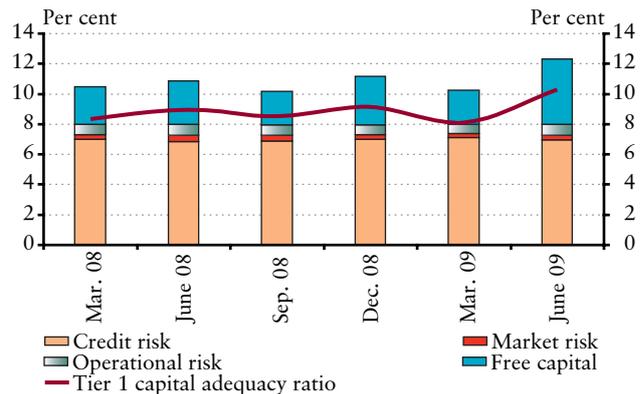
**Operating efficiency indicators of the banking sector**



Source: MNB.

**Chart 54**

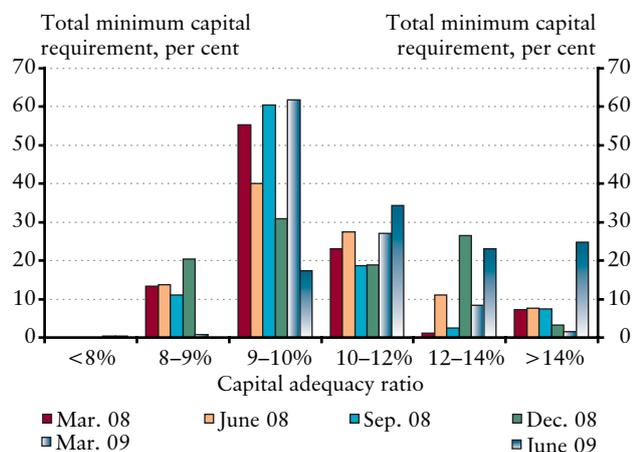
**Banks' capital adequacy ratios**



Source: MNB.

**Chart 55**

**Dispersion of banks' minimum capital requirement by capital adequacy ratio**

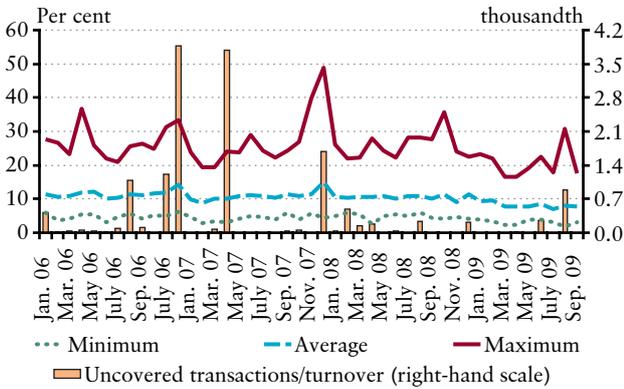


Source: MNB.

## 7 Risks of the payment systems

**Chart 56**

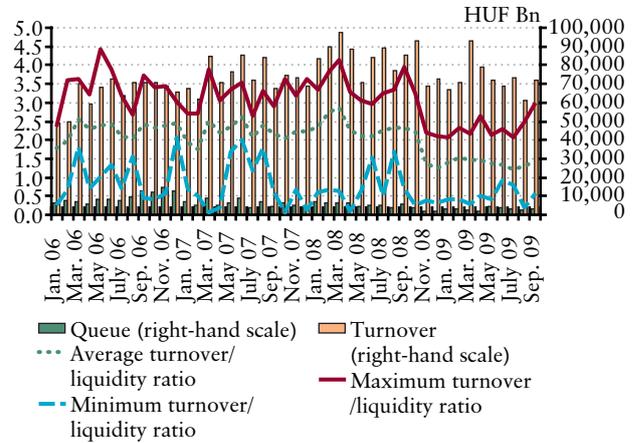
**Liquidity needed for settling IBC-turnover as a percentage of available liquidity and uncovered transactions as a percentage of the turnover**



Source: MNB.

**Chart 57**

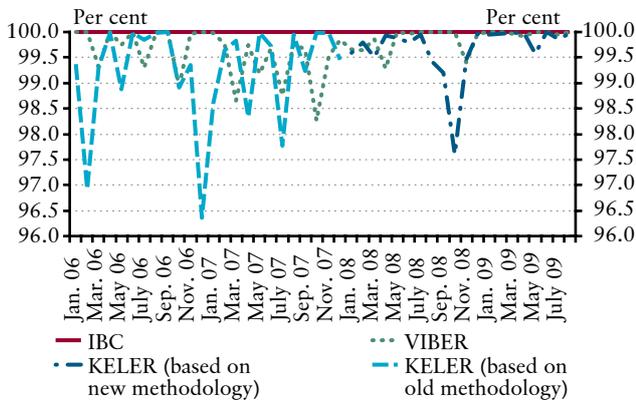
**Monthly turnover/liquidity ratio (VIBER) and monthly turnover and queue statistics**



Source: MNB.

**Chart 58**

**Availability of domestic overseen systems (IBC, KELER, VIBER)**



Source: MNB.

# Notes to the appendix

The chart date (e.g. 2008) means the end of the year (the 31st of December) if it's not indicated otherwise.

## **Chart 1:**

The increased value of the indicator indicates declining risk appetite or increasing risk aversion.

## **Chart 2:**

VIX: implied volatility of S&P 500.

MOVE: implied volatility of US Treasuries (Merrill Lynch).

## **Chart 3:**

The increased value of the indicator indicates declining risk appetite or increasing risk aversion.

## **Chart 4:**

\* General government: according to SNA methodology.

\*\* Corporate sector and "error": the financing requirement of corporate sector is calculated as a residual, so it includes errors.

\*\*\* External financing requirement: adjusted by the difference caused by imports brought forward on account of EU accession and by the import increasing impact generated by customs warehouses terminated due to EU accession and Gripen acquisitions.

## **Chart 10:**

Disposable income is estimated by MNB using the consumption, investment and financial savings data of households.

## **Chart 12:**

Number of bankruptcy proceedings of legal entities, summed according to the date of publication, cumulated for 4 quarters, divided by the number of legal entities operating a year before.

## **Chart 13:**

The 5-year forward HUF risk premium as of 5 years from now, compared to the euro forward yield (3-day moving average) and the 5-year Hungarian credit default swap spread.

## **Chart 16:**

Historic volatility: weighted historic volatility of the exchange rate (GARCH method).

Implied volatility: implied volatility of quoted 30-day ATM FX options.

## **Chart 20:**

Based on offer home prices in Budapest.

## **Chart 25:**

FX loans, exchange rate as of end-December 2000, HUF loans adjusted by state loan refinancing in December 2002.

## **Chart 26:**

FX loans on December 2000, end of month exchange rate.

## **Chart 39:**

An increase in the swap stock stands for swaps with a long HUF spot leg. Based on the daily FX reports of credit institutions. Calculated from swap transactions between credit institutions and non-resident investors. The MNB does not take responsibility for the accuracy of the data. Revisions due reporting errors and non-standard transactions can lead to significant subsequent modifications of the data series. The data series does not include swap transactions between branches, specialised credit institutions, cooperative credit institutions and non-resident investors. The swap stock is the sum of termin legs calculated at actual foreign exchange rates.

## **Chart 42:**

The interest rate risk stress test indicates the projected result of an extreme interest rate event; in this scenario this event is a parallel upward shift of the yield curve by 500 basis points for the HUF, and by 200 basis points for the euro, the US dollar, and the Swiss franc. For the calculations we applied re-pricing data and the Macaulay duration derived from them.

## **Chart 43:**

A rise in the liquidity index indicates an improvement in the liquidity of the financial markets.

## **Chart 44:**

Similarly to the liquidity index, increase in liquidity sub-indices suggests an improvement in the given dimension of liquidity.

## **Chart 45:**

A rise in the indices represents narrowing bid-ask spread, thus an increase in the tightness and liquidity of the market. The liquidity index of HUF FX-swap market includes the data of USD/HUF and EUR/HUF segments, taking into account of

tom-next, overnight and spot-next transactions. The earlier version of the liquidity index included only the tom-next USD/HUF transactions.

**Chart 46:**

Client loans include loans and bonds of non-financial institutions, household loans, loans and bonds of financial and investment enterprises, government loans, municipal loans and municipal bonds. Client deposits include the deposits of non-financial institutions, household deposits, deposits of money market funds, deposits of financial and investment enterprises, government deposits and municipal deposits. The loan-to-deposit ratio is exchange-rate-adjusted with respect to the last period.

**Chart 47:**

Funding gap is the difference between the exchange rate adjusted customer credit and deposit, divided by the exchange rate adjusted customer credit.

**Chart 49:**

Stress scenario: we assume a bank-specific liquidity shock that may originate, for example, from a crisis of confidence. Main assumptions:

- Banks are unable to renew their liabilities from sources other than deposits which are scheduled to expire within one month (primarily interbank liabilities).
- Customers withdraw the part of credit lines due within one month, or redeem the part of guarantees due within one month.
- Banks can obtain additional funds by using their liquid assets with only a “haircut” varying for each asset.
- Customers fail to repay their overdrafts.

The 1-month liquidity stress ratio shows the maximum possible customer deposit withdrawal within one month that could be covered by banks’ liquidity buffers, under the assumption that they can not obtain new funds from external sources (e.g. interbank market).

**Chart 50:**

ROE: pre-tax profit / average (equity – balance sheet profit).

ROA: pre-tax profit / average total assets.

Interim data are annualised.

Pre-tax profit: previous 12 months.

Average total assets: mean of previous 12 months.

Average (equity – balance sheet profit/ loss): 12 month moving average.

Deflator: previous year same month=100 CPI (%).

**Chart 51:**

Pre-tax profit.

**Chart 52:**

Interim data are annualised!

Interest income: previous 12 months

Interest expenditure: previous 12 months

Average interest bearing assets: mean of previous 12 months

Average interest bearing liabilities: mean of previous 12 months

**Chart 53:**

Cost: previous 12 months

Income: previous 12 months

Average total asset: mean of previous 12 months

**Chart 54:**

Capital adequacy ratio (CAR) = (total own funds for solvency purposes/minimum capital requirement)\*8%

Tier 1 capital adequacy ratio = (tier 1 capital after deductions/minimum capital requirement)\*8%

**Chart 57:**

Start-of-day balance adjustments and central bank payments are excluded.

**Chart 58:**

Due to differences in the nature of the overseen systems and in the calculation methodology, comparing the availability ratios can be misleading. The calculation methodology for the availability ratio for KELER was changed in January 2008. The ratios based on the new and old methodologies are not comparable, which is why we will publish the data based on the new methods for KELER in separate time-series.

Report on Financial Stability

– update –

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