



**MAGYAR NEMZETI BANK**

**REPORT  
ON FINANCIAL  
STABILITY**

**APRIL 2010**



# **Report on financial stability**

**April 2010**



**Published by the Magyar Nemzeti Bank**

**Publisher in charge: dr. András Simon**

**Szabadság tér 8-9. H-1850 Budapest**

[www.mnb.hu](http://www.mnb.hu)

**ISSN 1586-8338 (online)**



*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.

Primary contributors to this Report include Judit ANTAL, Tamás BALÁS, Ádám BANAI, Dániel HOMOLYA, András HUDECZ, Norbert M. KISS, Emese KURUC, Miklós LUSPAY, Zoltán MOLNÁR, Márton NAGY, Rita ODORÁN, Zsolt Oláh, Judit PÁLES, Róbert SZEGEDI, Béla SZÖRFI and Eszter TANAI. Other contributors to the background analyses in this Report include Gergely FÁBIÁN, Péter FÁYKISS, Gyöngyi KÖRMENDI, and Bálint TAMÁSI.

The Report incorporates the Monetary Council's valuable comments and suggestions following its meetings on 16 March and 12 April 2010. 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 12 March 2010.



# Contents

<b>Overall assessment</b>	7
<b>1 Money market and macroeconomic risks</b>	11
1.1 Improving global economic outlook, risks in developed countries' fiscal policies and in the functioning of the credit channel	14
1.2 Domestic economic outlook and external equilibrium are improving, but high external debt still causes vulnerability	19
<b>2 Risks of the financial intermediary system</b>	25
2.1 Significant decline in lending	28
2.2 Liquidity of the money market and the banking system is improving, the strong reliance on external funding is only declining slowly	42
2.3 Deteriorating portfolio quality, growing loan restructuring	51
2.4 Low market risks	55
2.5 High profitability, strong capital position	57
2.6 Liquidity and credit risk stress tests show adequate shock-absorbing capacity	63
2.7 High returns for institutional investors	67
2.8 Low risks in the domestic payment and settlement systems	69
<b>Appendix: Macro-prudential indicators</b>	73
Notes to the appendix	86





# Overall assessment

**Vulnerability resulting from the high net external debt and the decline in corporate lending, which hampers economic recovery, are key risks**

External equilibrium improved notably, and net external debt declined in 2009 as a result of the significant fiscal adjustment in recent years and an increase in the net financing capacity of the private sector. However, the high external and government debts, the banking sector's high loan-to-deposit ratio and households' considerable foreign currency loan stock continue to make Hungary vulnerable to external shocks.

On the demand side, corporate lending is restrained by low investment activity and only gradually rising production, while on the supply side it is restrained by the low level of household's bank savings as well as banks' low risk-taking willingness due to increased loan losses. As a result of tighter non-price conditions, banks lend only to corporations with better creditworthiness than previously, which is hindering economic recovery.

**Durability of the global economic upturn remains uncertain**

Global economic activity turned around in mid-2009, as the recovery from the recession got underway. However, in terms of the sustainability of this growth caution is warranted by the fact that a significant part of the favourable developments is attributable to government stimulus. Disturbances in the operation of the credit channel may also hamper the economic recovery in developed countries.

**Government debt has increased as a result of efforts to restore financial stability in developed countries and may cause financing problems**

Many developed countries were able to stabilise the functioning of the financial system and the economy only by assuming a portion of the risks and significantly increasing their fiscal deficit and government debt. From end-2009 on, the increase in financing risks continuously added to the CDS spreads of indebted countries. This led to financing difficulties over the short run in Greece, while over the longer term the increase in the government debt of other developed countries also raises sustainability problems.

**The credit channel has not yet normalised**

Despite the turnaround in the global economic cycle, lending by banks continues to decline in developed countries. Large banks are incurring losses as a result of portfolio deterioration, which leads to high costs of funding and a further decline in leverage compared to pre-crisis level. In terms of lending decisions and the regional allocation of funds, it may become increasingly important when and how lasting growth starts in individual sectors and countries, and from when clients' credit quality will begin to improve.

**Domestic growth prospects and external equilibrium are improving, but the economy is still vulnerable due to the high external and government debt**

Improving external demand had a favourable effect on Hungary's economic performance as well. At the same time, domestic demand still shows few signs of recovering. All of this has contributed to a strong improvement in external equilibrium. With the decline in the dependency on foreign funding net external debt has also decreased, but remains high in regional comparison, leaving Hungary vulnerable to external shocks.

**Corporations' and households' net financing capacity may remain positive further as well**

Presumably as a result of the uncertain growth and income prospects, the decline in the private sector's consumption and investment has been stronger than the decline in its income. Consequently, net savings have increased considerably, mainly in the corporate sector. Household's outstanding amount of loans has declined only mildly, while their financial assets have

increased. However, the increase in financial assets has fallen short of the magnitude preceding the crisis, which adds to the long-term sustainability risk of economic growth. The private sector's net savings position may remain in place in the future.

**The banking sector's loan-to-deposit ratio remains high, and may decline further**

With the private sector's improving net financing capacity, the loan-to-deposit ratio of the domestic banking sector declined in 2009. However, the current level of the loan-to-deposit ratio and accordingly dependence on foreign funding continue to be high in international comparison. The dependence of the banking sector on foreign funding may continue to decline in parallel with the private sector's net saving position.

**The tight non-price credit conditions hinder corporate lending considerably, and thus slow down economic recovery**

Domestic corporate loans declined by 8.4 per cent in 2009. Slack demand for loans caused by the recession played a significant role in the stronger than expected decline in corporate lending. However, in addition to demand factors, supply constraints also hindered lending. In view of the uncertain growth prospects and loan losses, which are expected to decline only slowly, banks' risk-taking willingness is expected to remain low until economic recovery strengthens. This contributes greatly to the persistence of tight non-price credit conditions; therefore, banks lend only to clients with better creditworthiness than in the past. Consequently, a substantial increase in corporate loans is only expected from 2011 on.

**The decline in corporate lending may be reduced by risk sharing**

The persistence of the corporate lending's supply constraints may slow the recovery in the economy, which affects the developments in corporations' solvency, and thus may result in a further deterioration in banks' portfolios. The financing conditions of micro, small and medium enterprises can be made more advantageous by taking over part of banks' risks. Fiscal policy can intervene efficiently by further improving of the state guarantee conditions and loan extension with interest subsidies.

**Tight household credit conditions help reduce of risks of over-indebtedness**

The volume of loans to households declined by 1.2 per cent in 2009. In the case of foreign currency mortgage loans, it was mainly price conditions which were tightened; particularly due to the shift from Swiss franc to euro lending. Non-price conditions tightened to a small extent as payment-to-income requirements became higher and the loan-to-value ratio dropped. The decline in Swiss franc denominated lending and in lending with excessively loose conditions reduces the risks in the financial system. An upswing in lending to households is expected with an improvement in labour market developments starting from 2011.

**Forint lending to households may gain ground within new loans**

Within mortgage loans, which constitute a large portion in lending to households, foreign currency loans continue to play a determining role. At the same time, with the appearance of forint loans that are much lower priced than earlier, the share of forint-denominated loans may increase considerably within new lending in the near future. However, in the case of existing loans, the decline in the proportion of foreign currency loans may be much slower, as the difference between interest rates on outstanding foreign currency loans and on newly extended forint loans continues to be significant, and the remaining maturity of the contracts is 13 years on average.

**Promoting a sound structure of lending to households in terms of denomination and credit conditions is a key issue**

The government decree on prudent lending adopted at the initiative of the MNB may strengthen financial stability by preventing excessive easing of credit conditions and excessive foreign currency indebtedness of households. Forint denominated mortgage lending is enhanced by the programme aiming at the development of the mortgage bond market, as a first element of which the MNB buys forint mortgage bonds in the primary and secondary markets. The Bank also initiated a study of widening the scope of potential mortgage bond issuers, which lengthen the maturity of bank funding, and strengthen the functioning of the market by increasing issuance volumes. The initiative regarding the development of mortgage loan products is aimed at making these products more transparent and at enhancing the interest rate channel of monetary policy transmission.

**The domestic financial system has ample liquidity, but long-term liabilities continue to be tight and expensive**

Key domestic financial markets stabilised gradually starting from the spring of 2009. The FX swap market returned to normal, while a slower correction was observed in the spot foreign currency and government securities markets, and the liquidity of the uncovered overnight interbank market recovered only partially. Not only market but bank funding liquidity improved as well, thanks to the MNB's liquidity increasing measures, parent banks' financing commitment, the increase in the foreign currency financing of the government debt and changes in the banking sector's lending-depositing activity.

**Deterioration in loan portfolio quality is significant, but more moderate than expected**

Due to the recession, the quality of both the corporate and the household loan portfolio deteriorated notably, albeit to a lesser extent than previously expected. The ratio of non-performing bank loans increased to 10 per cent in the case of companies and to 8 per cent in the case of households by end-2009. In parallel with this, the ratio of loan losses for both corporate and household loans jumped from 1 per cent in 2008 to around 2.5 per cent by end-2009, which is only slightly lower than our forecast. The portfolio of financial enterprises deteriorated much faster than that of banks: the ratio of non-performing loans increased from 5 per cent to above 11 per cent, while the loan loss rate rose from 1.5 per cent to nearly 4.5 per cent in 2009.

**Household loan portfolio quality may improve more slowly than the corporate loan portfolio**

For 2010 H2 we already expect slight growth in the Hungarian economy. Accordingly, the loan loss rate of corporate loans may peak in 2010 H1, before starting to decline. The increase in the unemployment rate may slow down in early 2010, growing only slightly from the middle of the year, and the decline in real income may also decelerate. Nevertheless, due to substantial loan restructuring, the quality of the household loan portfolio can improve only slowly, and we expect the loan loss rate to decline only moderately from 2010 H2 on.

**Restructuring of loans contributes to the restoration of clients' solvency only in the case of a temporary economic recession**

By restructuring loans and temporarily reducing debt burdens banks are able to improve clients' solvency and reduce loan losses. After the grace period, however, the debt burden increases significantly again, and may even exceed the levels that were typical before the restructuring. A debtor can pay this burden only if his income position improves. Accordingly, restructuring reduces the pressure on banks' profits only in a temporary recession. However, in the event of a less benign scenario than the macroeconomic baseline path, i.e. a protracted decline or permanently low economic growth, the favourable effects of restructuring will not materialise.

**Despite high loan losses, Hungarian banks' profitability is considerable**

The banking sector's pre-tax profit amounted to HUF 306 billion in 2009, up 5 per cent on 2008, while financial enterprises recorded losses of around HUF 11 billion in 2009. The pre-tax profit of the banking sector, which is much better than our earlier projection, is primarily explained by significant revenues from financial operations. The 1 per cent pre-tax ROA and 13 per cent ROE indicators are almost similar to the values of 2008. The distribution of profitability within the banking sector was asymmetric, the share of banks with low profitability increased. We consider the high revenues from financial operations as a one-off factor. Therefore, in 2010 banks will be able to offset the profit reducing effect of high loan losses only by increasing their lending activity and/or by widening the interest margin. There is already an example for the latter: despite the decline in funding costs banks are keeping the lending interest rates for existing household clients high.

**The banking sector's capital position is adequate**

Banks' capital position is adequate; the capital adequacy ratio increased from 11 per cent at end-2008 to 12.9 per cent at end-2009. Mainly the decline in lending activity, auditing the profit during the year and capital increases by parent banks contributed to this increase. The market share of banks with a lower, 8–10 per cent capital adequacy ratio declined.

**Based on liquidity and credit risk stress tests, banks resilience to shocks is adequate**

The liquidity stress test shows that banks' liquidity reserves are sufficient even in the event of simultaneous occurrence of significant financial market turbulences, deposit withdrawal and an exchange rate shock. As a result of the banking sector's high capital adequacy, in the baseline scenario there is no need for capital increases. In the stress scenario, a protracted economic recession may increase loan losses, and thus the need for a capital injection of HUF 45–50 billion (EUR 170-190 million) could arise which is lower than in the November 2009 stress test.

# **1 Money market and macroeconomic risks**





*In autumn 2009 the global economy reached a turning point, mainly as a result of expansive monetary and fiscal policies, and recovery was felt in almost all developed regions. In the developed countries, the costs of stabilising the financial system and the economy have led to a rapid increase in government debt, exacerbating financing risks and increasing the chances that another confidence crisis will erupt. Despite the turnaround in the global economic cycle, bank lending continues to decline, due in large part to banks' weak ability to lend and low risk tolerance. Accordingly, questions remain as to how durable the global recovery will be.*

*With regard to Hungary's economic growth, persistently weak domestic demand is also an important risk factor, in*

*addition to external demand factors. Domestic demand is largely influenced by the interaction between changes in the private sector's consumption–saving position and banks' balance sheet adjustment. In 2009, the private sector's net financing capacity increased sharply, mainly as a result of the larger-than-expected fall in borrowing. The financial assets of this sector however only increased slightly, compared to previous years.*

*External equilibrium is improving, and external debt as a proportion of GDP is declining. By international standards, however, the level of total debt is still high, and this continues to be the main source of the country's vulnerability.*

# 1.1 Improving global economic outlook, risks in developed countries' fiscal policies and in the functioning of the credit channel

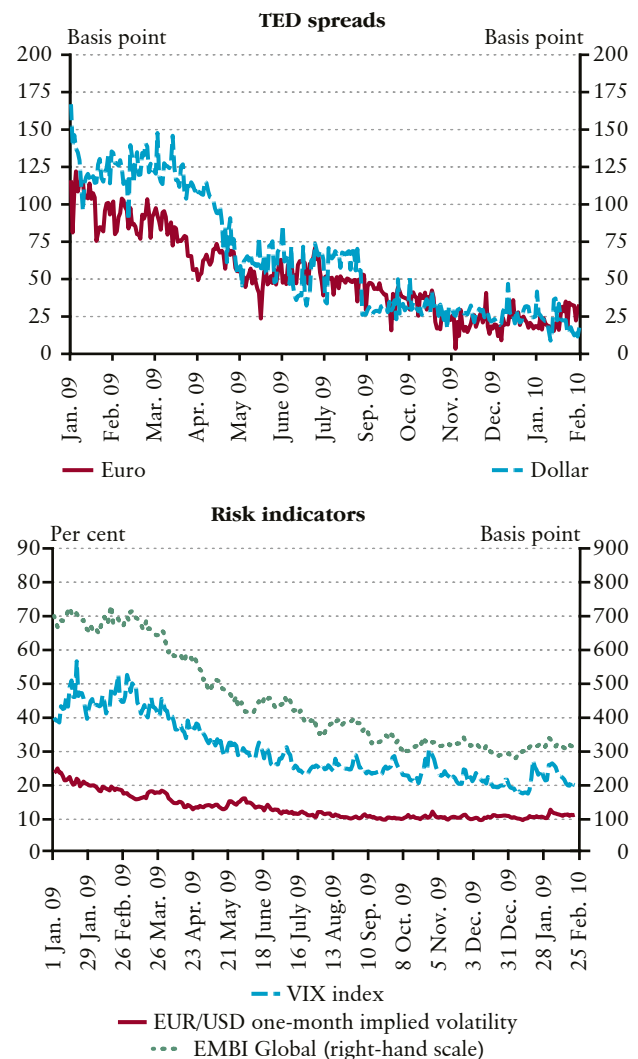
Since 2009 Q2, developed money markets have been marked by favourable liquidity conditions. A turning point was also observed in real economic developments in 2009 Q3. It was mainly central bank and government measures that resulted in these positive trends, and withdrawal of these measures may lead to a halt in the consolidation of the financial market and in economic growth.

The government debt and related financing risk in some peripheral euro area Member Countries increased significantly. In view of the numerous channels of contagion, escalation of the fiscal problems of some Member Countries to affect the entire euro area has considerably increased the chances a new confidence crisis emerging. Another important problem facing the euro area is persistently weak lending activity, resulting from the high loan losses of banks. Deterioration of the banking sector's loan portfolio and the resulting deterioration of its profitability may have a sustained negative impact on the ability to lend. The banks' low willingness to take risks and mounting external expectations regarding capital and liquidity needs also point to deleveraging. Disorders in the credit channel hinder the occurrence of a sustained economic recovery.

## 1.1.1 GLOBAL ECONOMIC PERFORMANCE IS IMPROVING, ALTHOUGH THE UPSWING IS FRAGILE

Favourable liquidity conditions prevailed in the developed financial markets, and this notable improvement is attributable to the supportive effect of central bank and government measures. During the past half year money markets continued to normalise (Chart 1-1). The improving resilience of the financial system in the advanced economies and better economic performance mutually supported one another. The positive developments, however, stemmed from the ample liquidity, which continued to be provided by central banks, the low interest rate environment and government support measures. Although signals from central banks indicate that interest rates may remain at low levels, some cautious tightening of monetary policy has already started. Central banks are gradually phasing out the supply of surplus liquidity, and are withdrawing this liquidity by using passive instruments.

**Chart 1-1**  
Changes in TED spreads and risk indicators



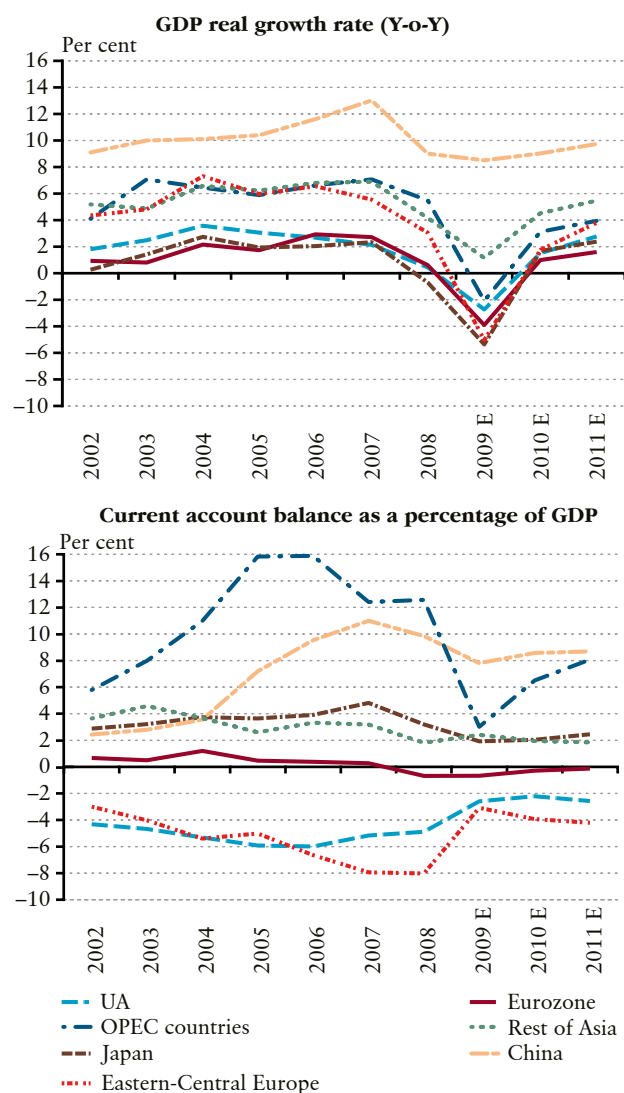
Note: the TED spreads are the difference between the 3-month interbank and overnight-indexed swap (OIS) interest rates.

Source: Reuters.

**The economic upturn has been felt in almost all developed regions, but its durability remains questionable.** As a result of the economic policy incentives international economic activity reached a turning point in mid-2009, and a recovery from the recession started. In the third quarter growth was recorded not only in the US economy, but also in the euro area and Japan as well (Chart 1-2). Expectations related to the performance of



**Chart 1-2**  
**Economic growth and global imbalances**



Note: IMF WEO forecast.

Source: IMF.

the global economy improved markedly in the past quarter, as reflected by the more optimistic forecast of major international institutions (Table 1-1). At the same time, weak labour market developments and subdued lending activity continue to represent a serious risk factor in the developed economies. In terms of the sustainability of growth, caution is also warranted by the fact that some of the benign developments are related to temporary factors, i.e. stronger inventory dynamics and economic stimulus of the private sector.

### 1.1.2 FISCAL PROBLEMS AND DISORDERS IN THE BANK CREDIT CHANNEL REPRESENT THE MAIN RISK IN EUROPE

The costs of stabilising the financial system and the economy have led to a rapid increase in government debt in Europe, exacerbating financing risks and increasing the chances of another confidence crisis occurring. Due to falling tax revenues and rising social expenditures in the wake of the economic downturn as well as the packages aimed at stimulating the economy and supporting banks, the fiscal position in many developed countries has deteriorated significantly, and the financing risks of their government debt have increased (Chart 1-3). Interest rates are being kept at low levels by central banks and this ensures cheap funding for states, but since the end of 2009 the increase in financing risks has led to a steady rise in CDS spreads (Chart 1-4) and yields on long-term government bonds issued by indebted countries. This can be considered an acute problem in Europe. A confidence crisis may have the strongest negative impact on the most indebted states, but indirectly it may also affect banks with interests in these countries as well as the more vulnerable countries through the contagion effects.<sup>1</sup> A good indication of the direct effect is that rating agencies have already

**Table 1-1**

#### Changes in forecasts for euro-area GDP growth

(annual growth, in per cent)

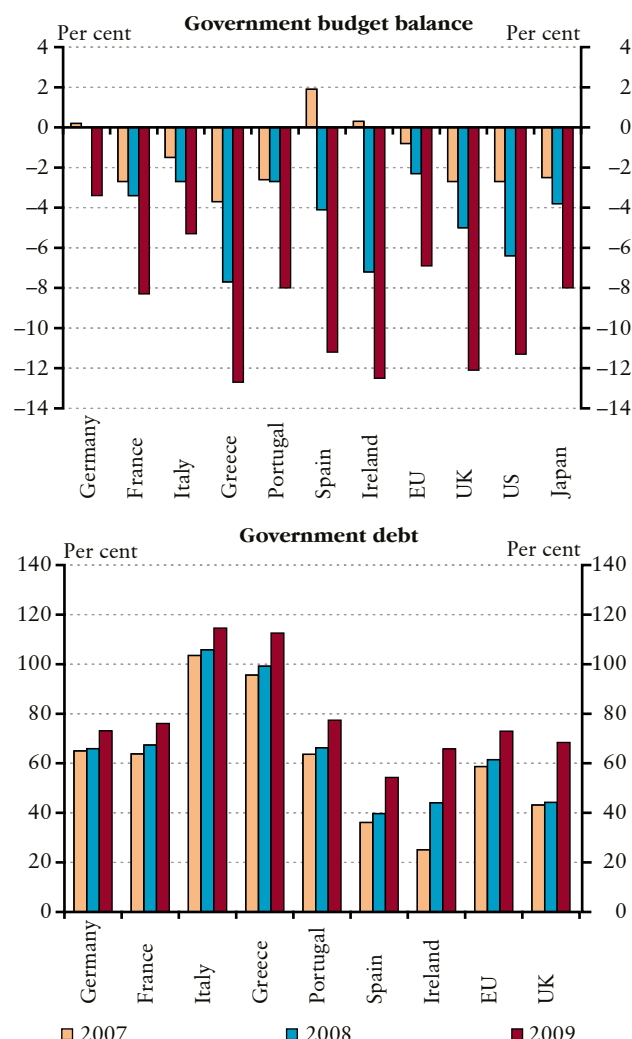
	2010		2011	
	November	February	November	February
MNB	0.4	0.7	1.3	1.3
IMF	0.3	1	1.3	1.6
OECD	0	0.9	-	1.7

Sources: IMF, OECD, IMF.

<sup>1</sup> Possible contagion channels are: revaluation of sovereign risks, exposures of banks and other resident investors to the Greek economy, a global increase in risk premia and costs of funds, the exposure of Greek banks in other countries, and concerns about European integration and depreciation of the euro.

**Chart 1-3**

**Budget balances and government debt in developed countries**

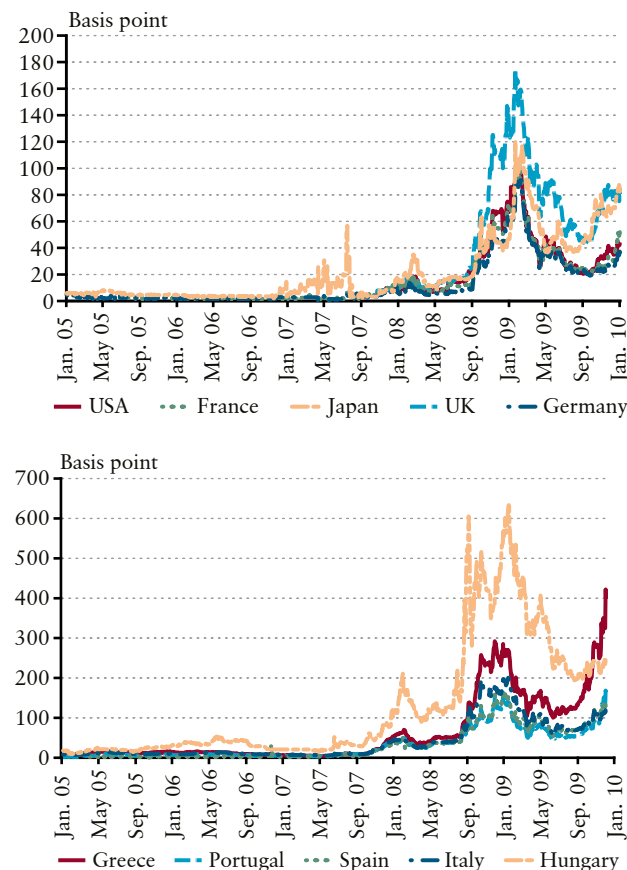


Note: Data calculated using ESA95 methodology, as a percentage of GDP.  
 Source: European Commission, European Economic Forecast, 2009.

downgraded the debt of Greece and Portugal, and are also considering similar steps in relation to Spain. Pressure on Greek government bonds was mitigated by a favourable change in the ECB's collateral framework, as the current minimum credit threshold of BBB- will remain in place beyond the end of 2010, meaning that over the longer term euro-area banks will continue to have access to central bank lending with Greek government bonds as collateral. In addition, following long negotiations, the leaders of the EU and the IMF reached an agreement on how to help Greece. The support package may involve IMF financing, but the majority of funds would come from Europe. It is important to note that the agreement does not involve the extension of a loan right now, but rather represents a support mechanism,

**Chart 1-4**

**5-year CDS spreads of selected countries**



Source: Thomson Datastream.

to be used if a member of the euro area cannot raise sufficient funds on the market. Whilst the agreement itself affected the financial markets favourably, sovereign debt problems are likely to remain a significant concern in the euro area for some time to come. The risks are clearly illustrated by the fact that, despite the more positive sentiment in the wake of the agreement, Greece was only able to borrow on the market at unfavourable conditions: 7-year and 12-year Greek bond issuances were characterised by relatively weak demand and quite high spreads.

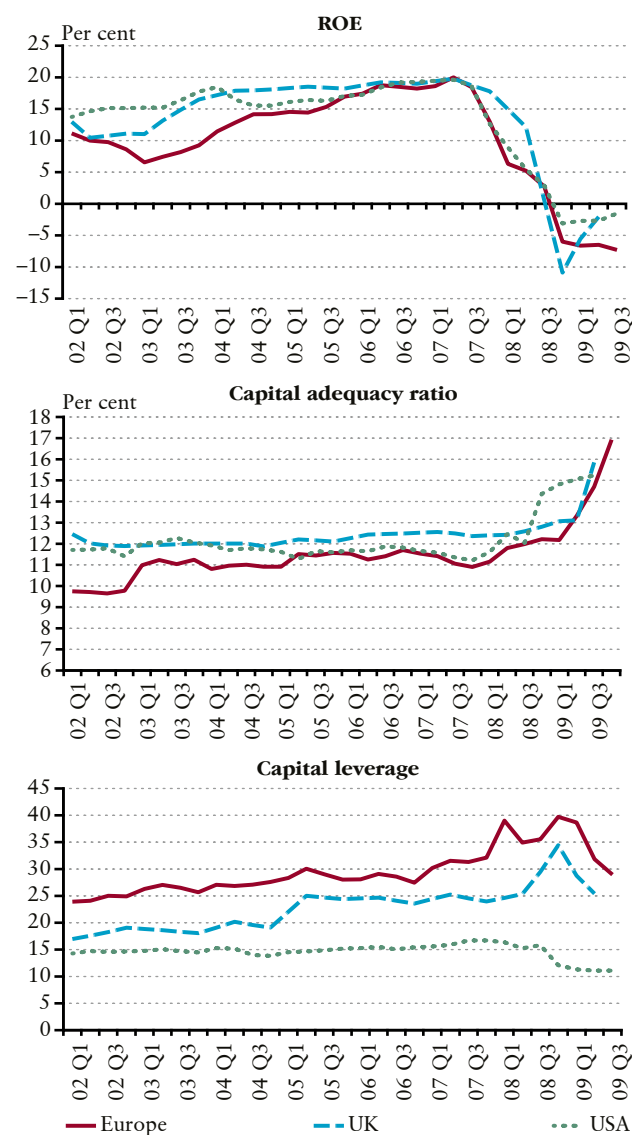
**Rising debt in developed countries may hinder recovery from the crisis over longer term as well.** Although solving the problem of Greece can be considered as the most urgent issue over the short run, the increase in government debt of other developed countries also raises sustainability problems over the longer term. Increased government bond issuance may lead to growth in yields, which may trigger a debt spiral in countries where the level of government indebtedness is already higher. Private sector financing may also be crowded out or hindered by increasing supply of government securities in the coming 2–3 years.

**The deterioration of loan portfolios in developed country banking sectors may have a sustained negative impact on banks' ability to lend, therefore deleveraging process continues further.**

Provisioning by large US and euro-area banks increased significantly in 2009, while their operations have become loss-making (Chart 1-5). Starting from 2009 H2, however, banks' losses started to decline due to the fall in financing costs and the rising slope of the yield curve. The deterioration in the loan portfolio is expected to reduce banks' profits and capital in 2010 as well.<sup>2,3</sup> Although large banks continue to produce losses, their capital adequacy is improving (Chart 1-5). In the period under review, this trend was supported by parting with risky assets, reducing balance sheet totals and increasing capital. At the same time, caution is warranted by the fact that although capital adequacy is improving at the sector level, major differences are observed in profitability, leverage and capital adequacy at the level of individual banks. In terms of ability to lend, there are also risks related to the withdrawal of central banks' liquidity-increasing measures and government bank guarantees, as well as the higher capital and liquidity requirements envisaged in regulatory plans. In lending decisions, an increasingly important role is played by the development of risk appetite, which is related to expectations regarding economic growth and changes in loan portfolio quality.

**Both corporations and households continue to face tight bank credit conditions in the United States and the euro area.** Total loans to companies are steadily declining, while lending to households is nearly stagnating in the USA and the euro area. Although nominal interest rates on loans are declining gradually, the extent of this decline is limited by the fact that banks are charging their customers higher and higher credit risk premiums. Moreover, banks in the USA and the euro area are still tightening their non-price credit conditions, albeit at a slower pace (Chart 1-6). For small enterprises and households, it is difficult to substitute bank financing. In the case of large companies present on or entering the capital market, however, the weight of non-bank financial intermediation is increasing, as the financing costs are lower than for bank financing (Chart 1-6). This increase in corporate bond issuance is beneficial for banks over the short run, as the related transaction fees add to the profits, but over the longer term the spread of non-bank financial intermediation may result in a permanent decline in income.

**Chart 1-5** Changes in return on equity, capital adequacy and leverage ratios in the banking sector of the developed countries



Note: averages (weighted by balance sheet total) calculated from the indicators of the 6 largest banks in the United Kingdom, the 15 largest banks in the Europe and the 20 largest banks in the USA. Leverage = balance sheet total / equity. Capital adequacy ratio = available capital / risk-weighted balance sheet total. The data is unconsolidated.

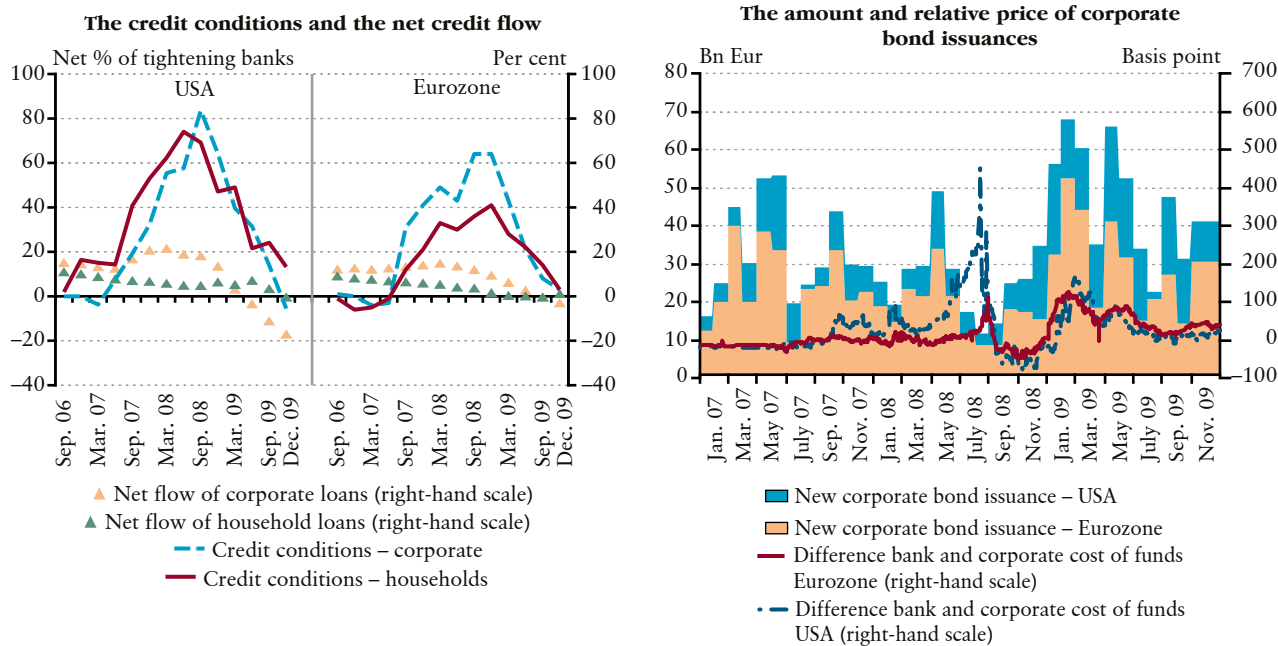
Source: Bloomberg.

<sup>2</sup> Source: IMF Global Financial Stability Report; October 2009; [www.imf.org/external/pubs/ft/gfsr/2009/02/](http://www.imf.org/external/pubs/ft/gfsr/2009/02/).

<sup>3</sup> Source: ECB Financial Stability Report December 2009; [www.ecb.int/pub/pdf/other/financialstabilityreview200912en.pdf](http://www.ecb.int/pub/pdf/other/financialstabilityreview200912en.pdf).

**Chart 1-6**

**Lending and corporate bond issuance in the USA and the euro area**



Sources: ECB, FED, Bloomberg.

## 1.2 Domestic economic outlook and external equilibrium are improving, but high external debt still causes vulnerability

The risk assessment of Central Eastern European countries and developments in their asset prices has mainly followed the trends in international investor sentiment. Due to the favourable developments in equilibrium, the region's sensitivity to negative news has declined. As a result of the substantial fiscal adjustment and the improving external equilibrium, sentiment on Hungary is gradually improving, but despite stable trends in asset prices, there are numerous risks to domestic market developments. Important risk factors include a possible interruption of the European upswing, contagion effects if Greece's problems become worse, possible further significant weakening of the euro and the pursuit of a strict fiscal policy.

In 2009 H2, the improvement in external demand also had a favourable effect on the performance of domestic sectors producing for export. Due to the substantial decline in domestic consumption and investment demand, however, this was only able to mitigate the fall in GDP. Over the short run, we expect to see a slow, gradual increase in output. According to the February 2010 forecast of the Magyar Nemzeti Bank, output may decline slightly in 2010, with a significant increase only taking place in 2011. However, the macroeconomic baseline scenario is surrounded by many downside risks, which are mainly related to less favourable than expected developments in external demand.

The divergent trends in domestic and external demand resulted in a strong adjustment of Hungary's external position last year. In line with the improvement in external equilibrium, Hungary's outstanding debt is declining gradually, but its level continues to be high in regional comparison. The high rollover risk of the external financing of the state and the banking sector continues to make Hungary vulnerable to external shocks.

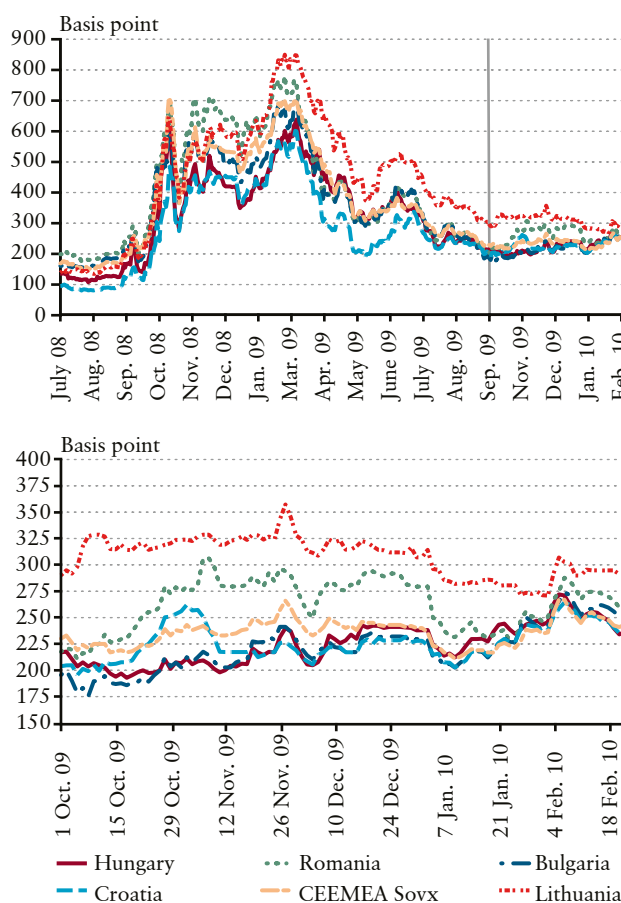
### 1.2.1 INVESTORS' SENTIMENT ON HUNGARY IMPROVED COMPARED TO OTHER COUNTRIES

**International investor sentiment has played decisive role in the developments of Central Eastern European asset prices, while at the same time, the relative risk assessment of the region improved.** During the past half year, the trends on the region's financial markets, including

the Hungarian financial markets, were essentially determined by international developments. Accordingly, fluctuations in global risk appetite were reflected in regional market indicators as well: the favourable international environment entailed a decline in risk premia and an increase in equity prices and foreign-exchange rates, while occasional negative news and investors' worries stopped or reversed the increase. At the same time, compared to other developed and developing countries, the Central Eastern European region was less affected by unfavourable news, and the extent of fluctuations was smaller than that

Chart 1-7

#### 5-year CDS spreads of selected countries of the region



Note: The CEEMEA SovX is a composite index calculated from the 15 most liquid sovereign CDS spreads of the emerging Central Eastern European, Middle East and African region.

Source: Thomson Reuters.

experienced in the countries that were directly affected. One possible underlying reason may have been that although the fiscal position also deteriorated in most countries in this region, the magnitude of this fiscal deterioration was less pronounced than in the developed countries and thus the relative assessment tended to shift in the favourable direction. Stronger differentiation was observed between the periphery of the euro area and the Central East European region on the part of investors. At the same time, differentiation within the region on the part of investors weakened, which is also well illustrated by the narrowing differences between CDS spreads (Chart 1-7). The improvement in risk assessment was also reflected by the successful sovereign eurobond issues and favourable changes in credit ratings (Box 1-1).

**Developments in Hungarian financial markets moved in line with regional trends, while the sensitivity of domestic asset prices to market risks declined.** Investors' attitude towards Hungary is gradually improving, mainly due to the large-scale fiscal adjustment and the significant improvement in external balance. The declining sensitivity of domestic asset prices to market risks represents a significant change compared to earlier trends. In addition to the fiscal adjustment and improving external

equilibrium, this was also because the Hungarian economy was only indirectly affected by the unfavourable international developments. Showing relative stability, the exchange rate of the forint remained in the range of EUR/HUF 260–280 which has been typical since the summer of 2009. Substantial monetary easing took place in the central bank base rate, which declined by a total of 400 basis points from January 2009 to March 2010. Individual rate cuts, however, were limited to 25 basis points from December on. For most of this period, the five-year Hungarian CDS spread fluctuated between 200 and 250 basis points.

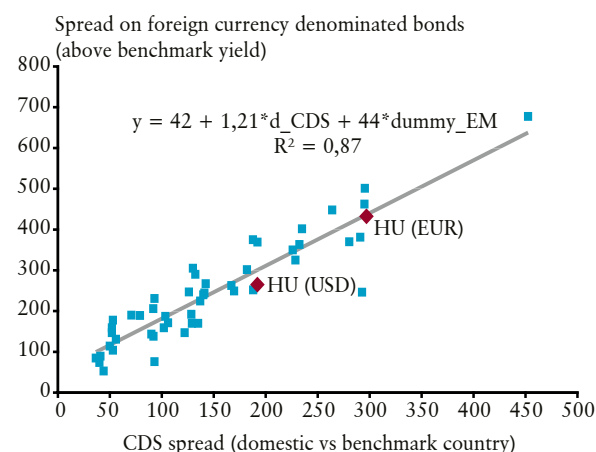
**In view of the country's high vulnerability, the domestic market may react keenly to international financial market turbulences.** Although in market analyses the relative and absolute improvements in balance indicators (i.e. in the fiscal deficit and the current account) continue to be positive factors in Hungary's risk assessment, all this means only limited protection in terms of vulnerability. External and government debt continue to be high, developments in economic activity are weak compared to other countries of the region, and uncertainty related to economic policy an increasing weight in investors' assessment.

**Box 1-1: Foreign-exchange bond issues in the region and key credit rating decisions since October 2009**

Driven by the mounting financing requirements stemming from swelling budget deficits and facilitated by investors' sustained favourable opinion on emerging markets, the intensive sovereign bond issuance activity that started in the spring of 2009 has continued in recent months. In the region in a wider sense, since October 2009, the Czech Republic, Croatia, Poland, Lithuania, Slovakia, Slovenia and Turkey have also successfully issued bonds on the international capital markets (Table 1-2), in addition to Hungary.

Overall, the issues were characterised by favourable trends, as reflected by high demand and issue volumes and the declining yield premia and increasing maturities. Lithuania carried out its largest foreign-exchange bond issues ever (USD 1.5 and 2 billion), and Croatia's borrowing of USD 1.5 billion was also unprecedented. In terms of both its maturity and size (EUR 3 billion) Poland's fifteen-year eurobond issue is a four-year record.

**Chart 1-8 Relationship between the CDS spread and the foreign-exchange bond issuing premium**



Sources: Bloomberg, Thomson Reuters.



**Table 1-2****Foreign-exchange bond issues in the region***(October 2009–February 2010)*

Issuer	Date	Maturity date	Currency	Amount (bn)	Coupon	Spread vs benchmark government securities (bp)	CDS (domestic)	CDS (benchmark-country)	CDS spread
Lithuania	07/10/2009	15/01/2015	USD	1.5	6.75	462.5	318	23	295
Poland	08/10/2009	15/10/2019	EUR	0.5	4.675	138	113	21	92
Czech Rep.	21/10/2009	23/11/2016	CHF	0.5	2.875	104	73	20	53
Croatia	29/10/2009	05/11/2019	USD	1.5	6.75	350	250	24	226
Poland	06/11/2009	13/11/2012	JPY	23.3	1.92	147	121	69	52
Poland	06/11/2009	13/11/2014	JPY	21.5	2.34	159	121	69	52
Slovakia	14/12/2009	04/03/2013	EUR	0.105	3.5	114	72	22	50
Turkey	05/01/2010	30/05/2040	USD	2	6.75	224.7	173	36	137
Poland	11/01/2010	20/01/2025	EUR	3	5.25	143	116	26	90
Slovenia	18/01/2010	26/01/2020	EUR	1.5	4.125	89.3	72	31	41
Hungary	26/01/2010	29/01/2020	USD	2	6.25	265	234	42	192
Lithuania	04/02/2010	11/02/2020	USD	2	7.375	401.7	292	57	235

*Sources: Bloomberg, Thomson Reuters.*

In January 2010, Hungary issued foreign-exchange bonds with a value of USD 2 billion marked by high demand and relatively narrow pricing. There was outstanding interest for the new 10-year USD-denominated reference bond: offers were received in a value of USD 7 billion from more than 250, mostly high-quality, investors. With the issuance, the debt manager agency fulfilled the foreign-exchange borrowing plans for the whole year, in the amount of EUR 1.5 billion. The bond was priced at 265 basis points above the 10-year USD benchmark yield. Compared to the EUR-bond issued last summer, this issue had a significantly more favourable yield premium.

The yield spread continues to exceed the differences between the CDS spreads of the issuing country and the reference country. Moreover, emerging market sovereign issuers have to pay higher

spreads compared with euro-area countries with the same risk, i.e. a similar CDS spread. According to our calculations,<sup>4</sup> the yield spreads of international bond issues since the Lehman bankruptcy can be described by the following factors: a constant, a risk-dependent- and an emerging market dummy-component.

$$\text{Spread}_{\text{above reference government security}} = 42 \text{ bp} + 1,21 * (\text{CDS spread}_{\text{issuer}} - \text{CDS spread}_{\text{reference country}}) + 44 * \text{dummy(EM)}$$

Based on the relation observed, the yield premium of the Hungarian dollar bond issue can be assessed as favourable (Chart 1-8).

The improving risk assessment of the Central East European region was clearly reflected in credit rating agencies' evaluations as well

<sup>4</sup> 50 foreign-exchange bond issues of 17 countries were used for the calculation. In addition to international issues of the countries of the Central East European region (Czech Republic, Croatia, Poland, Lithuania, Latvia, Hungary, Romania, Slovakia and Slovenia), those of other emerging markets (Brazil, South Africa, Israel and Turkey) as well as peripheral euro area countries (Greece, Ireland, Portugal and Spain) were also taken into account. For details of the estimate see: Norbert Kiss M. and István Mák: *Developments in sovereign bond issuance in the Central and East European region after the Lehman collapse*, MNB Bulletin, December 2009.

**Table 1-3****Credit rating events related to countries of the region**

Date	Agency	Country	Event	Direction	Rating
02/10/2009	S&P	Hungary	Outlook change	Improvement	(BBB-) Negative to stabile
01/12/2009	S&P	Bulgaria	Outlook change	Improvement	(BBB) Negative to stabile
03/12/2009	Fitch	Turkey	Credit rating change	Improvement	BB- to BB+
08/06/2010	Moody's	Turkey	Credit rating change	Improvement	Ba3 to Ba2
21/06/2010	Moody's	Bulgaria	Outlook change	Improvement	(Baa3) Stabile to positive
25/01/2010	Fitch	Russia	Outlook change	Improvement	(BBB) Negative to stabile
02/02/2010	Fitch	Romania	Outlook change	Improvement	(BB+) Negative to stabile
03/02/2010	S&P	Lithuania	Outlook change	Improvement	(BBB) Negative to stabile
05/02/2010	Fitch	Estonia	Outlook change	Improvement	(BBB+) Negative to stabile
11/02/2010	S&P	Estonia	Outlook change	Improvement	(A-) Negative to stabile
12/02/2010	S&P	Latvia	Outlook change	Improvement	(BB) Negative to stabile
19/02/2010	S&P	Turkey	Credit rating change	Improvement	BB- to BB
08/03/2010	Fitch	Lithuania	Outlook change	Improvement	(BBB) Negative to stabile
10/03/2010	S&P	Romania	Outlook change	Improvement	(BB+) Negative to stabile
30/03/2010	Fitch	Estonia	Watch list	+	BBB+

Sources: Bloomberg, Thomson Reuters.

(Table 1-3). Since October 2009 favourable credit rating actions have taken place with regard to several countries in the region. The long-term foreign exchange debt outlook of Bulgaria, Russia, Romania and the Baltic states was upgraded, while the debt rating of Turkey was also improved by all three large agencies (by two notches in the case of Fitch). While maintaining the BBB- rating,

Hungary's rating outlook was upgraded from negative to stable by S&P at the beginning of October 2009 (Hungary has the worst, BBB-, rating from S&P, at the bottom of the investment category. Compared with S&P, Hungary's foreign rating is one notches higher at Fitch (BBB) and two notches higher at Moody's (Baa1), respectively.

## 1.2.2 SUBSTANTIAL ECONOMIC GROWTH IS EXPECTED ONLY FOR 2011, HIGH EXTERNAL DEBT WILL ONLY DECLINE GRADUALLY

**As a consequence of persistently weak domestic demand, Hungary's economic recovery is only following the developed and regional countries with a delay.** Since the middle of last year, contraction in domestic output has moderated, while increasingly notable divergence between the external and domestic demand components was observed in the structure of growth. Due to favourable external economic activity, export sales gradually increased from Q2 on, while the general downturn in the main components of domestic demand continued. The consumption and saving behaviour of households, which had accumulated debt rapidly in the pre-crisis years, has changed considerably since the crisis erupted. The sector's consumption expenditures have fallen markedly, while financial savings – which had previously declined to historical lows – already started increasing again last year.

In addition to the generally deteriorating income position, the intensification of precautionary considerations in a more uncertain economic environment may also be behind the strong decline in consumption. Gross fixed capital formation was characterised by increasingly severe declines in 2009. Corporate and household investment dropped off significantly, while infrastructure investment related to the public sector fell only to a lesser extent. As a response to the crisis, in early 2009 companies' capacity utilisation declined sharply, while they also reduced their existing inventories. Although corrections were already observed in these developments in the second half of the year, corporate capacity utilisation remains at a historically low level.

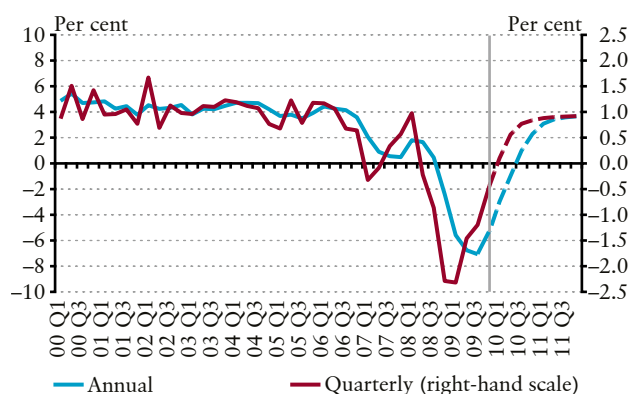
**The deterioration in corporate sector profitability is slowing down.** In 2009 H1, companies' profitability deteriorated considerably, particularly in the manufacturing sector. The corporate sector adapted to the unfavourable macroeconomic environment mainly via labour cost reductions, the extent and timing of which varied from sector to sector. In the first half of the year, a sharp decline



Chart 1-9

## Annual and quarterly changes in GDP

(seasonally adjusted data, per cent)



Note: 2010–2011 MNB forecast.

Source: MNB.

in wage dynamics was experienced in manufacturing, and at the same time the number of employees also fell. In parallel with the upswing in external economic activity, however, this process clearly turned around in the second half of the year, especially in the case of wages, thus the increase in sales was only able to mitigate the extent of the drop in profits in the manufacturing industry. In the services sector, deceleration of wages was characteristic of the whole year, and consequently, the profit situation did not deteriorate any more in Q4. In line with the further improvement in the economic environment and the continuing labour market adjustment, we expect a gradual recovery in corporate profitability in 2010, although profits are expected to remain below the pre-crisis levels over the next two years.

**Households' income position deteriorated considerably in 2009.** The intensive labour market adjustment experienced

starting from 2008 Q4 was reflected in both a significant fall in the number of employed and a decline in wage dynamics. Unemployment rose to a rate not seen since 1995. On the whole, the government measures that have been introduced also entailed a decline in household income. In the sectors that are important in terms of households' entrepreneurial incomes (real estate, agriculture, trade, construction industry), no favourable shift can be expected over the short run either. During the crisis period, income realised on financial wealth has also declined. Overall household income is expected to rise only from 2011.

**A slow, gradual increase in output is expected over the short run.** Domestic GDP fell by 6.3 per cent in 2009. According to the February forecast of the Magyar Nemzeti Bank, output may decline by another 0.2 per cent in 2010, with a significant increase only taking place in 2011 (Chart 1-9).

**External financing capacity may remain positive.** In parallel with the economic and financing adjustment accompanying the recession, the large current account deficit that was typical of recent years declined rapidly, and in 2009 H2 a substantial surplus was recorded on the current account balance. The dynamic improvement in the balance mainly reflects the decline in domestic demand, with the upswing in export performance also making a contribution in the second half of the year. External financing capacity was also supported by declining income outflows, in which the main role was played by the substantial decline in the profits of foreign-owned companies. In parallel with this, a correction was observed in external costs of funds as well, which had increased earlier. We expect that the resulting high external financing capacity will remain in place during the coming two years

Table 1-4

## External position and net financing capacity of individual sectors

(as a percentage of GDP)

	2003	2004	2005	2006	2007	2008	2009	2010	2011
	Estimated						Forecast		
A. Current account	-8.0	-8.3	-7.2	-7.5	-6.8	-7.2	0.4	-0.4	-0.4
B. Capital account	0.0	0.1	0.7	0.7	0.7	1.0	1.4	2.0	2.4
<b>C Net financing position, "top-down" (=A+B)</b>	<b>-8.0</b>	<b>-8.2</b>	<b>-6.5</b>	<b>-6.8</b>	<b>-6.1</b>	<b>-6.2</b>	<b>1.8</b>	<b>1.6</b>	<b>2.0</b>
I. Public budget*	-8.3	-8.3	-9.4	-9.5	-5.8	-3.8	-4.7	-5.2	-4.5
II. Households	0.1	2.3	4.3	3.3	1.5	1.2	3.3	4.5	4.1
III. Corporations and "error" (=C-I-II)	0.2	-2.2	-1.4	-0.5	-1.8	-3.7	3.2	2.4	2.4

Note: In addition to the fiscal budget, the consolidated general government includes local governments, institutions discharging quasi-fiscal duties (Hungarian State Railways [MÁV] and the Budapest Public Transport Company [BKV]), the MNB and authorities implementing capital projects initiated and controlled by the government and formally implemented under PPP schemes. Stability reserves and reserves payable for interest have not been taken into account in the forecast for the financing requirement of the general government.

Source: MNB.

as well (Table 1-4). Although the recovery from the crisis may lead to a sustained increase in import demand and a deteriorating income balance through the slow growth in corporate profits, increasingly favourable exports and funds from the EU may offset these negative effects on balance.

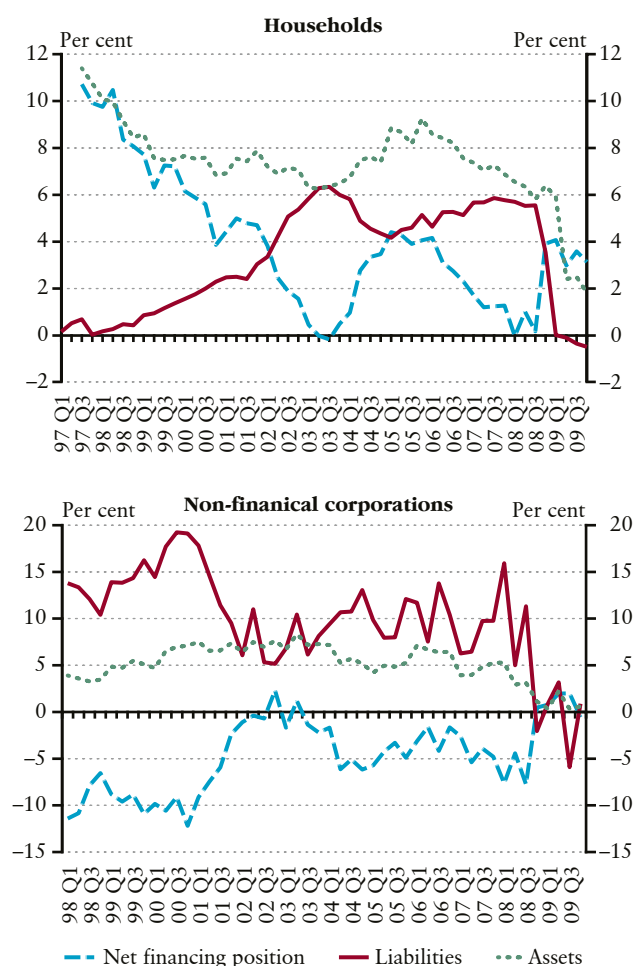
**The balance sheet adjustment of the private sector primarily took place through a substantial decline in borrowing.** The improvement in the external balance was attributable to the sharp increase in the private sector's net savings (Chart 1-10), as households and corporations spent even less on consumption and investment than their declining incomes in 2009 (declines in the rates of consumption and investment). Households' net borrowing

from banks (new borrowing less repayment) fell extremely sharply. In the case of non-bank (mainly leasing) loans, households have become net loan repayers. Following the outbreak of the crisis, within the scope of companies' liabilities, the corporate sector's use of trade credit declined first as a result of the collapse in foreign trade. This was followed by downturns in borrowing from banks and from abroad. The accumulation of households' financial assets was significantly lower compared to the pre-crisis period, which may be related to the decline in employment and the worse than expected decline in income. At the same time, for 2009 as a whole, there was practically no major decline in the accumulation of the assets of corporations. While in 2009 H1 the depletion of previously accumulated inventories and the postponement of investment were reflected in an increase in the sector's savings, corporations' financial receivables already declined in the second half of the year.

**Chart 1-10**

**Net financing capacity of households and non-financial corporations**

(seasonally adjusted values, as a proportion of GDP)



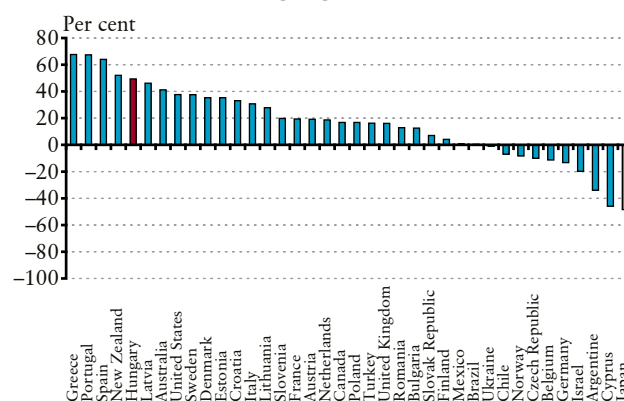
Source: MNB.

**Net external debt declined, although its level remains high in regional comparison.**

The rapid fall in the external financing requirement took place in parallel with significant outflows of debt-type liabilities, which was attributable to a reduction in banks' external debt. Although these outflows of foreign liabilities are related to the recessionary economic environment, vulnerability is reduced by the fact that Hungary's external debt, which had previously shown a rising trend, started to decline from 2009 Q1. In international comparison, however, gross external debt amounting to 98 per cent of GDP at the end of 2009 Q3 and the net external debt of 54 per cent<sup>5</sup> can be still considered high in the region (Chart 1-11).

**Chart 1-11**

**Net external debt as a proportion of GDP, 2008**



Note: Net external debt excluding shareholder loans.

Sources: IFS, Eurostat.

<sup>5</sup> Debt indicators calculated on forint basis, excluding shareholder loans and financial derivatives.

## **2 Risks of the financial intermediary system<sup>6</sup>**

---

<sup>6</sup> The banking sector refers to the banks, branches and specialised credit institutions excluding Eximbank, MFB, KELER and savings cooperatives.



The main risks of the Hungarian financial system are the strong procyclical behaviour of the banking sector in the field of corporate lending, the high amount of households' foreign currency loans, insufficient deposit creation, the declining, but still high loan-to-deposit ratio and high credit risks (Chart 2-1).

In 2009, the fall in lending to corporations was notable in international comparison, in which the tight, non-price credit conditions of banks played a prominent role. Banks' behaviour hinders the economic recovery. Risk sharing between banks and state, i.e. the state guarantee programmes and subsidy scheme can ease supply constraints and efficiently reduce financing costs.

Total loans to households fell only slightly. While demand for loans declined, banks narrowed the credit supply in this segment as well, primarily by tightening interest rate conditions. We consider the correction in non-price credit conditions, which had become too loose in recent years and the significant decline in Swiss franc-denominated lending to be a positive trend, along with the increase in the share of forint-denominated products within new issuance. However, one unfavourable trend is that the share of foreign currency loans within the existing exposure is only declining at a slow rate. In addition to banks' risk aversion, the government decree on prudent lending and the central bank programme also support the creation of a healthier credit structure in terms of denomination and credit conditions.

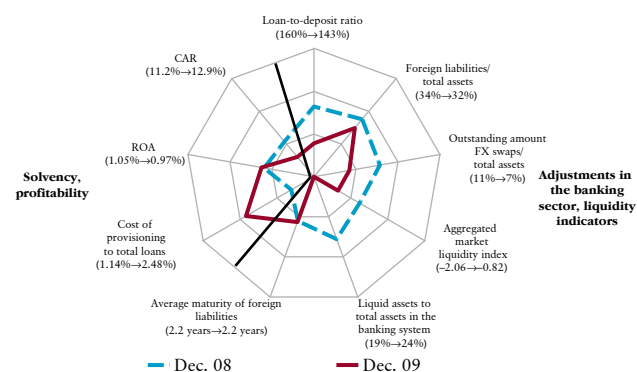
The balance sheet of the banking sector has changed considerably with the improvement in the financing position of the private sector. The loan-to-deposit ratio declined. However, the pace of adjustment decelerated during 2009, possibly as a result of withdrawals of deposits by companies and households' low deposit-taking in part. The domestic

banking sector's loan-to-deposit ratio is still high in international comparison, and accordingly its reliance on foreign funding is still significant. However, further adjustment of the private sector's balance sheet and earlier crisis experiences suggest that the loan-to-deposit ratio will continue to decline.

Mainly owing to one-off factors, the majority of banks were able to cover the increasing loan losses in 2009. Moreover, the banking sector achieved profits exceeding the expectations last year, although their distribution was asymmetric. The sustainability of this favourable profitability is highly uncertain in 2010. Banks' capital position is adequate. Along with banks' balance sheet adjustment, capital increases of parent banks and reinvestment of profits have considerably increased the capital adequacy ratio at the banking sector level. Banks' liquidity and credit risk stress tests show adequate shocks-absorbing capacity.

Chart 2-1

### Changes in main risk indicators between December 2008 and December 2009



Note: Standardised indicators. Measures scaled to 0 and 1 interval between the minimum and maximum between early 2005 and December 2009. In the chart, in the case of individual indicators the points closer to the centre of the chart indicate the lower risk.

Source: MNB.

## 2.1 Significant decline in lending

The corporate loan market deteriorated significantly in 2009 (Chart 2-2). Due to weak domestic absorption, companies' demand for credit is falling. The decline in banks' risk appetite is reflected in further tightening non-price credit conditions. The declining funding costs are already being seen in interest rates on new loans, but this partly reflects that banks are only financing the most creditworthy companies. According to our expectations, corporate loans may only expand again in the second half of the year, with a more significant upswing only expected in 2011. The most suitable tool for stimulating corporate lending activity is partial risk-sharing between the government and the banks in the form of government guarantee and subsidised loan programmes.

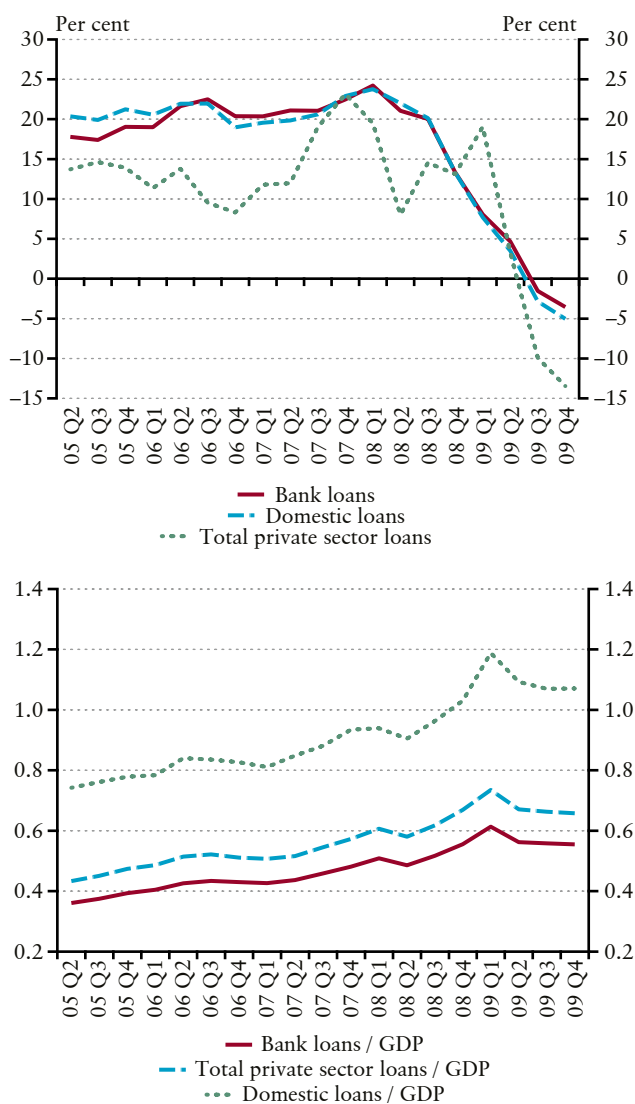
Starting from early 2009 the stock of households' loans also declined, mainly as a result of the drop in loans for vehicle financing. On the one hand, the decline in total loans is attributable to households' falling demand due to precautionary considerations, and on the other hand to the tight pricing (interest rate) conditions on the supply side. The growth outlook for household loans continues to be unfavourable and we only expect to see a substantial recovery in this segment from 2011 on.

The radical change in banks' supply of credit resulted in the correction of excessively loose credit conditions, a decline in Swiss franc-denominated lending and an increase in the share of forint-denominated contracts within new issuance. However, as opposed to new loans, the decline in the share of foreign exchange loans within existing exposures is much slower, as the average remaining maturity of mortgage loans is 13 years. Also, the decrease in the interest rate difference between existing forint and foreign currency loans are less significant.

The Central Bank has made numerous regulatory proposals to promote a healthier structure of lending to households. At the MNB's initiative, the government regulation on prudent lending was adopted. Its primary objective is to prevent excessive easing of credit conditions in the event of an economic upturn and to prevent reacceleration of household's foreign currency lending. In addition, the MNB wishes to support development of the forint-denominated mortgage loan and mortgage bond market. The first step of this programme is the Central Bank's forint-denominated mortgage bond purchasing operation. In addition, the

Chart 2-2

Annual growth rates of the private sector's bank, domestic and total loans and indebtedness as a proportion of GDP



Note: Domestic loans = bank loans + loans of other financial intermediaries. Total private sector loans = domestic loans + foreign loans. Growth rates to be understood as exchange rate adjusted data. Total loans without adjustment for the exchange rate effect and annual nominal GDP were used in the chart on the right.

Source: MNB.

programme aims at making mortgage loan products more transparent and at possible widening the scope of financial institutions entitled to issue mortgage bonds.



## 2.1.1 TIGHT CORPORATE CREDIT CONDITIONS MAY HINDER ECONOMIC RECOVERY

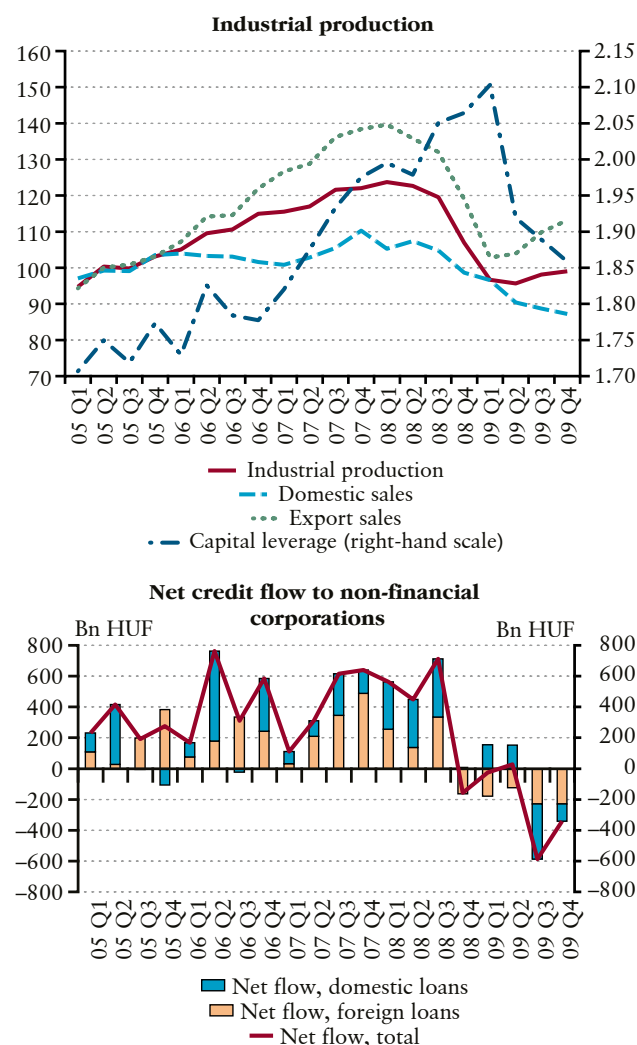
**Corporations are rapidly reducing their leverage.** 2009 was marked by a severe economic recession and deteriorating credit conditions on the whole. The corporate sector reacted to the unfavourable macroeconomic and credit market environment by reducing its total debt. The rise of indebtedness which lasted until the beginning of last year came to an end, and according to the financial accounts, corporate leverage dropped significantly as a result of the decline in outstanding loans. In 2009, total loans of non-financial corporations fell by 11.7 per cent, while domestic loans outstanding declined by 8.4 per cent (Chart 2-3). The magnitude of this decline exceeded our previous expectations. In terms of amount, the largest decline was observed in loans from the domestic banking sector, although in terms of proportion the fall was also very significant in domestic non-bank corporate loans (those extended by domestic financial corporations). Large corporations did not substitute the declining domestic financing with external financing. Following the increase in 2009 H1, the amount borrowed from abroad already fell considerably in Q3 and continued to shrink in Q4.

**Within domestic bank loans, it was mainly short-term loans that declined.** The currency composition of the decline does not show a coherent picture: at the beginning and the end of the year the fall was more typical of forint loans, while in the middle of the year foreign currency loans fell. Within total loans, the decline in short-term loans was greater, because during balance sheet adjustment the fastest way for banks to reduce their corporate exposures is to restrain short-term loans (Chart 2-4). In addition, credit conditions became tighter mainly vis-à-vis the small and medium enterprises sector, where short-term financing is typical.

**Commercial real estate financing is kept up mainly by necessity.** As a result of earlier large-volume developments, the commercial real estate market, and within that the office market in particular, is characterised by excess supply. This situation is reflected by the average rent and utilisation indicator, which was on the decline for almost all of 2009 (Chart 2-5). According to the central bank's survey on bank lending practices, banks clearly consider financing commercial real estate projects riskier than the average corporate portfolio. Therefore, they are refraining from further active lending in this segment. This is shown by the fact that a larger proportion of banks indicated tightening in credit conditions for this segment than for corporate loans. However, project loans cannot decline rapidly, and

Chart 2-3

**Industrial production and non-financial corporations' leverage as well as the quarterly value of net flow of corporate domestic and foreign loans**



Note: For the industrial production volume index the average of 2005 equals 100; seasonally adjusted data. Leverage = total financial liabilities / own funds. The leverage ratio is adjusted for revaluations. Net increase in total loans, seasonally unadjusted and corrected for the exchange rate effect.

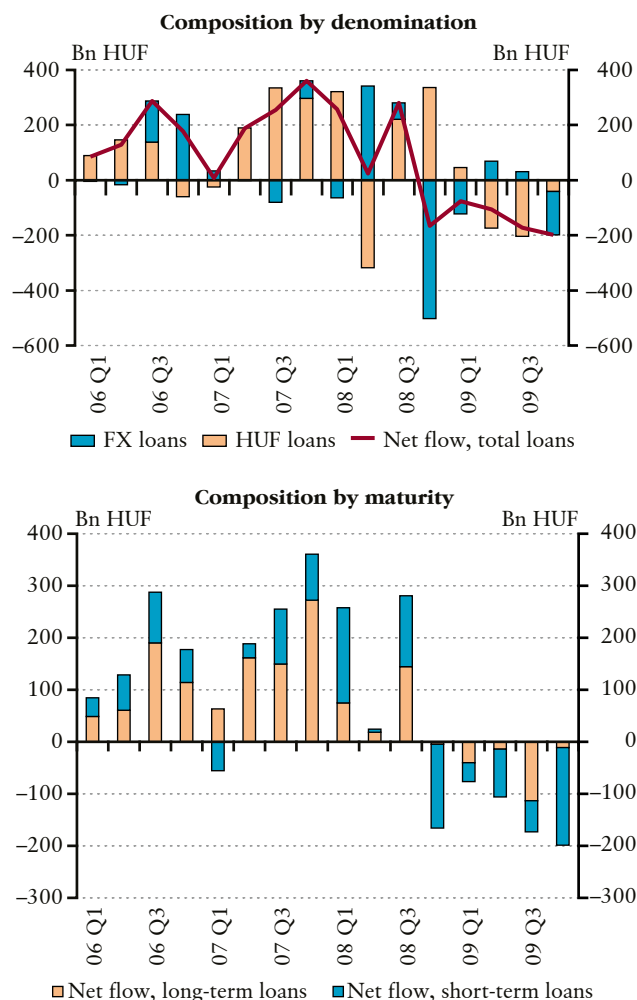
Sources: CSO and MNB.

there is forced lending going on in this sector. Banks cannot retreat from this sector quickly, as by doing so they would significantly deepen the recession on the commercial real estate market, and would thus exacerbate their loan losses. At the same time, the stagnating stock of project loans, and in particular commercial real estate project loans, account for an increasing portion of corporate loans.

**A decline in the outstanding amount of loans was observed in almost all sectors of the economy.** Starting from 2009 H2, export sales showed signs of recovery, while the fall in domestic sales accelerated. Accordingly, in 2009

**Chart 2-4**

**Composition of the net borrowing of corporations from domestic banks**

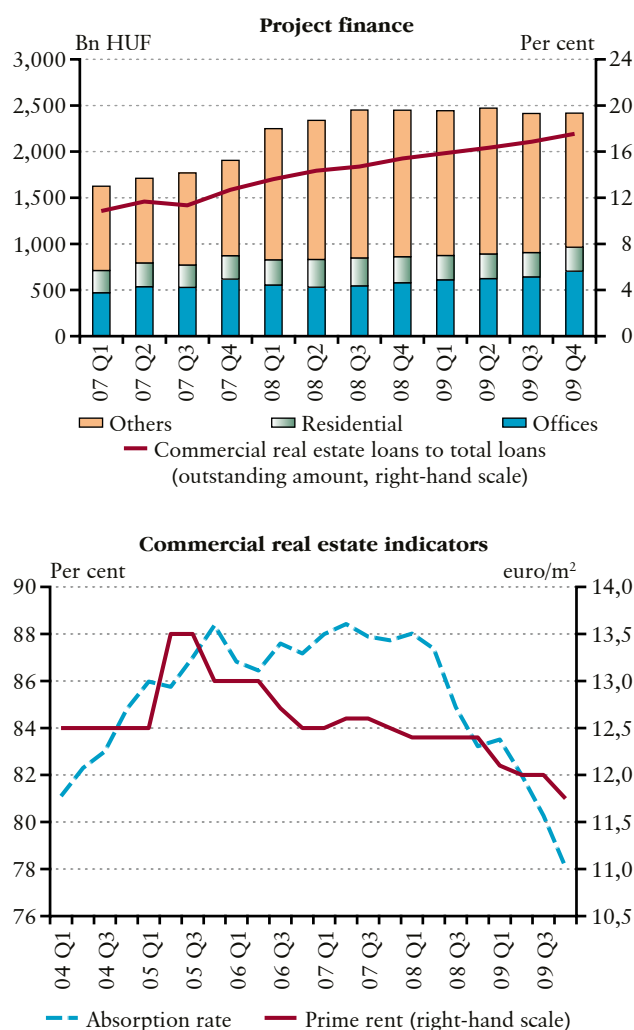


Note: Seasonally unadjusted data. With rolling exchange rate adjustment in the breakdowns by long and short terms and currency.  
Source: MNB.

the decline in domestic bank loans was especially noticeable in the commercial sector producing for the domestic market and in the vehicle repair sector. At the beginning of the year, multinational companies – which account for a significant portion of export sales – mainly financed the expansion in activity through their parent companies, and subsequently from internal sources. Therefore, it is not surprising that there was also no change in the manufacturing loan portfolio. With the slump in tourism, total loans also declined in the accommodation services and catering sector. The very substantial fall in long-term foreign exchange loans indicates that many investments have been postponed in this sector. While the residential and commercial real estate market faces recession, outstanding loans did not decline in the construction or real estate transactions and economic services sectors in 2009, due to the long-term

**Chart 2-5**

**Project loans of the banking sector and average rent and absorption rate of the Budapest office market**



Note: Stock data using the exchange rate of 31 December 2009.  
Sources: CBRE, MNB.

maturity of the loans and the intense workout activity (Chart 2-6).

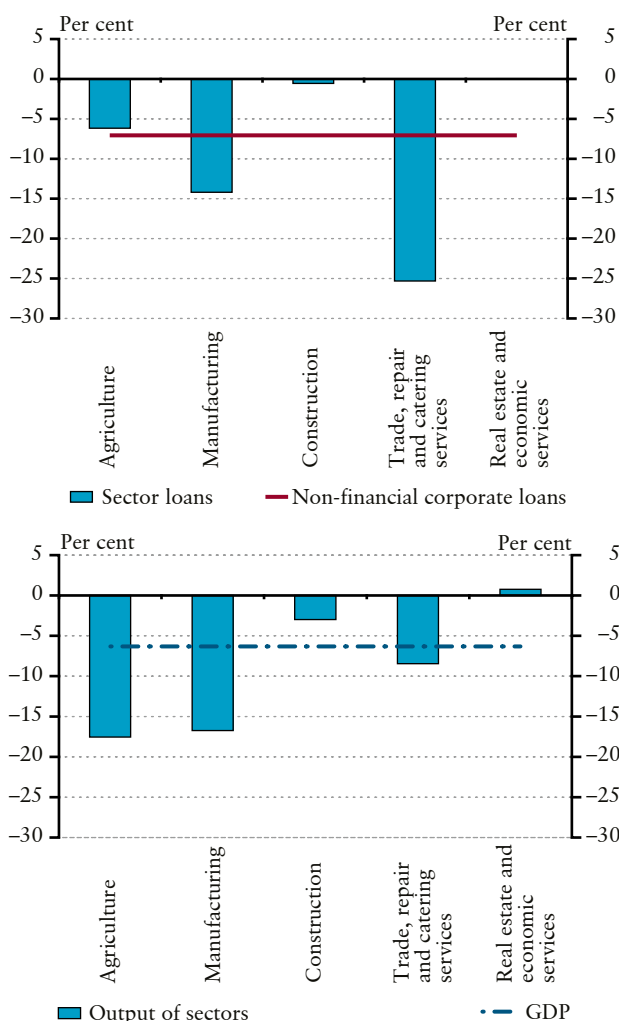
**The decline in loans to the corporate sector is a general phenomenon throughout the region.** The magnitude of the decline in corporate bank lending in the Czech Republic and Latvia was similar to that in Hungary in 2009, while the contraction was even greater in Lithuania (Chart 2-7). In these countries, the drop in corporate lending can be explained by the high degree of openness of the economy as well as the decline in export sales and investment.

**Interest rates on domestic corporate loans are declining. Banks' price factors improved in 2009, i.e.**



**Chart 2-6**

**Annual growth rate of bank loans outstanding by sectors and sectoral output**

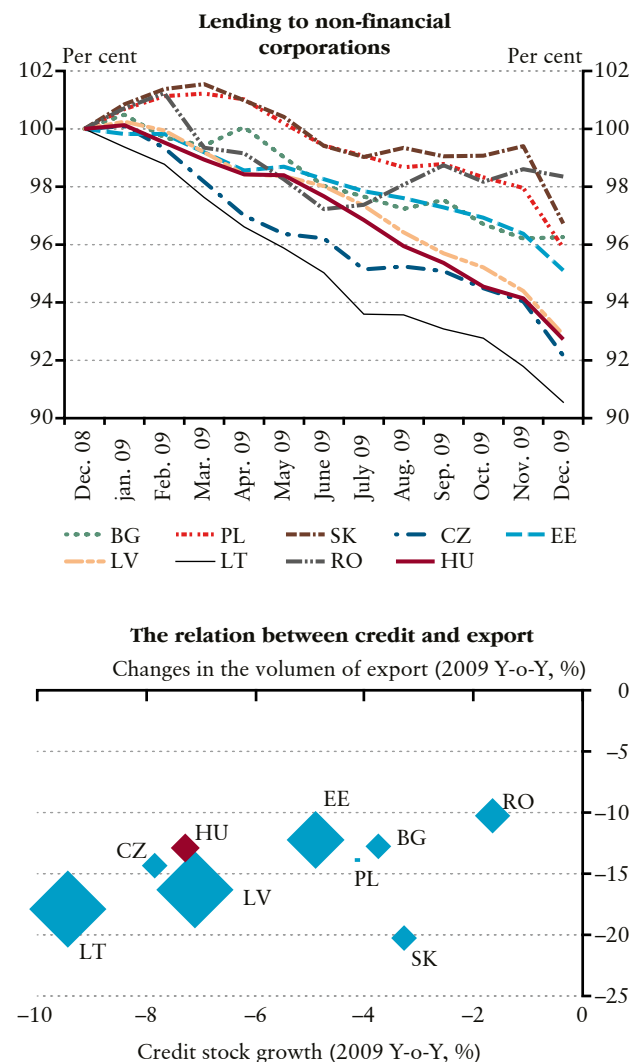


Note: Change in loan volumes is exchange rate adjusted.  
Source: MNB.

**nominal interest rates fell.** Interest rates on new forint- and euro-denominated loans followed the decline in interbank rates. However, the decline was hindered by an increase in credit risk cost and its pricing into interest rates. Interest rate premia of both forint- and euro-denominated loans increased significantly (to 3 percentage points from the 1.5 percentage points before October 2008). The difference between the forint and euro interest rates is still high, at above 5 per cent. At the same time, the availability of euro-denominated loans is limited (Chart 2-8). According

**Chart 2-7**

**Corporate lending in the CEE region (Dec. 2008 = 100 per cent) and the relationship between lending and exports**



Note: Exchange rate adjusted time series in the case of loans. In the bottom chart, the larger rhombuses indicate stronger declines in GDP. Bulgaria (BG), Czech Republic (CZ), Estonia (EE), Latvia (LV), Lithuania (LT), Hungary (HU), Poland (PL), Romania (RO), Slovakia (SK).

Sources: National central banks, Eurostat.

to the MNB's Senior Loan Officer Survey on Bank Lending Practices (February 2010), in view of the significant tightening in non-price conditions, only clients with very good creditworthiness are able to take out euro-denominated loans.

**Table 2-1**

**Contraction in corporate lending in December 2009 for different reference dates**

	BG	PL	SK	CZ	EE	LV	LT	RO	HU
Oct. 2008=100	96.4	96	95.5	91.2	94.1	92.7	90.3	95.4	<b>90.7</b>
Dec. 2008=100	96.3	95.9	96.7	92.2	95.1	92.9	90.6	98.4	<b>92.7</b>

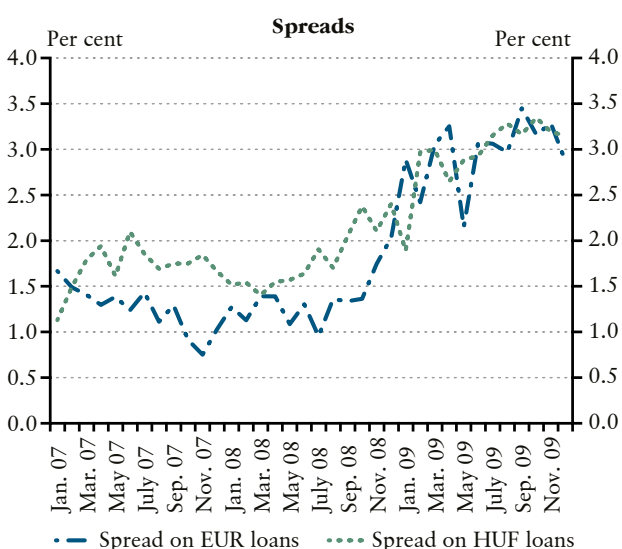
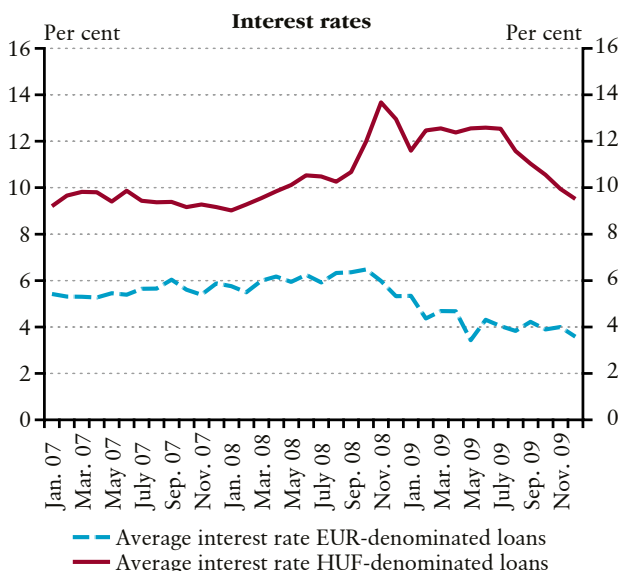
Sources: National central banks, Eurostat.

**The domestic currency corporate loan interest rate in Hungary is one of the highest in the region, while the interest rate on euro-denominated loans is one of the**

**lowest.** The difference in domestic currency credit rates is clearly perceptible between countries which are vulnerable, due to their high reliance on external financing, and less vulnerable countries. In Hungary and Romania, the interest rates on loans granted in domestic currency increased

**Chart 2-8**

**Average interest rates and spreads on new bank loans to corporations**

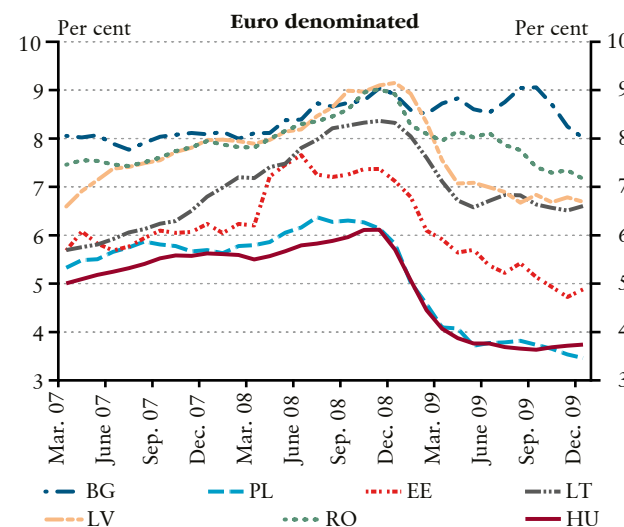
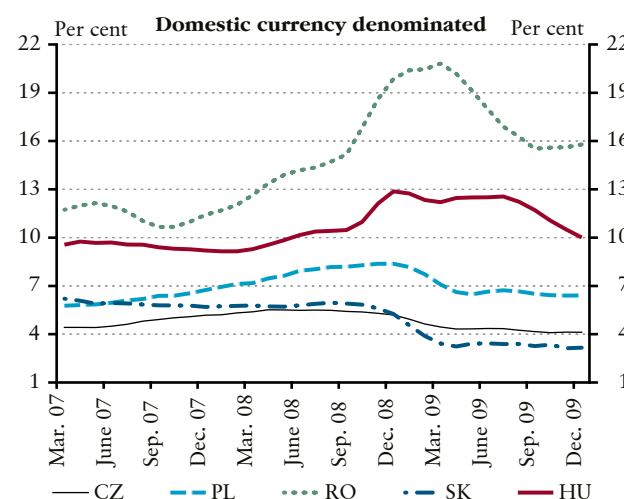


Note: Spreads are calculated as a difference of interest rates and three-month interbank rates.

Sources: CSO and MNB.

**Chart 2-9**

**Interest rates on new corporate loans in the CEE region**



Note: In the case of Slovakia, the domestic currency contains loans denominated in both Slovak koruna and euro.

Sources: National central banks.

markedly in the last quarter of 2008, and despite the gradual decline they continue to exceed the levels of other countries (Chart 2-9). In the case of euro-denominated loans, the highest nominal interest rates and premia are in

the Romanian and Bulgarian banking sectors. These are followed by the Baltic countries, whereas interest rates for corporations and their premia are the lowest in Hungary and Poland.

### Box 2-1: Credit supply constrains

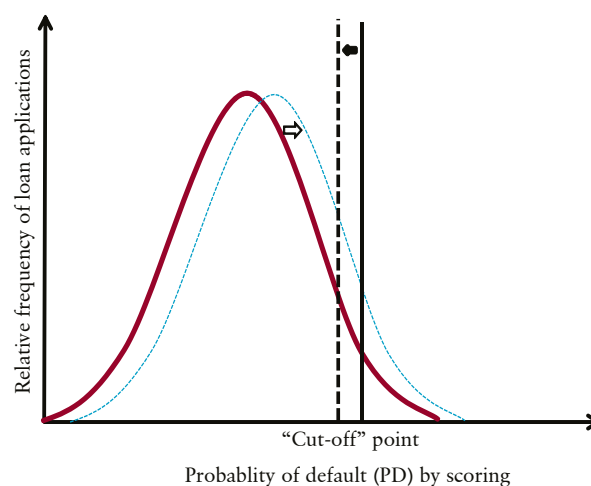
Banks can reduce their credit supply several ways. On the one hand, banks may raise their interest rates to a greater extent than the expected credit risk costs. On the other hand, banks may exclude some riskier clients from potential borrowers, or require more collateral, thus reducing the riskiness of the loan. Of course, banks may also decide to use a combination of these approaches.

Banks tighten basically for two reasons: due to weak ability or capacity to lend and due to a decline in willingness to take risks. Ability to lend means how much credit a bank is able to extend on the basis of its liquidity and capital position. If a bank's capital adequacy ratio is low or its liquidity is stretched, and it cannot raise new capital or funds, its lending capacity is limited. Willingness to take risks means how much credit a bank intends to grant, and what size of risk it is ready to take when selecting the portfolio.

For the corporate sector in particular, banks pay attention to the clients' probability of default (PD), and will accept or refuse a loan application accordingly (Chart 2-10). In a recessionary environment, the distribution of clients according to creditworthiness shifts to the right, the probability of default of loan applicants grows, and thus the expected loss increases. Even if the conditions of evaluating loan applications remain unchanged, the bank will grant loans to fewer applicants. If the bank's willingness to take risks declines, credit conditions become tighter, and only more creditworthy clients will have access to credit. As shown in the chart below, the 'cut-off' point (the condition of accepting or refusing the loan application) will shift to the left.

In most cases, willingness to take risk depends on economic performance, developments in the loan portfolio and expectations. It is difficult to measure the extent of and changes in this willingness; in international practice the Senior Loan Officers survey on lending practices is used to gauge it in a qualitative manner, by asking banks about the extent of and reasons for tightening their credit conditions.

**Chart 2-10**  
Distribution of new loan applications according to risk

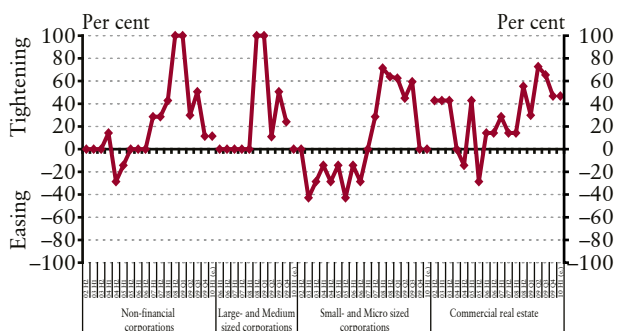


*Note: The white arrow shows that the distribution in the example shifts to the right because of the deteriorating economic environment. The black arrow illustrates that the bank's 'cut-off' point shifts to the left due to the higher risk aversion, resulting in tighter credit conditions.*

*Source: Michel Crouhy, Dan Galai, Rober Mark (2006): The essentials of risk management, McGraw-Hill.*

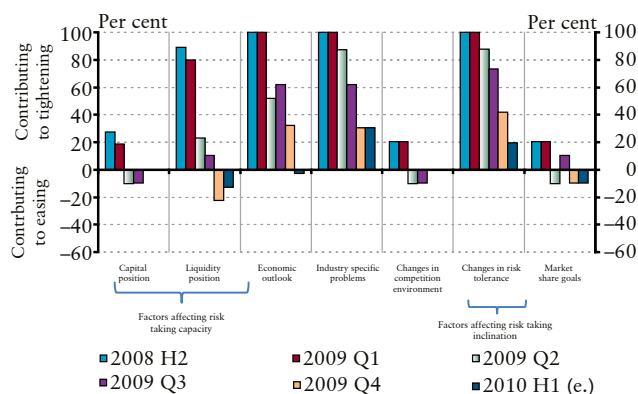
In terms of financial stability the question whether the supply constraint is caused by banks' ability to lend or willingness to take risks is very important. If there are problems with ability to lend, individual banks' capital and liquidity positions have to be strengthened to facilitate lending. An increase in the willingness to take risks can only be attained using indirect measures, improving the economic environment and reducing the expected loan losses or it can be treated by risk sharing (e.g. through guarantee programmes).

**Chart 2-11**  
**Changes in credit conditions to non-financial corporations in the banking sector**



Note: Net percentage of respondents reporting tightening/easing.  
 Source: MNB.

**Chart 2-12**  
**Factors contributing to changes in corporate credit standards and conditions**



Note: Net percentage of respondents reporting tightening/easing.  
 Source: MNB.

**Due to the continuous tightening in non-price credit conditions, corporations face effective lending constraints.** The low interest rates on euro-denominated products and the premia on forint- and euro-denominated products which are close to the level of the euro area may also reflect a composition effect in terms of client creditworthiness. Corporate profitability deteriorated considerably in 2009. As a result, regardless the banks' behaviour, there are fewer creditworthy companies. However, due to their declining willingness to take risks, even within this smaller pool of companies banks lend only to clients with better creditworthiness (Box 2-1). Banks strive to select clients with good creditworthiness by tightening their non-price credit conditions (Chart 2-11).

There may be fierce price competition for these clients, i.e. the interest rate premium is low. The tightening of non-price conditions is mainly apparent in limitations on the maximum maturity and the amount of credit, as well as in higher collateral requirements and stricter loan monitoring. Banks' ability to lend improved in the last quarter of 2009; the liquidity and capital position already pointed to an easing in credit conditions. By contrast, due to the deteriorating economic environment and mounting loan losses, willingness to take risks limited lending. Industry-specific problems and the decline in risk tolerance point to further tightening (Chart 2-12).

**Growth in domestic corporate lending is expected from 2010 H2, but a significant upswing is only anticipated in 2011.** According to our expectations, the economy may already expand in H2, mainly as a result of growth in exports. At the same time, supply side constraints on lending may ease slowly, with a gradual increase in lending activity by banks. Banks' willingness to take risks may start to rise from its current low level when an economic recovery takes place.

### 2.1.2 CORPORATE LENDING MAY BE STIMULATED BY STATE GUARANTEES AND INTEREST SUBSIDIES<sup>8</sup>

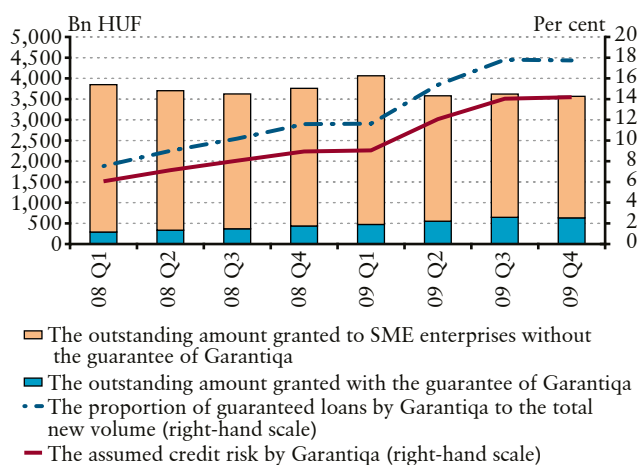
**In the case of corporate loans, the continued existence of supply constraints may hinder an economic recovery.** Due to the financial crisis, banks' credit conditions have become tighter in many countries, including Hungary. There is a risk that an increasing number of companies, including small and medium-sized enterprises (SMEs) in particular, will be unable to renew their expiring working capital financing as well as some of their investment loans (a slighter decline has been observed in long-term loans). The credit crunch makes companies illiquid or forces them to carry out greater adjustments in activity than desirable, which may hinder an economic recovery to a great degree.

**Due to the lack of a developed capital market, one efficient way of stimulating banks' willingness to take risks may be to make guarantee programmes more efficient in Hungary.** For lack of a developed capital market, the success of programmes for purchasing corporate securities by the central bank as have been seen in developed countries may be limited. However, there are two ways for fiscal policy to intervene efficiently: by providing state

<sup>8</sup> The statements here largely rely on the conclusions of the round-table conference entitled 'Corporate and SME guarantee programmes, preferential loans' held at the Ministry of Finance (initiated by the European Bank Co-ordination Initiative) on 5 March with the participation of major domestic banks, important parent banks as well as domestic and foreign authorities and guarantee institutions.

Chart 2-13

## Total and guaranteed loans to SMEs



Note: Garantiqa Zrt. provides guarantees for approx. 80 per cent of the total amount of loans, thus the amount of actually guaranteed loans is smaller than the total amount of warranted loans.

Sources: Garantiqa Zrt., MNB.

guarantee or interest subsidies, i.e. by partly sharing the risks between the banks and the state. In this way, the state may reduce its own expected losses. Providing (state) guarantees is often even more advantageous than providing interest subsidies.<sup>9</sup> By assuming a part of the risks from banks' balance sheets, the state can ease banks' non-price conditions and reduce or even put an end to the phenomenon of credit rationing in the SME sector. This would mitigate the pressure on banks' capital and increase banks' willingness to take risks. At the same time, the provision of guarantees and interest subsidies would improve the price factor as well. In the case of providing guarantees, the interest rate would be lower because of a decline in the credit risk premium, while in the case of interest subsidies the interest rate would be lower as a result of the partial division of the financing cost.

**The utilisation of credit guarantees provided to banks is increasing markedly, although there are strong limits to further growth.**<sup>10</sup> It is mainly Garantiqa Zrt. that is behind the credit guarantees provided to banks. By

end-2009 total loans extended with Garantiqa's guarantee already exceeded HUF 630 billion, which is nearly 18 per cent of total bank loans to SMEs. Garantiqa Zrt. provides full guarantee for approximately 80 per cent of the total guaranteed loans, i.e. for HUF 506 billion (Chart 2-13) of which approximately HUF 17 billion have been redeemed in 2009, representing a redemption rate of 3.4 per cent. The increase in unconditional guarantees was unable to prevent the decline in lending, but it may have mitigated its magnitude. One problem is that in the 2010 budget the total amount of guarantees is limited to HUF 550 billion, and HUF 15.2 billion has been allocated in the budget to cover redemptions. The current guarantee facility does not promise an increased availability, and assuming that the redemption rate remains the same the redemption expenses mean a tight constraint as well. Due to the strict budget constrains mainly EU fund should be reallocated<sup>11</sup>. The increase in the amount of guarantees should be pre-announced and predictable, as those concerned cannot adjust to rapidly changing conditions or can only do so with difficulties. In addition, at present the availability of the guarantee programmes is limited by administrative burdens as well as the divergent and complicated structure of the programme. It would be necessary to simplify the programmes, to elaborate a programme in detail that aims at one or two main industries, and to determine the conditions of providing the guarantees in a countercyclical manner.<sup>12</sup>

**Utilisation of loan programmes with interest subsidy is low.** Although from November 2008 the government introduced four new programmes to support the SME sector's access to credit and these appeared in the supply of the largest commercial banks in 2009 H1 at the latest, their effect on companies' loan structure has remained moderate. Total subsidised loans extended with the participation of domestic banks<sup>13</sup> even declined, falling by approximately 5.2 per cent at the annual level by end-2009 (exchange rate adjusted figure). Subsidised loans declined at a somewhat slower pace than the total corporate portfolio (Chart 2-15). Accordingly, the share of subsidised loans within total corporate loans increased to slightly above 5 per cent.

<sup>9</sup> Stefan Arping-Gyöngyi Loránth-Alan Morrison: "Public Initiatives to Support Entrepreneurs: Credit Guarantees versus Co-Funding," Journal of Financial Stability (2009)

<sup>10</sup> The Garantiqa undertakes a maximum 80 per cent guarantee for individual loan agreements, 70 per cent of which may be counter-guaranteed by the state.

<sup>11</sup> The amount of guarantees may be significantly increased by using the resources of the so-called JEREMIE (Joint European Resources for Micro to Medium Enterprises) guarantee programme. This programme may provide a framework for guarantees behind new loans provided for business development, and – if allowed by the European Commission – also for counter-guarantees of already existing loans that meet the relevant criteria. The details of possible uses and concrete implementation are being discussed by the guarantee companies, the authorities and the EU Commission.

<sup>12</sup> This latter step would be needed because currently the gradual tightening of the guarantee conditions results in a tightening of banks' credit conditions. Consequently, the guarantee programmes are in fact procyclical, while the objective would be to attain a countercyclical effect.

<sup>13</sup> They include: For a New Hungary Enterprise Development Loan Programme, For a New Hungary Agricultural Development Loan Programme, Széchenyi loan, Széchenyi card credit, Agricultural support prefinancing, loans related to grants from the European Union, credit extended with institutional support from the European Union (refinancing, guarantee undertaking) as well as other loans with interest subsidy.

**Access to subsidised loan programmes continues to be limited.** The interest rate on subsidised loans is 2–3 per cent lower than market rates. The low utilisation may be explained by the relatively tight conditions. Practically all of the programmes (including working capital financing programmes as well) can only be used for investment or at least activity expanding purposes (due primarily to the relevant EU regulations), a condition which is difficult to fulfil in the period of economic recession. Loan replacement is also excluded. Nevertheless, at the end of last year the conditions eased somewhat: the working capital credit programme was also opened for the companies operating in the trading sector.

### 2.1.3 THE CHANGE IN THE DENOMINATION STRUCTURE OF NEW LOANS TO HOUSEHOLDS IS A FAVOURABLE DEVELOPMENT, ALTHOUGH THE DECLINE IN FOREIGN CURRENCY LOANS CAN ONLY BE SLOW

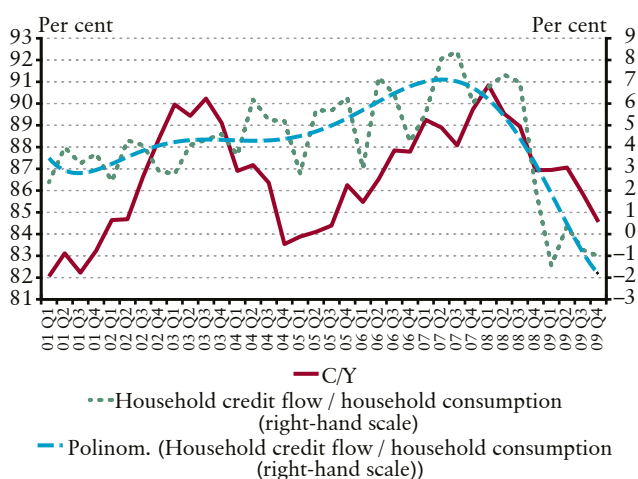
**In parallel with the drop in consumption, lending activity is also declining.** In 2006 households responded to the deterioration in their income positions due to fiscal tightening by smoothing their consumption and increasing their borrowing. By contrast, in 2009 as a result of the crisis the fall in disposable income and the uncertain economic outlook led to a reduction in consumption, thus consumption

rate declined in a necessary and desirable way (Chart 2-14). This affected everyday consumer goods to a lesser extent and purchases of consumer durables – especially motor vehicles – to a greater extent. As a result, the financing structure of consumption also has changed. From the second half of 2009 the loan to consumption rate became negative, meaning that households are financing their consumption only from their income and using their previously available wealth.

**Swiss franc-denominated loans have fallen to a very low level and because of this interest conditions have become tighter.** In response to the liquidity tensions resulting from the financial crisis and due to the decline in risk-taking, banks practically suspended the extension of Swiss franc-denominated loans, which had dominated previously, and extended foreign currency loans to their clients only in euro from last year on. As a consequence of this currency shift, due to the difference in base interest rates (EUR–CHF) the APR of new loans increased markedly, which by itself reduced the amount of loans available to clients. In the case of housing loans, the increase in instalments may have failed the entire borrowing transaction. However, because of the more sound denomination structure of the new loans we consider the decline in Swiss franc-denominated lending to be a positive development.

**Price competition in the forint mortgage market is strengthening, the premia on foreign currency loans remain high.** In past years banks were mainly engaged in risk competition, and due to the strong demand they were able to price a significant premium into the loans. The liquidity tensions and later stronger risk aversion led to a substantial drop in new lending, and accordingly no price competition among participants has been detected in this period. However, by the end of last year growth became more important, leading to a stronger price competition in forint mortgage loans. As a result, interest rates on forint-denominated mortgage loans decreased. In the final months of the year several banks announced loan products with APRs around 10 per cent tied to a benchmark rate (Chart 2-15). These loans are becoming increasingly competitive vis-à-vis foreign currency loans; this may already indicate an upturn in forint mortgage lending. The decline in the funding costs was only partially passed to euro-denominated loans, and the premia grew to a greater extent than risk costs.

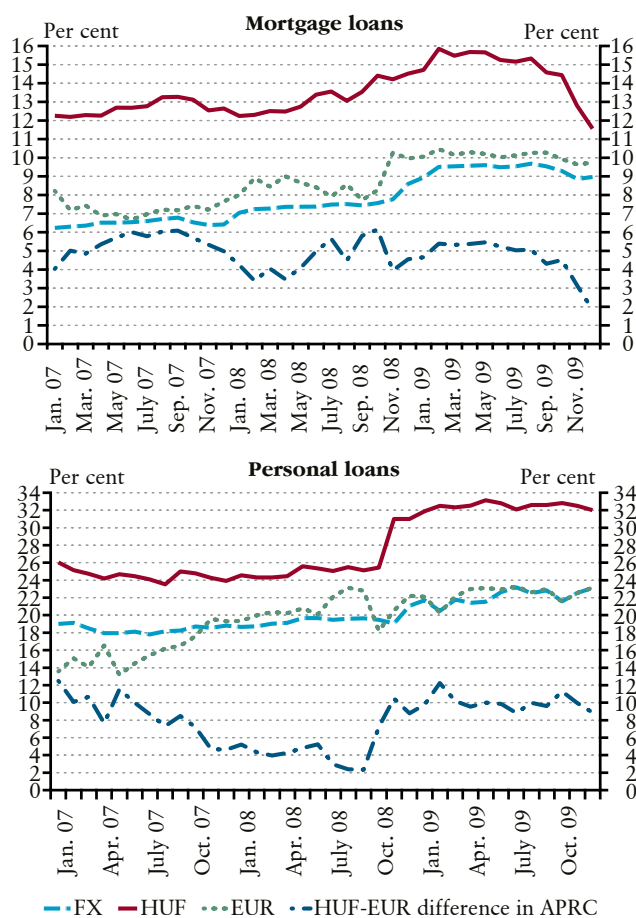
**Chart 2-14**  
**The relationship between consumption and lending<sup>14</sup>**



Source: MNB.

<sup>14</sup> Not only consumer credit, but total loans are used for illustrating the relationship between consumption and lending. This is basically justified by the fact that the majority of housing loans is related to buying second-hand homes; therefore, it financed consumption indirectly.



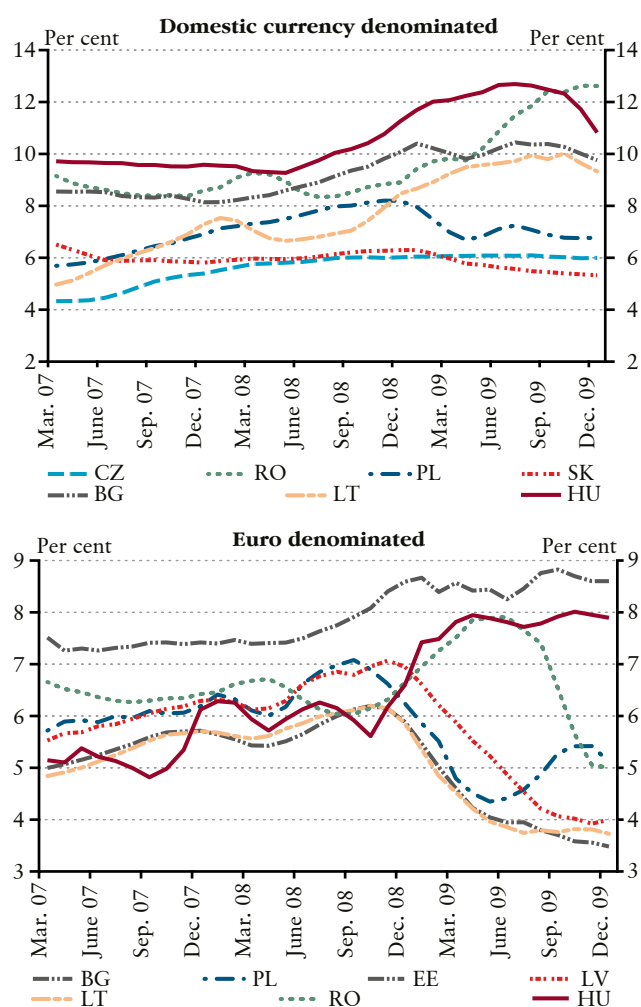
**Chart 2-15**
**Average APRC on new loans**


Note: Foreign currency interest rates mean the average APRC value of foreign currency denominated loans weighted by contracts.

Source: MNB.

**In Hungary within the household sector both domestic currency-denominated and euro-denominated interest rates are high in regional comparison.** A dominant portion of household loans in the region is mortgage loans, a smaller part of which is used for housing and a larger part used for consumption. In terms of housing

loans denominated in domestic currency, only in Romania are interest rates higher than those of the forint mortgage loans in Hungary (Chart 2-16), which can be explained by these countries' high risk premia. Hungary is also an outlier in terms of the interest rates applied in euro-denominated lending. Interest rates on euro-denominated housing loans increased markedly at end-2008 and early 2009, and have not followed the ECB's interest rate cuts so far, consequently these interest rates have practically been stagnating (similar developments are observed only in Bulgaria).

**Chart 2-16**
**Interest rates on new housing loans in international comparison**


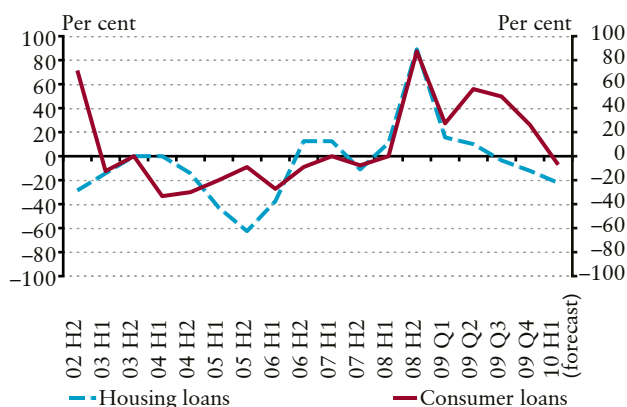
Note: In the case of Slovakia, the domestic currency contains loans denominated in both Slovak koruna and euro.

Source: National central banks.

**The excessively loose conditions observed in previous years have become tighter.** With the liquidity constraints arising as a result of the financial crisis, banks tightened their non-price conditions significantly (Chart 2-17). They essentially terminated solely collateral-based lending, and increased the value of the required collateral. Although following the easing of liquidity tensions banks' ability to lend improved considerably, this did not lead to an increase in willingness to lend. We see the correction of credit conditions, which had become too loose in recent years, as a favourable development.

**Chart 2-17**

**Credit conditions on households in the banking sector**



Note: Net percentage of respondents reporting tightening/loosening.  
Source: MNB.

**Total loans to households declined considerably.**

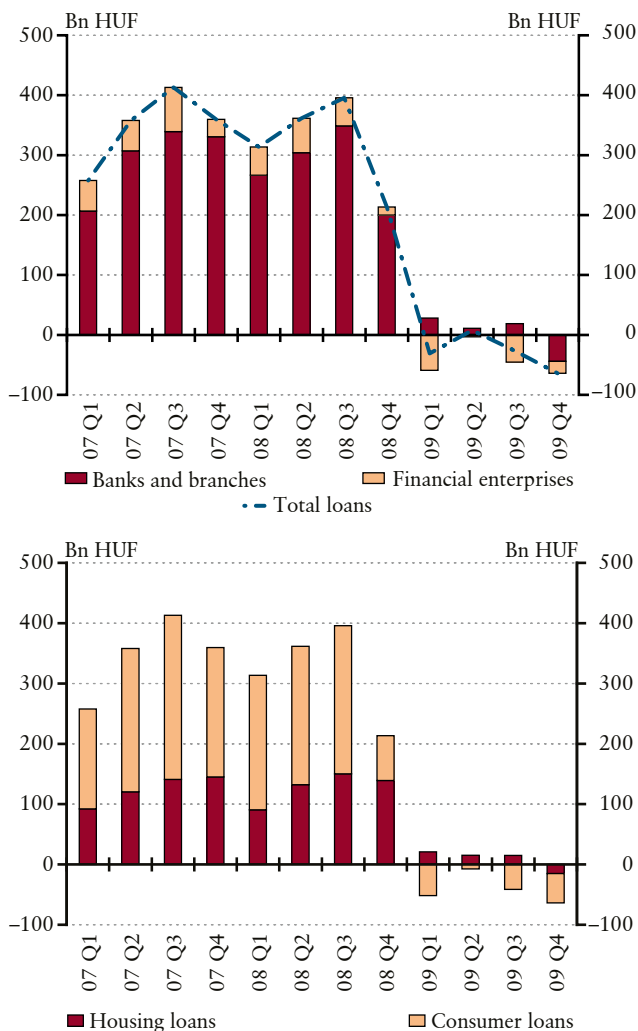
Strengthening one another, the unfavourable demand and supply factors led to a decline in lending activity. Consequently, after many years, the dynamics of lending to households slipped into negative territory in 2009: the magnitude of the fall was 1.2 per cent at the annual level (Chart 2-18). During the year, the decline in outstanding loans accelerated, and this was only slowed down by demand for loans brought forward due to the termination of state subsidy of housing loans. At the same time, as a result of the decrease in sales of new motor vehicles, a decline of more than 5 per cent in loans was experienced at financial enterprises, which are focused mostly on vehicle financing.

**The decline in household loans is significant in regional comparison.**

Within the region the dynamics of lending to households fluctuated in a wide range in 2009. A considerable expansion in total loans was observed in countries with low domestic interest rate levels and consumption-stimulating economic policies. The dynamics of lending to households in Estonia declined to a similar extent as in Hungary, while the drop was even greater in Lithuania, Latvia and Romania (Chart 2-19). The underlying reason for the developments observed in these latter

**Chart 2-18**

**Distribution of net household credit flow between credit institutions and financial enterprises, and as well as main products**



Note: Home equity, personal, vehicle financing loans etc. are combined in consumer loans.  
Source: MNB.

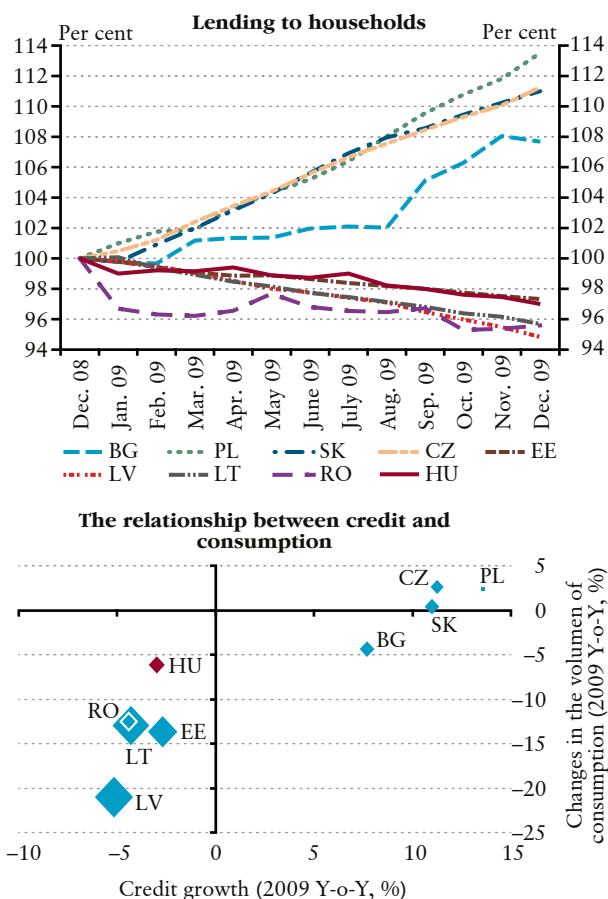
countries may have been that while consumption declined by around 6 per cent in Hungary, a drop of more than 10 per cent was observed in Romania and the Baltic countries in 2009.<sup>15</sup>

<sup>15</sup> In these latter countries the fall in consumption was significantly exacerbated by the fact that before the crisis the rapid credit expansion was accompanied by an asset price bubble as well.



**Chart 2-19**

**Lending to households among the new EU member states (December 2008=100%), and the relationship between credit and consumption**



Note: The outstanding amount on loans is exchange rate adjusted. On the right chart, larger rhombus indicates a larger GDP contraction. Bulgaria (BG), Czech Rep. (CZ), Estonia (EE), Latvia (LV), Lithuania (LT), Hungary (HU), Poland (PL), Romania (RO), Slovakia (SK).

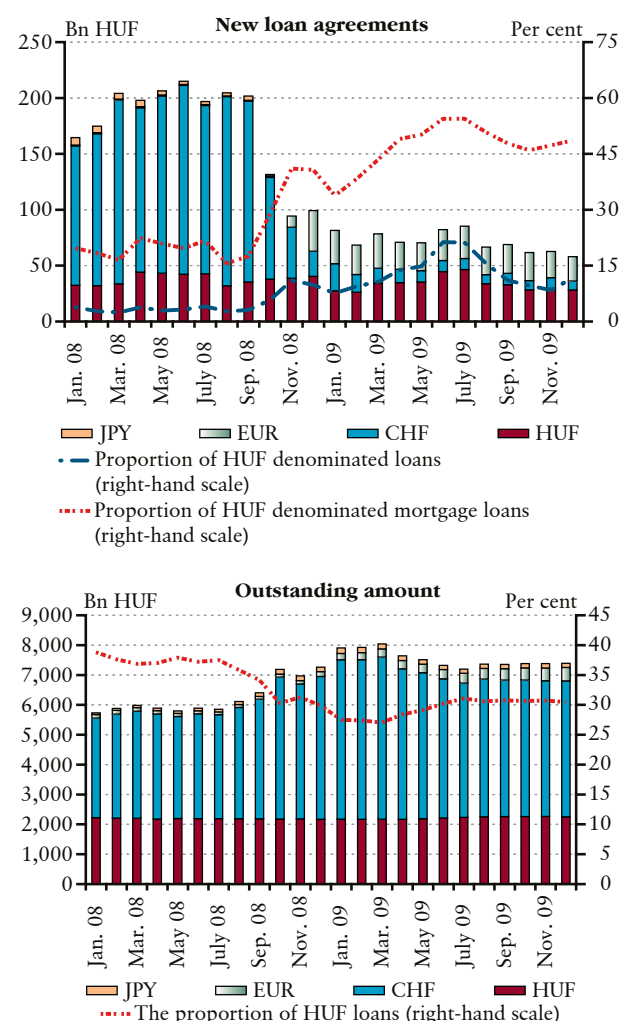
Sources: National central banks, Eurostat.

**The share of forint loans within new loans is increasing.** A favourable trend can be identified in the currency composition of new loan agreements. The tightening of credit conditions mainly affected long-term and typically foreign currency (including both housing and home equity) loans (Chart 2-20). Therewith after the termination of the government-subsidising scheme at the end of June 2009 new forint-denominated mortgage loans with more favourable interest rate conditions started to gain ground from December 2009.

**Due to the slow decline in household foreign currency loans, the vulnerability of the financial system is decreasing only gradually.** The share of foreign currency loans within household loans is declining slightly, but still amounts to around 70 per cent. Due to the high proportion

**Chart 2-20**

**New loan agreements and total loans by denomination in the banking sector**

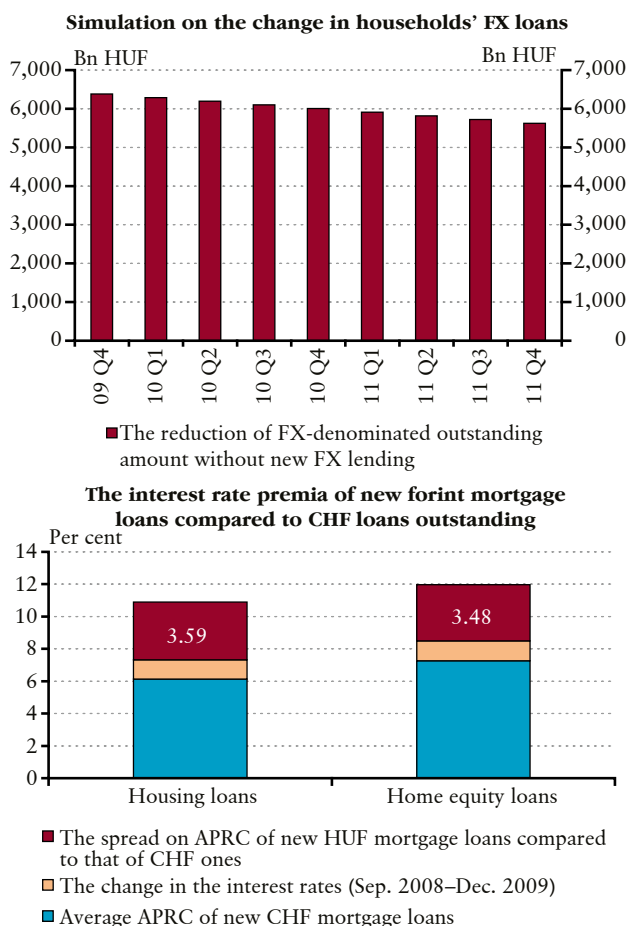


Source: MNB.

of mortgage loans with an average 13–14 years to maturity existing foreign currency loans may only decline at very slow pace. If there was no more new lending in foreign currency in the future at all, based on our estimation, foreign currency loans would decline by around 13 per cent by the end of 2011, and then the decline would decelerate as the effect of shorter-term transactions faded out (Chart 2-21). However, a reduction of foreign currency loans could be achieved by replacing these loans with forint loans. For this, the monthly repayment of new forint loans should be lower, or only slightly be higher as there would no longer be exchange rate risk. Taking forint loans with the already more favourable interest conditions as a basis, shifting to forints would result in a 20–25 per cent increase in the monthly instalment, which would obviously not motivate households to change. Due to the lower interest rate

Chart 2-21

### Simulation of the change in households' foreign currency loans and the interest rate premium of new forint mortgage loans compared to outstanding CHF loans



Source: MNB.

premium, banks are also hardly interested (the premium is 5–6 per cent on foreign currency loans, while it is typically 3.5–4.5 per cent on new forint-denominated loans with favourable interest rate conditions) (Chart 2-21). Only a further decline in the interest rate spread can result in substantial progress in this regard.

**Household loans are expected to decline in 2010 as well.** As a result of the larger-than-expected fall in loans we have revised our forecast. The labour market follows GDP growth with a delay, and we expect it to improve only from 2011 on. Consequently, household consumption and demand for loans will also only expand slowly. In particular, this will have a negative impact on vehicle financing. Thus, a substantial fall in lending may take place at financial

enterprises engaged in this segment. The government decree on prudent lending will also contribute to a slight decline in loans over the short run. Moreover, banks' strong risk aversion may also limit lending. Within this, however, easing is expected in forint-denominated mortgage loans, where interest rates may continue to decline.

## 2.1.4 STRENGTHENING THE PRUDENT LENDING AND DEVELOPING THE FORINT MORTGAGE BOND MARKET ARE KEY OBJECTIVES

**The objective of the Central Bank's proposal released on 5 October 2009 is to prevent credit conditions from becoming too loose again.** In 2004–2008 households' indebtedness grew faster than what would have been justified by the convergence path.<sup>16</sup> The acceleration in indebtedness was fuelled by foreign currency loans, making households with no natural hedge riskier and thus increasing the probability of default. The aforementioned risks stemming from foreign currency lending materialised as a result of the financial crisis. In order to prevent these risks from increasing after the upturn in lending to households following the recovery of economic activity, the Central Bank initiated financial regulation. The government decree came into force on 1 March 2010 implementing limitations on the loan-to-value ratio (LTV) and the maturity of vehicle loans. According to the decree starting from 11 June 2010 banks have to establish the so called "Creditworthiness limitations" applying different conditions for forint and foreign currency loans (Table 2-2).

**The development of the long-term forint savings market is of key importance.** At the moment, one of the most important sources of vulnerability for the Hungarian economy is the lack of long-term forint savings. This has resulted in an increasing reliance on foreign capital markets. No further increase can be expected in long-term forint savings without appropriate development of the local capital markets. To enhance this, the Central Bank announced a further programme to develop the mortgage bond market (Chart 2-22). As the first step of this programme the MNB in 2010 is buying a maximum amount of HUF 100 billion of mortgage bonds in the primary and secondary markets. The MNB purchases a maximum 20 per cent of the total issue (not within a banking group) of a series or an issue. The purchase is subject to strict, market transparency conditions.

**In terms of the further development of forint mortgage lending it is reasonable to consider widening the scope**

<sup>16</sup> This may be indicated by the domestic consumption rate, which is high in international comparison, the noticeably increased loan/GDP ratio and the current account deficit, which was permanently high in recent years.

**Table 2-2****Main figures in the Central Bank' proposal and in the decree adopted by the government**

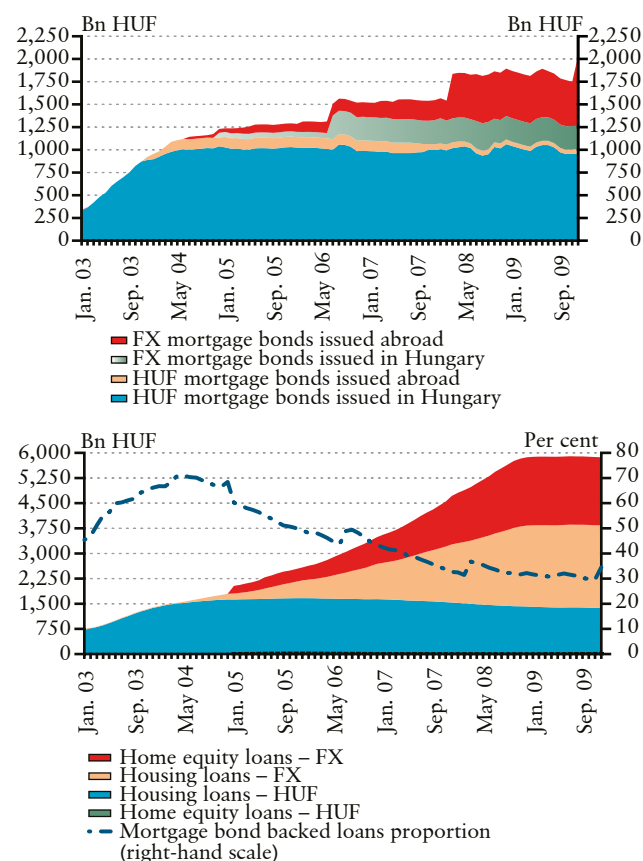
			<b>MNB proposal</b>	<b>Government decree</b>
Effective from 03. 01. 2010	Maximum Loan-to-Value ratio in the case of mortgage loans	HUF	70%	75%
		Euro	54%	60%
		Other currency	35%	45%
	Maximum Loan-to-Value ratio in the case of vehicle financing	HUF	80%	75%
		Euro	62%	60%
		Other currency	40%	45%
Maximum maturity of loans and leasing contracts in the case of vehicle financing		5 years	7 years	
Effective from 06. 11. 2010	Regulation on debt servicing burden of customers		Payment-to-income depending on family income by law	Limits to grant loans determined on bank level

Note: The maximum loan-to-value ratio is 5 percentage points higher in the case of leasing.

Source: MNB.

**of institutions authorized to issue mortgage bonds.** The forint mortgage bond market could be deepened by extending the right of mortgage bond issuance to all credit institutions. There are basically two kinds of international regulatory patterns: the specialised bank model, in which only credit institutions specialising in this field are allowed to issue these securities, and the universal model, which allows bond issuing to all commercial banks that meet certain strict criteria. Institutions for which – due to the costs – neither the establishment of their own mortgage institution, nor refinancing with the involvement of another mortgage institution has been competitive vis-à-vis other liabilities could also finance a part of their portfolio with mortgage bonds. This modification could increase institutional investors' demand as well, since with more issuers the individual institutional investment constraints would loosen, and it would be easier to diversify the mortgage bond portfolio.

**Making credit conditions transparent is also an important part of the programme.** While in past years Hungarian banks priced their corporate loan products on the basis of a reference interest rate and a premium, the pricing of mortgage loans was typically not rule-based.<sup>17</sup> Therefore, there is no clear relationship between (Hungarian and foreign) central bank rates and other cost elements and the interest rates perceived and paid by clients. In addition to the more uniform handling of pricing practices and the magnitude of the premium, the proposal initiating self-regulation could also extend to the easing of loan repayment and changing of banks as well as to the provision of adequate information.

**Chart 2-22****Mortgage bonds issued and outstanding mortgage loans at the end-December 2009 exchange rate**

Source: MNB.

<sup>17</sup> It must be noted, however, that the number of household products where the interest rate is linked to some kind of reference rates is increasing, although the practice of pricing remains diversified.

## 2.2 Liquidity of the money market and the banking system is improving, the strong reliance on external funding is only declining slowly

*The rapid deterioration in liquidity of the major domestic financial markets at the end of 2008 and early 2009 was followed by a gradual adjustment from the spring of 2009. As a result of higher risk appetite on international financial markets, the balance sheet adjustments of domestic banks and the widening of counterparty limits, liquidity of the FX swap market quickly normalised. By contrast, the adjustment was slower on the spot FX and government bond markets, while the liquidity of the unsecured overnight interbank market was restored only to a limited degree.*

*The loan-to-deposit ratio in the Hungarian banking sector increased from 155 percent at the end of 2007 to 160 percent by the end of 2008 and decreased to 143 percent by the end of 2009. The balance sheet adjustments of the domestic banking system were observed only in the first half of 2009. The downtrend in the loan-to-deposit ratio of banks slowed down significantly in the second half of the year. In 2009, the rate of external funding basically remained unchanged compared to the level recorded in September 2008 before the crisis, as banks increased their financing of the state (central government budget and central bank) to a considerable extent.*

*Numerous factors suggest a further decrease in the loan-to-deposit ratio. The net financing capacity of the private sector may remain at high level. Moreover, the decline in the loan-to-deposit ratio realised so far seems rather modest in comparison to earlier crisis experiences, which also implies a sustained adjustment by the banking system. The rate of decline in the loan-to-deposit ratio, however, is surrounded by a high degree of uncertainty, particularly owing to the changed structure of household savings.*

### 2.2.1 CONTINUOUSLY IMPROVING LIQUIDITY ON THE FINANCIAL MARKETS

**In the past year, the liquidity indices<sup>18</sup> of the major domestic financial markets showed gradual**

**improvement, although minor tensions remain, particularly in relation to longer maturities and the recovery of counterparty limits.** The rapid deterioration in liquidity on the major domestic financial markets at the end of 2008 and early 2009 was followed by a slow adjustment in parallel with the higher risk appetite on international financial markets from the spring of last year (Chart 2-23). Pressure from non-resident sellers has eased on the government securities market since May 2009. The T-bond yield spread above the interest swap yield fell below 20 basis points for one- and three-year maturities, to a level recorded prior to the crisis, while the current 40-80 basis point level for longer maturities continues to suggest tensions (Chart 2-24). The break in the selling trend of forint instruments stabilised the forint demand of non-residents on the FX swap market and also reduced fluctuations in the HUF exchange rate. The balance sheet adjustments of banks (reduction of FX assets, increase of FX liabilities) reduced their FX liquidity risks, thus the foreign currency demand of residents on the swap market declined. The consolidation of the FX swap market significantly promoted stabilisation of the HUF exchange rate, as HUF yields derived (implied) from swaps returned close to HUF interbank interest rates with the appropriate maturities. The counterparty limits of banks expanded again, producing a positive effect particularly on the FX swap and interbank market. According to an analysis of interbank relations<sup>19</sup>, with the intensifying tensions on the dollar swap market – which was the dominant subsector of the FX market – the euro swap market, which generally exhibited much lower turnover, was partly able to assume the role of the dollar swap market. Along with easing of tensions, a rearrangement of the earlier changes started in the beginning of 2009, and was followed by an acceleration of this trend in the second half of the year. The number of active banks and trading partners decreased on the HUF interbank money market during the crisis and the correction in 2009 was only partial. The number of interbank relations is low compared to the number of active banks. The improvement

<sup>18</sup> Indicators were normalised on the basis of their long-term averages and distribution. For the details of the liquidity indices calculated by the MNB, see Judit Páles-Lóránt Varga: Trends in the liquidity of Hungarian financial markets – What does the MNB's new aggregate market liquidity index show? *MNB Bulletin*, April 2008. Since publication of the article, with regard to the government bond and interbank unsecured market, we modified the methodology of the bid-ask spread due to conversion to more reliable data sources. According to the new methodology, we estimate the spread from the distribution of prices and interest rates from the average on the given day. In relation to the FX swap market, we examine the full overnight segment in place of the 1-day tomnext USD/HUF market.

<sup>19</sup> An MNB study analysing the interbank relations and the changes of counterparty limits with measures which are used to examine the behaviour of the interbank networks, will be published soon.

Chart 2-23

## Consolidation of the major domestic financial markets

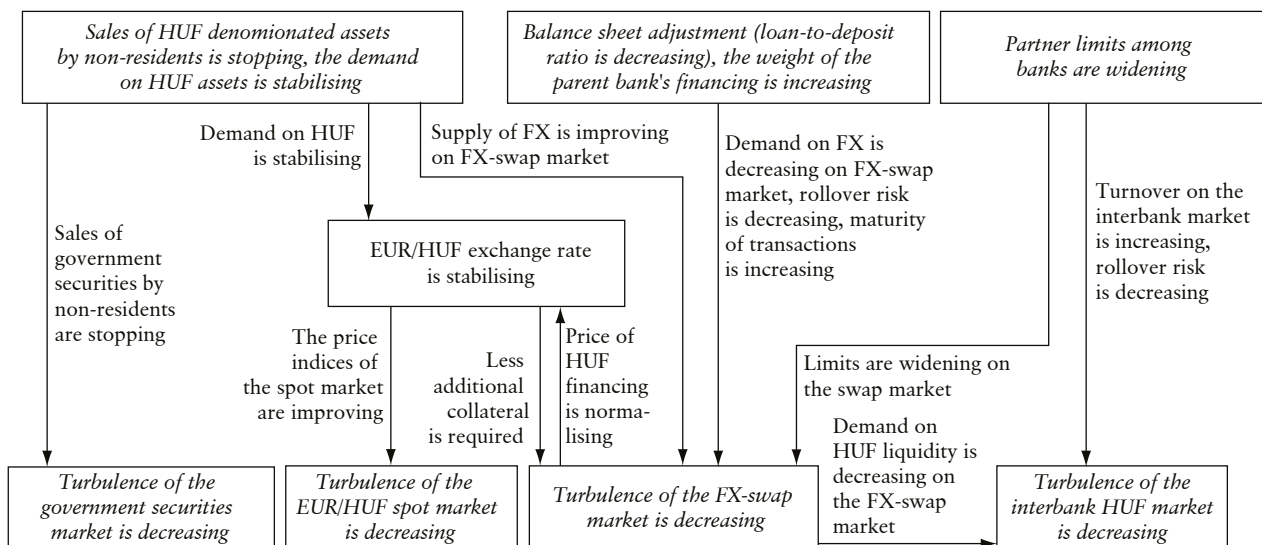
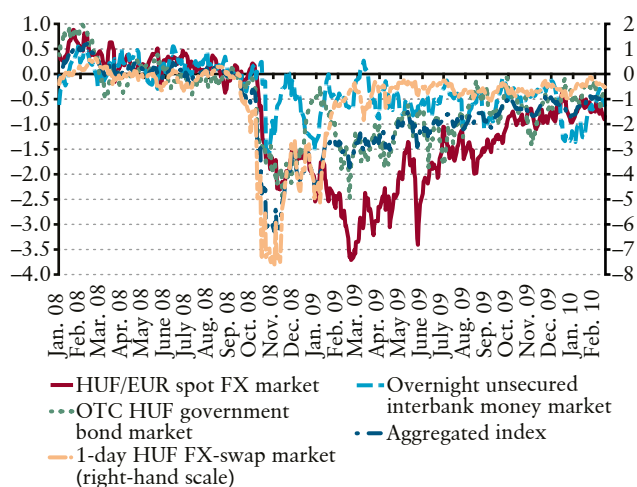


Chart 2-24

## The aggregated liquidity index and its sub-indices



Source: Reuters, MNB.

in our liquidity indices is the largest in relation to the 1-day FX swap market, which showed the highest deviation in the turbulent period. From April 2009, the individual segment indicators only moderately vary from their average pre-crisis figures. Slower adjustment was observed on the spot FX and government bond markets, while the liquidity of the unsecured o/n interbank market was restored only to a limited degree.

**Following the widening of the interest rate corridor at the end of 2009, turnover on the overnight unsecured interbank market rose as a result of more intensive liquidity management of banks.** From March to the end

of November 2009, this market was characterised by low turnover, in comparison to the figures recorded before the crisis, as well as interest rates approaching the bottom of the interest rate corridor. In this period, owing to low counterparty limits and extremely cautious liquidity management, participants continuously rolled overnight deposits on the order of HUF 300-500 billion. This was enabled by the high level of systematic interbank forint liquidity and a narrow interest rate corridor. Following the widening of the interest rate corridor at the end of 2009, banks gradually moved away from central bank deposits again in the direction of the unsecured overnight interbank market. Overnight interest rates emerged from the bottom of the interest rate corridor as a result of more intensive liquidity management, leading to growing volatility in intraday and inter-day interest rates. This led to deterioration in the price indices of liquidity which could not be offset by the growing, but lowers than pre-crisis turnover. Thus, on the whole, the aggregated interbank liquidity index continues to fall short of the long-term level.

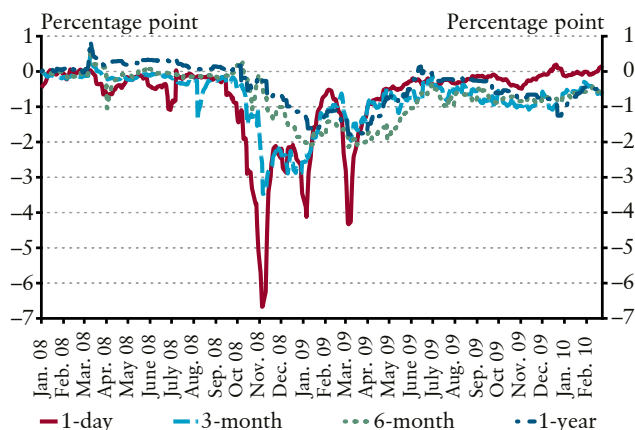
**The 1-day HUF FX swap market currently does not reveal liquidity tensions.** The liquidity of the domestic FX swap market improved substantially in the second quarter of 2009; as limits restricting transactions between credit institutions were gradually relaxed. As a result, the banks were again able to conclude more transactions with each other; the price of FX buying on the 1-day swap market fell, and use of the two-way (providing euro and forint liquidity) overnight central bank FX swap quick tender, which was introduced in October 2008, became extremely low. This instrument was withdrawn by the MNB



Chart 2-25

### Difference between implied HUF yields of one-day, three- and six-month and one-year HUF FX swap transactions vis-à-vis major currencies (EUR, USD, CHF) and the HUF reference interest rates with appropriate maturities

(exponential moving average)



Notes: The negative values may suggest liquidity tensions on the FX market, as they indicate that the implied HUF yields were lower than the appropriate reference interest rates. In relation to the transactions with a maturity of 1 day, we used the overnight unsecured interbank money market rates as the reference rate. In relation to the other transactions, we used the points of a fitted spot yield curve based on FRA and interest rate swap quotations. The chart only indicates the transactions of Hungarian credit institutions concluded with domestic and non-resident credit institutions.

Source: Reuters, MNB.

in May 2009, as intermediation was no longer necessary. The 1-day swap segment also continued to improve after this date. The difference between the HUF yield of the swap market and the unsecured overnight interbank forint interest rate has basically disappeared since early December 2009, and conditions preceding the autumn of 2008 have been restored (Chart 2-25).

**Prices on the HUF FX swap market with longer maturities continue to suggest lower liquidity tensions.** The HUF yield premia of the swap markets with longer maturities (over one month) began rising rapidly towards the middle- and end of March 2009, reaching their maximum values in June. This was followed by a moderate decline in spreads in the second half of the year. From early December 2009, similarly to the 1-day segment, a repeated rise in the HUF yield premium was observed in this segment. As a result, the premium relating to the three-month, six-month and one-year maturities increased and reached an approximate value of minus 50 basis points, and

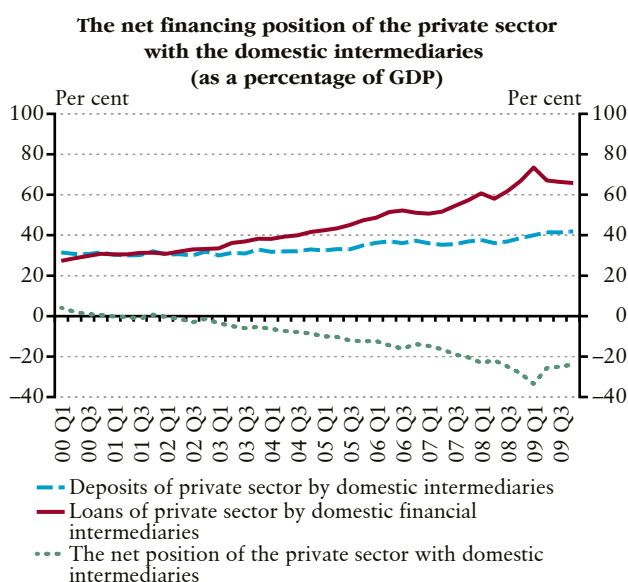
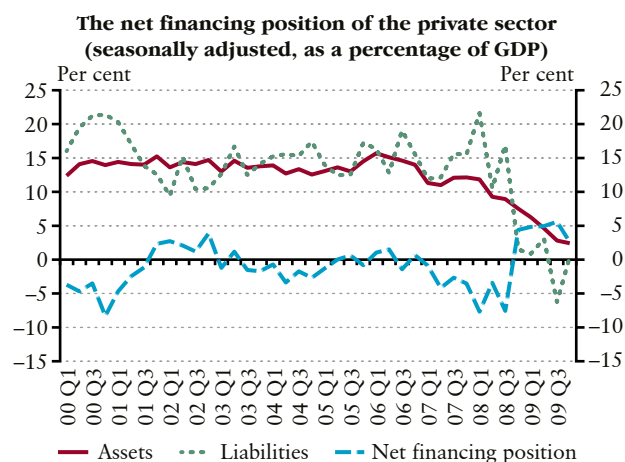
remained at that level in mid-February 2010 (Chart 2-25). The premium of swaps still not reaching zero suggests that liquidity has not yet to be fully restored on the FX swap market with longer maturities, and the FX demand of domestic banks continues to moderately exceed the foreign currency supply/forint demand of non-residents. The price of FX swaps with several years maturity (basis swaps<sup>20</sup>) also reflect the moderate liquidity tension characterising the FX swap market with longer maturity. The HUF yields of these transactions are 40-60 basis points lower than before the crisis. In FX swap transactions with several years maturity, resident participants are likely to be FX buyers and show a preference for transactions with longer maturities.

## 2.2.2 THE INITIALLY INTENSIVE BALANCE SHEET ADJUSTMENT OF THE BANKING SECTOR IS SLOWING DOWN SIGNIFICANTLY

**The net financing capacity of the private sector is a significant factor in the development of the loan-to-deposit ratio.** The net financing capacity of the private sector may have a substantial impact on the balance sheet of the banking system (Chart 2-26). If the net financing capacity of the private sector is positive, it is likely that the net portfolio position of the sector vis-à-vis the banking system improves, i.e. the loan-to-deposit ratio decreases. This correlation, however, may be modified by several factors. It is possible for companies (to a negligible extent for households) to directly access credit abroad (asset side disintermediation). The loan-to-deposit ratio may thus remain unchanged, notwithstanding the negative net financing capacity of non-financial corporations. The structure of savings' accumulation may also significantly affect this relationship: despite positive financing capacity, the loan-to-deposit ratio may even rise if the savings of the private sector are not in bank deposits, but in government securities or shares (liability side disintermediation).

**The private sector's shift to a net savings position significantly contributed to the decrease in the loan-to-deposit ratio.** From 2001 until the second half of 2006 in Hungary, the financing capacity of the private sector fluctuated at around zero, but the net portfolio position vis-à-vis the banking sector slowly worsened nonetheless. This is chiefly attributed to the behaviour of households, as they borrowed exclusively from banks and financial enterprises, while securities made up an increasing volume of savings. The position of non-financial enterprises vis-à-vis the banking system did not change considerably in the meantime.

<sup>20</sup> Basis swaps are FX swap transactions with maturity of over one year, in which variable interests relating to FX amounts constituting the basis of the swap are exchanged during the maturity of the transaction (e.g. BUBOR and EURIBOR).

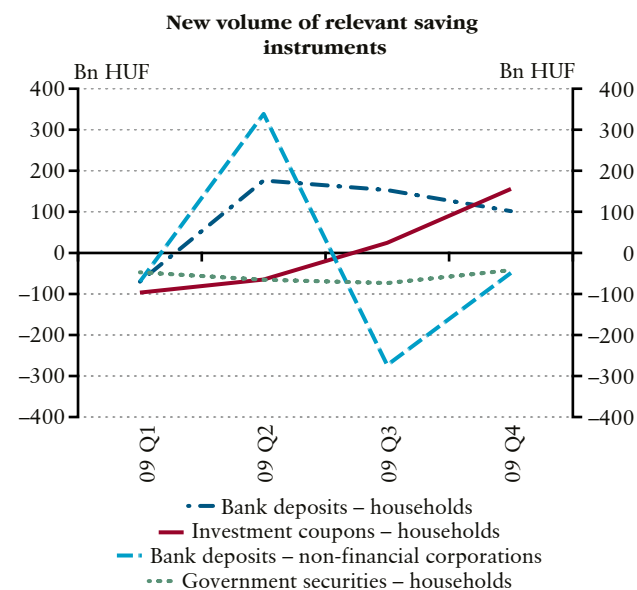
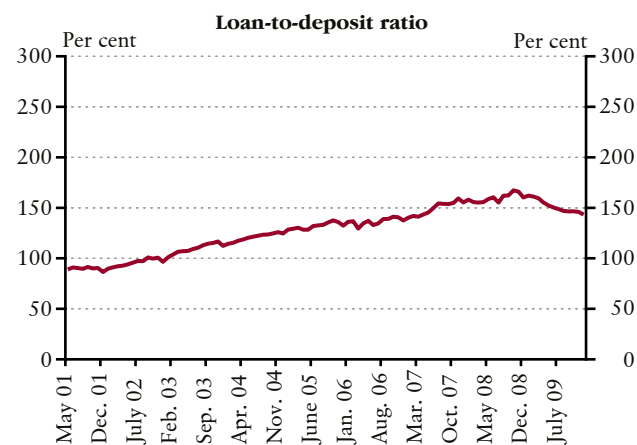
**Chart 2-26**
**Net financing capacity of the private sector and its position vis-à-vis the banking system**


Note: On the upper chart net flow type data, on the lower chart stock type data are indicated in per cent of GDP. The banks, branches and financial enterprises belong to the financial intermediary system.

Source: MNB.

In 2007, the deterioration in the net position vis-à-vis the banking system accelerated, and the loan-to-deposit ratio marked by a steep rise, attributed to the development of the net financing requirement of the private sector and its increase. At the end of 2008, the behaviour of the private sector changed radically as a result of the adverse macroeconomic and financial environment in the wake of the crisis. The net saving financial position resulted in an improvement in the sector's position vis-à-vis the banking system and a decline in the loan-to-deposit ratio in first half of 2009. The speed of this decline slowed down in 2009 H2.

The decline in the loan-to-deposit ratio of the domestic banking system slowed down in the latter half of 2009. The loan-to-deposit ratio, measuring the tightness of the banking system's liquidity, fell by 10-15 percentage points to 143 per cent by the end of 2009, compared to the level prior to the crisis (Chart 2-27). A major shift in trends, however, was observed during the year. The decline in the loan-to-deposit ratio slowed down significantly in the third quarter of 2009. Although the decline in lending continued in the second half of 2009, the volume of bank deposits decreased at a moderate rate. In the second half of the year, the corporate sector gradually utilised its deposits accumulated in the first half of the year. Although the deposit holdings of households increased, the growth rate

**Chart 2-27**
**Change in the loan-to-deposit ratio of banks and main types of savings**


Source: MNB.

decreased, therefore it was unable to offset deposit withdrawals by the corporate sector. In the meantime, demand for investment fund units substituting demand for bank deposits increased significantly, which – on the whole – also decreased the further adjustment of banks in the loan-to-deposit ratio.<sup>21</sup>

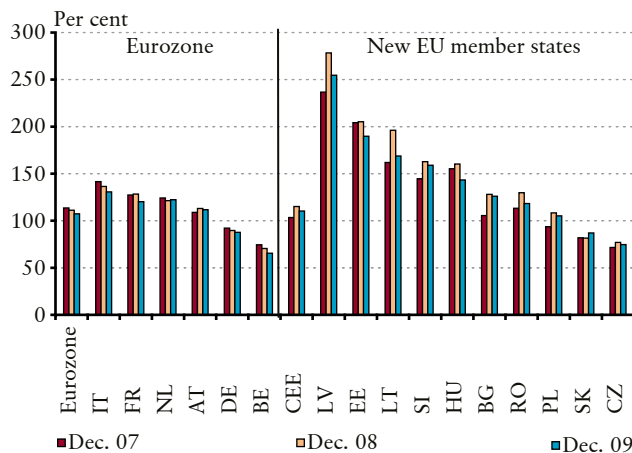
**A decrease in the loan-to-deposit ratio in most other banking sectors has been observed as well; the domestic ratio remains high in regional comparison.**

With regard to the loan-to-deposit ratio, major adjustments are occurring in the banking systems of the EU Member States, including the Central Eastern European countries. This adjustment process is most pronounced in the Baltic countries, where a decrease in loan-to-deposit ratio is inevitable due to tight liquidity conditions adjustments on the credit side are fostered by insufficient depositing activity. The loan-to-deposit ratio of the Hungarian banking sector remains still high in international comparison; higher ratios are only recorded in the Baltic countries and Slovenia in the Central Eastern European region and Ireland among Member Countries of the euro zone (Chart 2-28).

**In addition to a high degree of underlying uncertainty, there are several factors suggesting a further decline in the loan-to-deposit ratio.** Based on our expectations, the net saving financial position of the private sector will remain in place in 2010 as well and may even strengthen (Table 1-4), suggesting a further decline in the loan-to-deposit ratio. Experience from earlier crises also implies a

Chart 2-28

## Loan-to-deposit ratios in international comparison



Note: IT: Italy, FR: France, NL: Netherlands, AT: Austria, DE: Germany, BE: Belgium, CEE: Central Eastern European region, LV: Latvia, EE: Estonia, LT: Lithuania, SI: Slovenia, HU: Hungary, BG: Bulgaria, RO: Romania, PL: Poland, SK: Slovakia, CZ: Czech Republic

Source: ECB, MNB.

further decline in the loan-to-deposit ratio which remains high in regional comparison (Box 2-2). There is, however, a high degree of uncertainty regarding the rate of decline in the loan-to-deposit ratio, particularly owing to the changes in the structure of household savings; hence, in case of upswing in economic growth lending activity may be stronger.

### Box 2-2: Changes in the loan-to-deposit ratio during financial crises<sup>22</sup>

Prior to the financial crisis, the loan-to-deposit ratio rose at the fastest rate in countries struggling with a currency mismatch and particularly with imbalances. The leverage of the banking system declined significantly following the year of crisis<sup>23</sup>. In countries which experienced a financial crisis, a substantial part of this decline occurs in the first two years and amounts to a total of 15-25 percentage points over five years. It is important to note, however, that the rate fell by 40-60 percentage points from a higher level in countries with a currency mismatch and particularly in countries struggling with external balance problems (Chart 2-29). A similar trend may be observed in connection with the Asian crisis as well. The decline of the loan-to-deposit ratio in these countries was essentially attributed to

the rise in deposits, with smaller adjustment on the asset side. Beyond the balance sheet adjustment in the private sector, the banking sector managed to dampen its reliance on external funds with only moderate adjustments in lending.

In the Scandinavian countries, there was banking crisis in the early 1990s (in Finland and Sweden a currency crisis as well). Both Finland and Sweden applied stringent banking regulations in the 1980s. Competition between banks intensified in reaction to the liberalisation of the financial sector in 1986-1989, accompanied, however, by lack of prudential regulation reform, while banks assumed increasingly high risks. The macroeconomic environment also favoured a rapid growth

<sup>21</sup> At the end of 2009, bank deposits accounted for 40 per cent of the portfolio of investment funds as a result of the decline recorded in the second half of the year, thus only a small portion of new savings managed by investment funds could flow back into the banking system.

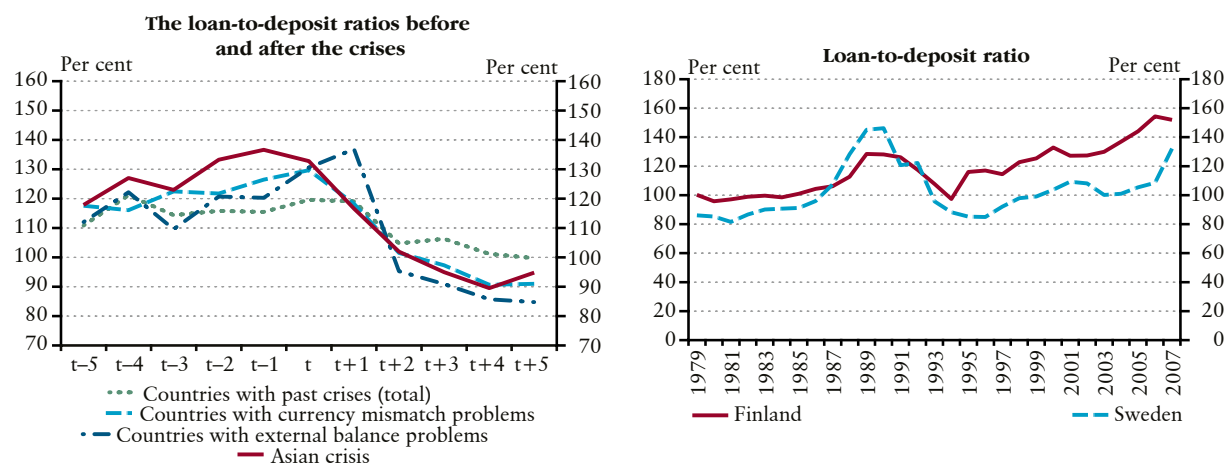
<sup>22</sup> The Box significantly relies on the mimeo entitled "Experience Related to Bank Crises – Macroeconomic Consequences and Management Strategies" authored by Attila Csajbók, Dániel Felcser, Zoltán M. Jakab, Mária Gyöngyi Körömdi, Judit Krekó, Henrik Kucsera, Katalin Szilágyi.

<sup>23</sup> An episode is defined as a banking crisis – in accordance with the classification of the IMF – when the number of bankruptcies significantly rises in the corporate and financial sectors of a country and the companies struggle to pay their debts on time.



Chart 2-29

## Loan-to-deposit ratios in countries undergoing a crisis



Note: *t* indicates the date of the crisis. The sample contains the following countries (year of the crisis and type of risk in brackets) (currency mismatch) in the private sector: CM; external balance problem: EB): Argentina (2001, CM), Bolivia (1984, CM, EB), Brazil (1990), Bulgaria (1996, EB), Chile (1981, CM), Columbia (1998), Croatia (1998, CM, EB), Czech Republic (1996), Ecuador (1998, EB), Estonia (1992), Finland (1991, CM), Indonesia (1997, CM, EB), Japan (1997, CM), Korea (1997, CM), Latvia (1995), Lithuania (1995), Malaysia (1997, CM), Mexico (1994, CM), Norway (1991), Paraguay (1995), Philippines (1997, CM, EB), Russia (1998), Sweden (1991, CM, EB), Thailand (1997, CM, EB), Turkey (2000, CM, EB), Ukraine (1998), Uruguay (2002) Venezuela (1994), Vietnam (1997). The right hand chart shows the indices of Asian countries in the five years following the crisis.

Source: IMF IFS, OECD.

in lending: these countries depreciated their currencies in the early 1980s, competitiveness improved, the global economy grew at a dynamic pace and the terms of trade were favourable as a result of falling oil prices. Budgetary policy was expansive for years, particularly in Sweden. The negative after-tax real interest rate (due to high inflation and tax benefits) made borrowing attractive. Growing demand led to an increase in real estate and share prices (price bubble), triggering a credit boom.

Peaking real estate and share prices, market reactions to imbalances and the rising domestic interest rates foreshadowed the bursting of

the bubble at the end of the 1980s. The loan portfolio declined significantly during the crisis, in the early 1990s, and so did the loan-to-deposit ratio in parallel, resulting in a sharp economic downturn and plummeting home prices. Following a rapid rise, during the crisis in the first half of the 1990s, the loan-to-deposit ratio fell by nearly 60 percentage points in Sweden and 25 percentage points in Finland. The change in loans and deposits contributed to varying degrees to the decline in the loan-to-deposit ratio. While bank deposits increased in Sweden, households in Finland cut their bank savings. This forced banks in Finland to tighten their lending more than in Sweden.

**The volume of external funds decreased only to a very minor extent.** In the autumn of 2008, the banking groups present in the Central Eastern European region substantially increased their subsidiaries' foreign funding. In 2009, the volume of external funding began declining as a result of normalising liquidity and balance sheet adjustments. The volume of external funds remained above levels recorded prior to the crisis in September 2008 only in Hungary and Poland (Chart 2-30). The speed of balance sheet adjustment

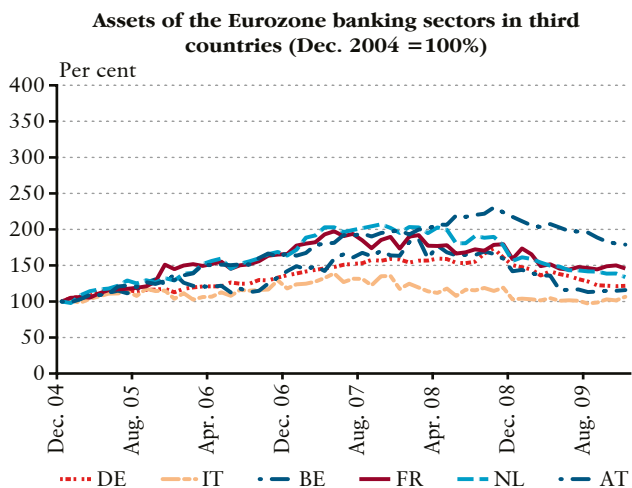
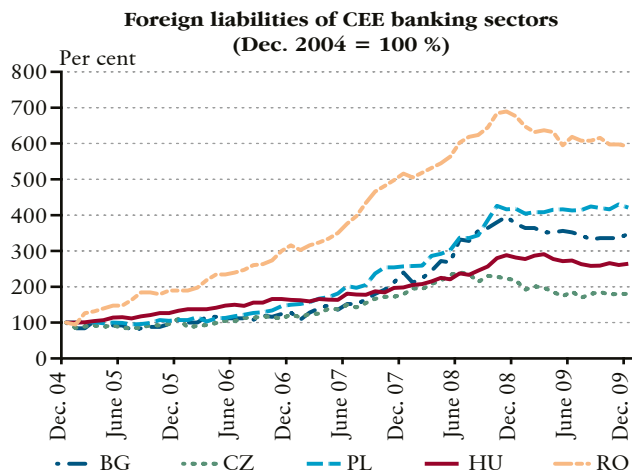
is restrained by the fact that the major parent banks have committed themselves to sustaining their exposure at appropriate levels within the framework of the so-called Brussels procedure.<sup>24</sup> Due to this factor no or only minimal adjustment was observed in the reliance of the banking system on external funds. In case of Hungary, this is attributable to the fact that the banks took over a large share of the financing of the state (central state budget and central bank)<sup>25</sup> (Chart 2-31).

<sup>24</sup> [http://www.mnb.hu/Engine.aspx?page=mnbhu\\_pressreleases\\_2009&ContentID=13393](http://www.mnb.hu/Engine.aspx?page=mnbhu_pressreleases_2009&ContentID=13393).

<sup>25</sup> This process was realised in the stock of two-week MNB bills.

**Chart 2-30**

**Changes in the foreign funding of Central Eastern European (CEE) banking systems and the foreign funding of parent banks' banking systems**



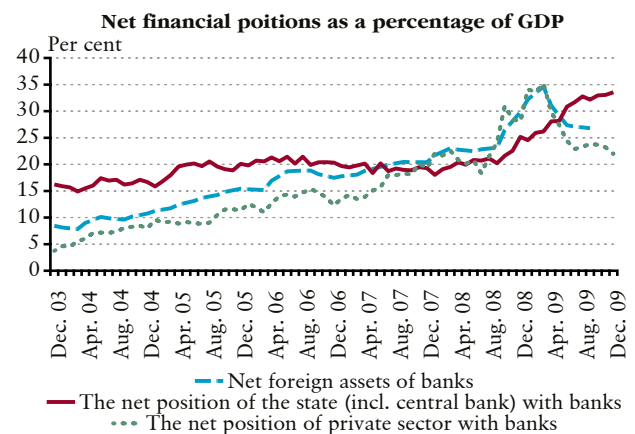
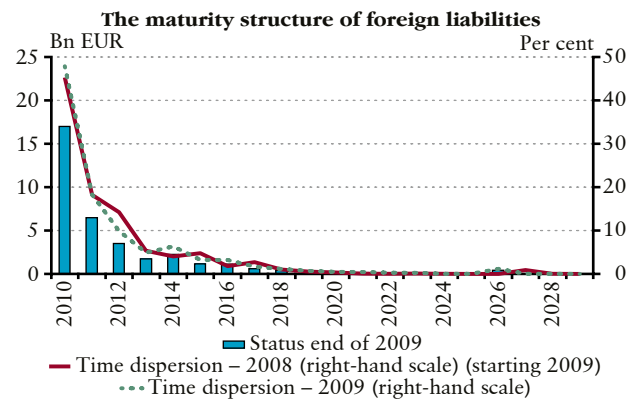
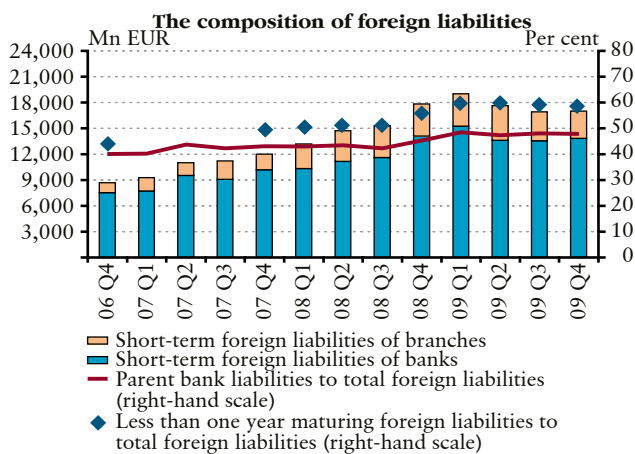
Note: BG= Bulgaria, CZ= Czech Republic, PL= Poland, RO= Romania, HU= Hungary, DE = Germany, IT= Italy, BE= Belgium, FR= France, NL= Netherlands, AT= Austria.

Source: ECB, national central banks.

**Parent bank commitments mitigate the risks arising from the high rate of short-term foreign funding.** At the end of 2009, the rate of short term maturities within foreign funds approached 48 per cent. As a result, the rollover demand of foreign funding remains high; in 2010 the domestic banking system shows a substantial (approximately EUR 17 billion) financing requirement. Parent bank commitments, however, significantly reduce the rollover risks. By the end of 2009, the ratio of funds from owners to external funds rose to 60 per cent. This trend is in correlation with the centralisation of liquidity management within the banking groups, which reduces rollover risks and enables more efficient liquidity management within the group, but also limits the subsidiaries in independent funding from the markets (Chart 2-31).

**Chart 2-31**

**Composition and maturity structure of the external funds of the domestic banking system and net exposure to economic sectors**



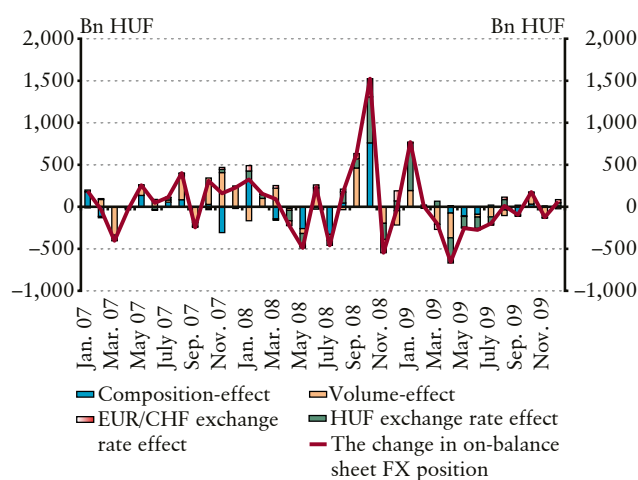
Note: In the stock amount of short-term external funds, liabilities are indicated based on maturity (i.e. funds maturing in one year). In the case of short-term funding, funding maturing in one year is indicated and in the case of maturity structure banking sector level data are indicated (banking sector excluding MFB, Exim and Keler, but containing branches of foreign institutions) The ratio of parent bank funds within external funds indicates the ratio of funds from owners; the figure contains data on banks excluding branches, MFB, Exim and Keler. Including of the central bank in the state is necessary due to the FX loans drawn by the state.

Source: MNB.

Following the crisis exposure of the domestic banking system decreased mainly due to the growth in the volume of foreign currency deposits and the falling volume of foreign currency loans. The change in the on-balance sheet FX position causing swap exposure can be broken down into composition, volume and exchange rate effects. The composition effect leads to a change in the FX swap portfolio if the bank customers, while keeping the amount of assets (loans) and liabilities (deposits) at a stable level, change their denomination structure. If the on-balance sheet FX position and FX swap portfolio grows due to the composition effect, the total assets of the banking system will remain at the earlier level. A volume effect occurs if the on-balance sheet FX position changes in reaction to items which accompany the increase or decrease of the balance sheet total. The exchange rate effect is the result of the change in on-balance sheet FX assets and liabilities and the forint equivalent of the swap portfolio caused by exchange rate fluctuations. The rise in the HUF swap portfolio expressed in forint in the spring of 2009 is attributed to a large extent to the weakening of the forint exchange rate, while the subsequent decline was linked to the strengthening of forint exchange rate. The declining trend of the swap portfolio, however, was mainly the result of the volume effect. The corporate sector and the household sector increased their foreign currency deposits by the middle of the year and by the autumn of 2009, respectively, basically without any reduction in the forint deposit portfolio, which primarily financed forint instruments. The decline in the

**Chart 2-32**  
Development and breakdown of changes in the on-balance sheet FX position of the domestic banking system

(not cumulated)

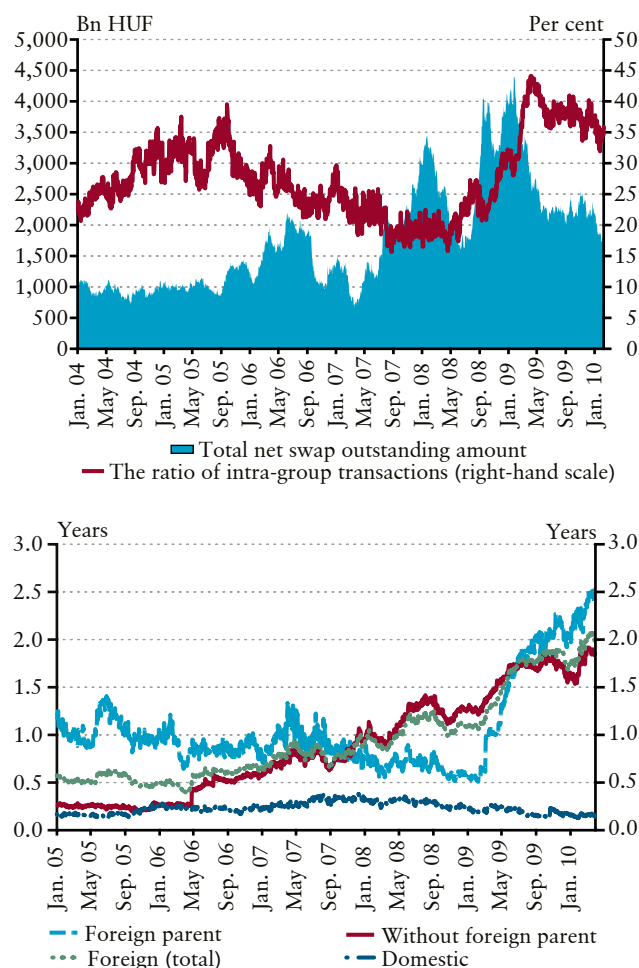


Source: MNB.

foreign currency loan portfolio also played a major role in the closing of the on-balance sheet position. In addition to the above, the swap exposure of the banking system was lowered by the fact that internationally active banks reduced their foreign placements in 2009. In the second half of the year, in parallel with the decreasing speed of on-balance sheet adjustment, the closing of the on-balance sheet FX-position slowed as well (Chart 2-32).

**The rollover risk of FX swaps is reduced by the higher average maturity of transactions compared to previous years and the still active role of parent banks.** The role of parent banks within the gross portfolio remained high

**Chart 2-33**  
FX swap portfolio of domestic credit institutions, rate of intra-group transactions and average maturity by partner type



Note: The portfolio indicates net exposure. The left-hand chart shows the ratio of intra-group transactions to the total gross stock of foreign-owned credit institutions. In the right-hand chart, the average maturity relates to the gross portfolio.

Source: MNB.

level in the second half of the year, but a slight decrease from the previous level of around 45% did begin. This was mainly due to the fact that reliance on parent banks decreased with the expansion of counterparty limits. The

average maturity of the swap portfolio is longer than in previous years, with the cross currency swap transactions concluded with parent banks playing a significant role in this (Chart 2-33).

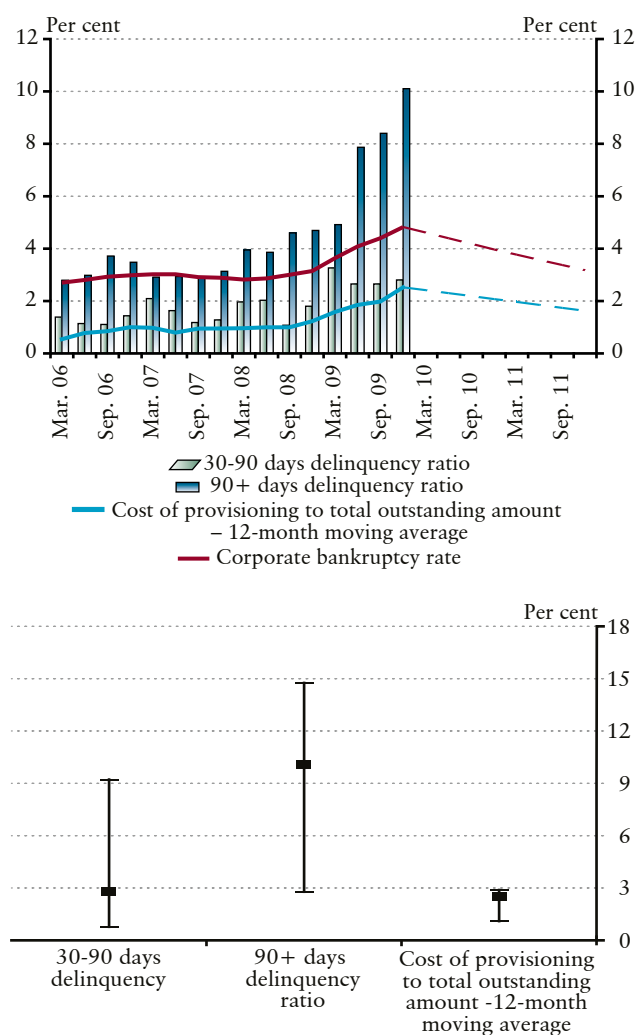
## 2.3 Deteriorating portfolio quality, growing loan restructuring

With the recession in 2009, the quality of the corporate and household loan portfolio of both banks and financial enterprises deteriorated significantly. Loan losses more than doubled, while the rate of restructuring rose sharply as well. By restructuring bad loans and temporarily decreasing debt service burdens, banks can improve the repayment capacity of their clients and mitigate loan losses if the economy recovers quickly. In 2010 H2, according to the baseline scenario the economy will recover and the labour market will stabilise. As a result, the rise in the rate of non-performing loans could slow down in the banking sector and at financial enterprises. Accordingly, we are expecting a continuous decline of loan losses, although their level may continue to be higher than in 2008.

**Losses suffered by banks on the corporate loan portfolio more than doubled in 2009.** The economic recession was also reflected in the rise in the corporate bankruptcy rate from 3.1 per cent to 4.8 per cent. In parallel with this, the rate of non-performing loans (over 90 days overdue<sup>26</sup>) jumped from 4.7 per cent at the end of 2008 to 10.1 per cent by the end of 2009 (Chart 2-34). However, there are major differences among banks, as there are market participants where this value barely reaches 3 per cent, while it approaches 15 per cent for others. The most reliable measure for credit risk, loan loss rate (loan loss provisioning to the portfolio) also rose significantly.<sup>27</sup> The loan loss rate rose from 1.2 per cent to 2.5 per cent (varying between 1 and 3 per cent, depending on specific bank) in 2009, slightly less than the 3 per cent value in our earlier estimate. The main reason for the “underestimation” is that the banks restructured an increasing number of problematic loans in the period under review, thereby mitigating their need for loan loss provisioning (Box 2-3).

**We do not anticipate further significant deterioration of the portfolio in the corporate sector in 2010, and the loan losses of banks may decline.** Although the recovery of the Hungarian economy may lag behind the pace of the developed countries, we are nevertheless expecting moderate economic growth in 2010 H2. In this period a reversal is also expected in the lending activity. The rate of corporate bankruptcies may peak in 2010 H1, followed by a decline. In harmony with the above trend, the losses suffered this year on the corporate loan portfolio

**Chart 2-34** Major quality indicators of banks' corporate portfolio and their distribution



Note: On the right-hand chart, in calculating the minimum and maximum values, we only considered banks with a market share of over 5 per cent based on the balance sheet total.

Source: MNB.

could decrease, but may remain higher than in 2008. This forecast is more favourable than our earlier expectations. It is essentially supported by two key factors: losses in 2009 were lower than expected and the economic outlook has become more favourable.

<sup>26</sup> In case of an installment is 90 days overdue, all of the outstanding loans of the given customer are considered to be non-performing (cross-default).

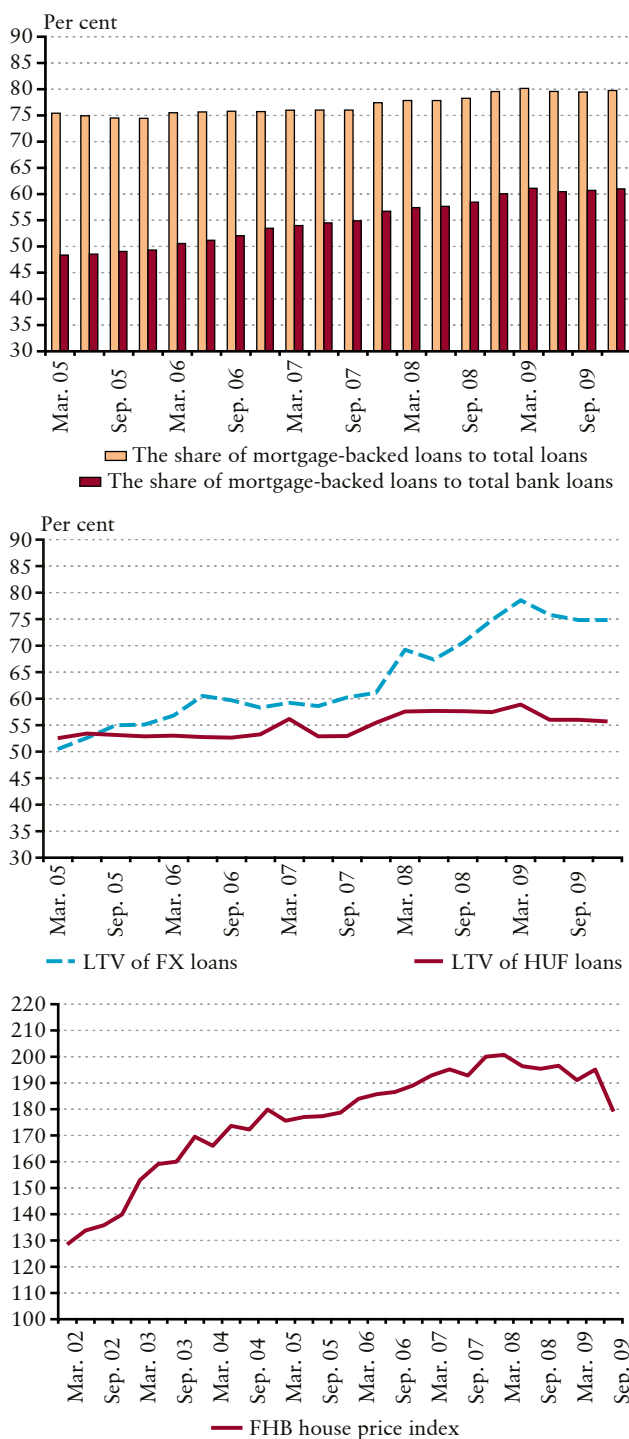
<sup>27</sup> See in more detail: Tamás Balás: Comparison of the indicators describing the loan portfolio quality of the banking sector (Background paper III), November 2009. [http://english.mnb.hu/Resource.aspx?ResourceID=mnbfile&resourcename=stabil\\_3\\_balas\\_200911\\_en](http://english.mnb.hu/Resource.aspx?ResourceID=mnbfile&resourcename=stabil_3_balas_200911_en).

**The creditworthiness of households worsened as a result of the combined impact of deteriorating financial and macroeconomic factors.** In 2009 H1, the HUF exchange rate substantially depreciated, significantly increasing the debt service burden of households which are mainly indebted in foreign currency. This impact was further aggravated by the rise in bank financing costs and their appearance in lending rates. Financial conditions improved gradually during the year, but negative economic effects came to the fore. The domestic rate of unemployment exceeded 10 per cent and real income declined, reducing clients' ability to repay debt. In relation to expected losses, trends in the loan-to-value ratio are also a key factor, as 80 per cent of household bank loans are mortgage loans. The rapid rise in the LTV ratio of mortgage loans witnessed in the past (particularly in relation to foreign currency loans) stopped in 2009. At the end of 2009, the average LTV ratio of foreign currency loans approximated 75 per cent and 50 per cent in relation to forint loans (Chart 2-35). Although the LTV ratio is relatively low, the present fall in home prices reduces coverage due to the revaluation of collateral. As an additional risk, the banks may sell the collaterals of defaulted debts, causing a significant drop in real estate prices. However, due to the depressed prices banks prefer to avoid fire-sales of collaterals.

**The household loan portfolio deteriorated and the resulting losses rose significantly in the banking system.** The weakening creditworthiness of households was also manifested in the deterioration of the banks' loan portfolio in the past year. The rate of non-performing loans (over 90 days overdue) within the total loan portfolio was twice as high as the level in 2008 and approached 8 per cent. The ratios among major banks were spread in a range of 6-16 per cent. The loan loss rate also more than doubled (spread in the 1-6 per cent range) to 2.5 per cent in one year (Chart 2-36). Similarly to the corporate sector, the figure is more favourable than we previously estimated due to restructuring.

**In 2010, loan losses may decline in relation to household loans.** According to the macroeconomic baseline scenario, the unemployment rate may peak in the middle of 2010. Although real incomes may decline further, the pace is expected to be slower than last year. Thus the repayment capacity of households will worsen to a lesser extent than in the previous year. Based on the macroeconomic forecasts, we are therefore anticipating a flattening upward trend in the rate of non-performing loans. Due to extensive

**Chart 2-35** Average LTV ratio of household loans in the banking system and home prices

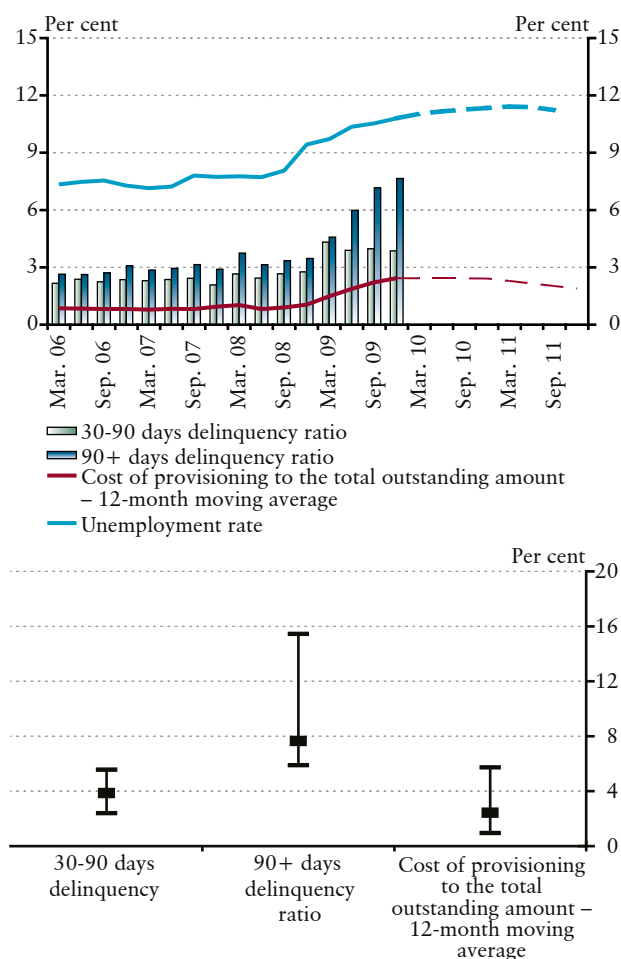


Note: In relation to the FHB home price index, the 2001 annual average = 100. The extreme value of the LTV ratio in March 2009 was caused by the significant weakening of the exchange rate  
Source: MNB.



**Chart 2-36**

**Major quality indicators of the credit institutions' household portfolio and their distribution**



Note: In the right-hand chart, in calculating the minimum and maximum values, we only considered banks with a market share of over 5 per cent based on the balance sheet total.

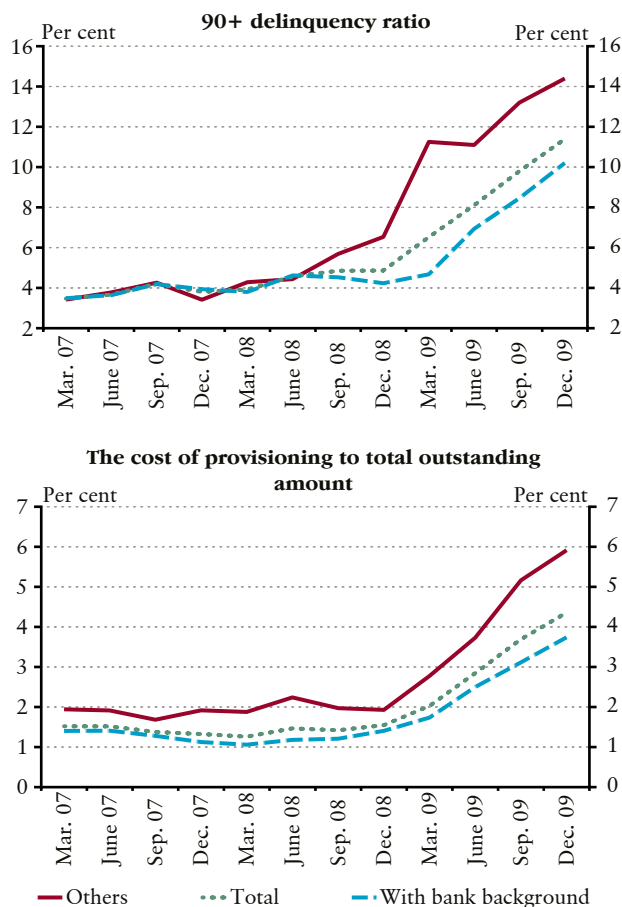
Source: MNB.

credit restructuring (Box 2-3) and the low ratio of selling bad loans, the household loan portfolio may be cleaned up at a relatively slow pace, and as result the ratio of non-performing loans may remain high for a long period of time.<sup>28</sup> The rate of loan losses may also decline at a gradual pace, but its level will continue to significantly exceed the level of the year 2008.

**Financial enterprises were characterised by a rapidly deteriorating portfolio and loan losses exceeding the losses of banks.** Vehicle purchase loans represent a substantial portion in the portfolio of financial enterprises.

**Chart 2-37**

**Portfolio quality of financial enterprises**



Note: We excluded factoring companies in relation to the ratio of loans overdue by over 90 days and the coverage ratio, as these would significantly distort data due to their specialised activity.

Source: MNB.

With a decline in vehicle sales, the number of new clients is significantly less than recorded in the previous years, while the fall in incomes led to a steep rise in the number of those defaulting on their loans. Repayment willingness related to these loans also decreased considerably in comparison to mortgage loans. As a result of the above factors, in the case of financial enterprises, the rate of non-performing loans jumped from 5 per cent to over 11 per cent and loan losses rose from 1.5 per cent to approximately 4.5 per cent in 2009. Both of these indicators for financial enterprises without banking background are higher than in the case of banks. While the rate of loans overdue by over 90 days reached 10.2 per cent in the portfolio of bank owned enterprises, this

<sup>28</sup> Ratio of non-performing loans can decrease without credit expansion if non-performing loan become performing again or if the banks write down or sell them.

figure was 14.4 per cent in relation to non-bank owned enterprises. A similar difference is observed in relation to loan loss provisioning: the rate is 3.7 per cent for the former and 5.9 per cent for the latter (Chart 2-37). Bank-owned financial enterprises contributed significantly to

the loan losses of the banking groups. At the same time, financial enterprises without a banking background also indirectly substantially increase the credit risks in the banking system, as these financial enterprises are predominantly financed by resident banks<sup>29</sup>.

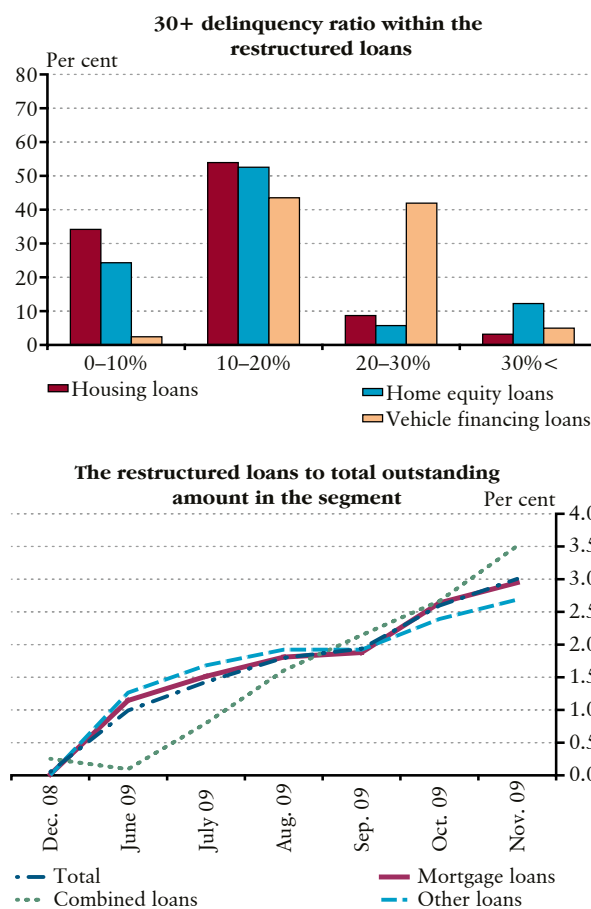
**Box 2-3: Restructuring of loans**

In the course of the financial crisis, banks have reinforced their workout activity and supported the repayment capacity of their customers by restructuring of loans. Restructuring may include extending the maturity, temporarily modifying lending terms (e.g. reducing instalments for a temporary period) or even rescheduling principal repayments. Three factors can determine a bank's procedures, and the provisioning policy applied to restructuring caused by existing or potential loan repayment problems: firstly, expectations related to the recovery of customer solvency; secondly, profitability factors related to provisioning; and thirdly, the necessary prudent, cautious approach.

In 2009, the ratio of restructured loans to the total bank loan portfolio increased significantly, reaching 1.5 per cent for corporate customers and over 3 per cent for households. According to the MNB lending survey<sup>30</sup>, restructuring does not offer a final solution in many cases. On the basis of banks' experience, we may establish that the ratio of delinquencies within restructured loans is not negligible in relation to certain types of loans. Half of the banks estimate the ratio of "redefaults" at 20-30 per cent in relation to vehicle purchase loans, while the majority observed a 10-20 per cent ratio in connection with mortgage backed loans (Chart 2-38).

The rise in restructuring has also attracted attention to the deficiencies in provisioning regulations relating to restructured transactions. In the past, the law set out the necessary provisions only on the basis of anticipated loss and collateral and failed to take into account that in the case of restructured transactions, the value of these is quite uncertain; thus the government decree permitted lower-than-necessary provisioning. Pursuant to the amendment of Government Decree 250/2000. (XII. 24.), effective as of 1 January 2010, restructured loans may not be rated in a more favourable category after restructuring; moreover, these may receive a rating better than 'substandard' only in special cases. They are qualified as "problem-free" only upon joint fulfilment of three conditions: possibly anticipated future losses – not probable at the time of restructuring – are fully covered; the future principal and interest

**Chart 2-38** Distribution of redefaulters among banks after restructuring and ratio of restructuring to the total credit portfolio in relation to households



Source: MNB.

repayment capacity of the debtor is satisfactory under the revised, new repayment terms; in the 365 days from restructuring, the debtor does not default for a period of over 15 days or 30 days in relation to households.

<sup>29</sup> Financial enterprises without a banking background represent only 3 per cent of total banking system in terms of total assets, and only 6 per cent in terms of claims on customers.

<sup>30</sup> Senior Loan Officer survey on bank lending practices (February 2010), MNB, [http://www.mnb.hu/engine.aspx?page=mnbh\\_hitelezesi\\_felmeres&ContentID=13740](http://www.mnb.hu/engine.aspx?page=mnbh_hitelezesi_felmeres&ContentID=13740).



## 2.4 Low market risks

The currency swap market continues to play a key role in hedging the on-balance sheet exchange rate risk of the domestic banking system, which is decreasing but remains high. The smooth operation of this market is crucial to the stability of the banking system. The majority of domestic banks maintain their total open FX position at a consistently low level, with the exception of banks with foreign subsidiaries. The interest rate risk of the banking system still falls in a moderate range. With the decline in yields since the spring of last year, appreciation of the government securities portfolio has increased the profits of the domestic banking system.

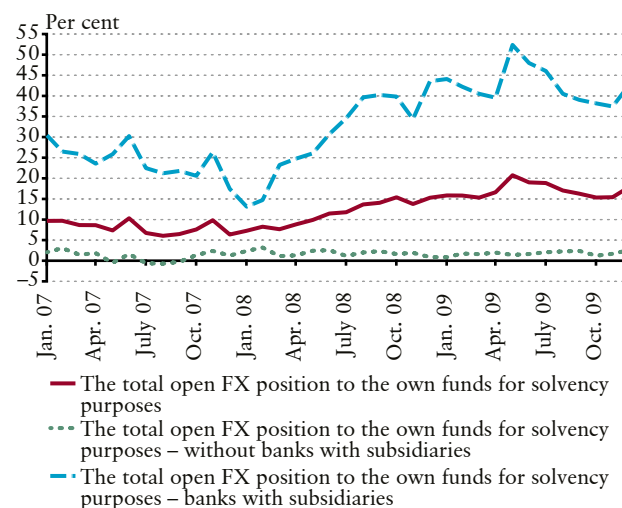
**With the exception of banks with foreign subsidiaries, the domestic banking system as a whole keeps its total open FX position at a stable, low level, which requires the smooth operation of the FX swap market.**

With the exception of banks with foreign subsidiaries, the majority of domestic credit institutions managed to almost fully hedge their on-balance sheet exchange rate exposure, basically using currency swap transactions (Chart 2-39). Since the spring of 2009, the costs and risks related to hedging have decreased in parallel with the stabilisation of the FX market's operation and the closing of the on-balance sheet FX position. This is reflected by the fact that implied yields approximated money market yield levels and the average maturity of transactions rose compared to the beginning of the year. The total open FX position of banks with foreign subsidiaries, however, is significant due to the fact that capital investments in other members of the banking groups are not hedged with swap transactions.

**The interest risks of the banking system are still not high.** In the case of the forint, the cumulated re-pricing gap<sup>31</sup> is in the negative range. Therefore, according to this indicator interest rate hikes could increase earnings risks. Following an adjustment with interest rigid sight deposits the re-pricing gap is almost closed, so a change in forint base rates has no significant effect on the profitability of the banking sector in short term. The euro and US dollar re-pricing gap is negative approximating zero, while the Swiss franc is positive, slightly higher than the annual average of the previous year.<sup>32</sup> The re-pricing gap showed a

Chart 2-39

### Total open position of the banking system



Note: The total open FX position corresponds to the sum of the on-balance sheet foreign currency assets and the off-balance sheet foreign currency receivables net of on-balance sheet foreign currency liabilities and off-balance sheet foreign currency debts. The chart includes end-of-month data.

Source: MNB.

moderate decrease in the final quarter in the case of all three foreign currencies.

**As a result of declining forint yields since the spring of last year, the banking system realised strong profits on government securities in 2009.** The capital market exposure of the banking system accounts for 8-10 per cent of total assets composed predominantly of government securities (Chart 2-40). The vast majority of the HUF-denominated government securities portfolio, roughly 80 per cent, is of longer maturity. A persistent and substantial decrease in forint yields could result in a significant profit increase for the banking system on the government bond portfolio. The extent of this profit depends on the share of exposure hedged by interest rate swaps and other derivatives and the accounting standards applied by the banks. Accordingly, due to decreasing yields and narrowing interest rate swap spreads, the banking system realised a significant profit. The cumulated losses resulting from the revaluation

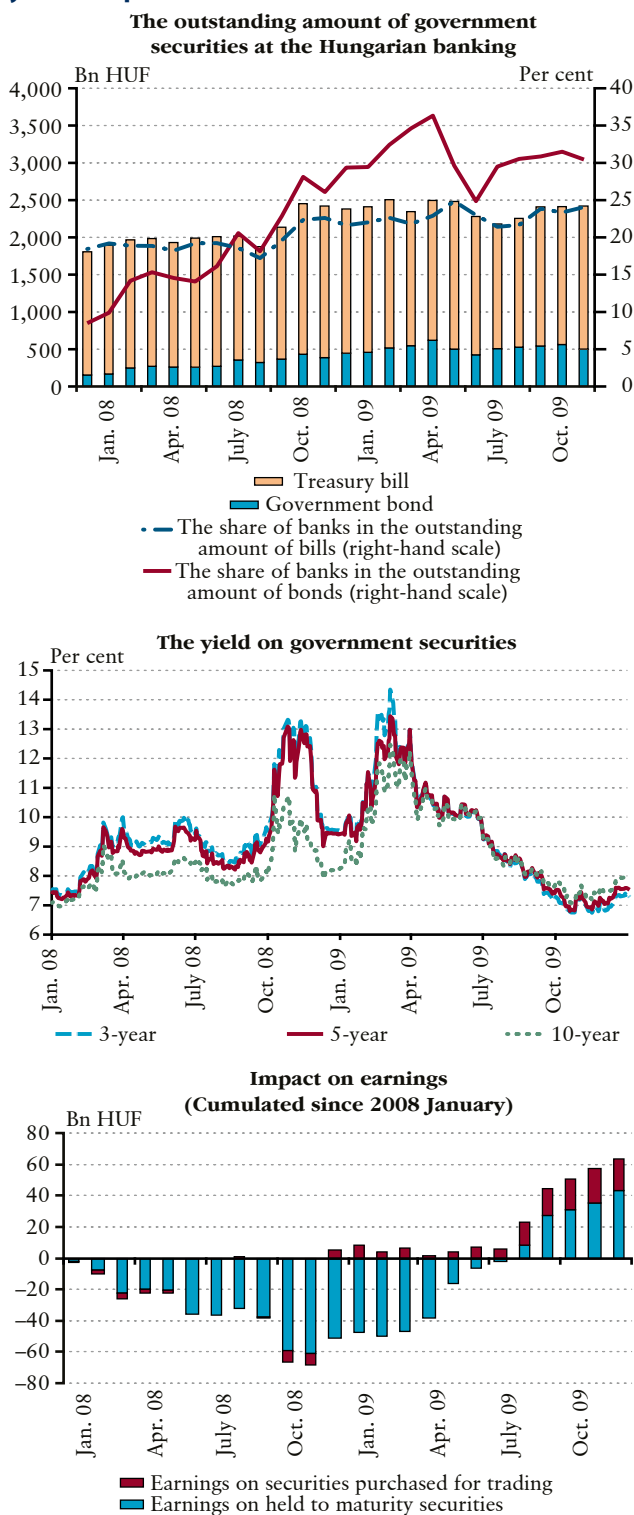
<sup>31</sup> The re-pricing gap shows the difference between re-priced assets and liabilities within 90 days in proportion to the balance sheet total, including on-balance sheet and off-balance sheet items as well. The negative gap increases profitability upon an interest rate cut and decreases it upon an interest rate hike.

<sup>32</sup> The re-pricing gap is positive in the case of the Swiss franc mainly as a result of loans with variable interest.

of the portfolios peaked in November 2008; thereafter the profits realised by the banking system were higher than the losses accumulated during the turmoil on the government securities market in the spring of 2008, the crisis in October 2008 and the rise in yields in the spring of 2009.

**An exchange rate shock and an extreme interest rate shock do not have significant impact on the capital position of the banking system through the exposure to market risks.** An exchange rate shock (15 per cent depreciation of the forint exchange rate) has a positive impact on the profitability of the domestic banking system. Ceteris paribus, in the case of banks with long total FX position, it might increase the profit by 2.5-3.5 per cent of their own funds, and in the case of banks with short total FX position, it might decrease the profit by 0.3-0.6 per cent<sup>33</sup>. The former group of banks represents a higher share in the own funds of the whole banking system. An extreme interest rate shock, i.e. a parallel upward shift (500 basis points in case of forint, 200 basis points in case of Swiss franc, euro and dollar) of the yield curve results in maximum 6-7 per cent losses as a percentage of own funds in the case of the forint, while 0.5-2 per cent profit in the case of other currencies (See Macroprudential indicators, Chart 40 and Chart 42). Accordingly, the banking system is sensitive to the government bond market development, market disturbances can cause significant impact on profitability, but it would not endanger banking sector's solvency position.<sup>34</sup>

**Chart 2-40**  
**Government securities market exposure of the domestic credit institution sector and effect of yields on profit**



Source: MNB, ÁKK.

<sup>33</sup> Naturally exchange rate depreciation can deteriorate the overall profitability of banking sector via credit risks.

<sup>34</sup> The exchange rate shocks applied in the partial market risk stress tests are in line with the shock scenario of the credit risk stress test, while interest rate shock is higher than in credit risk stress test.

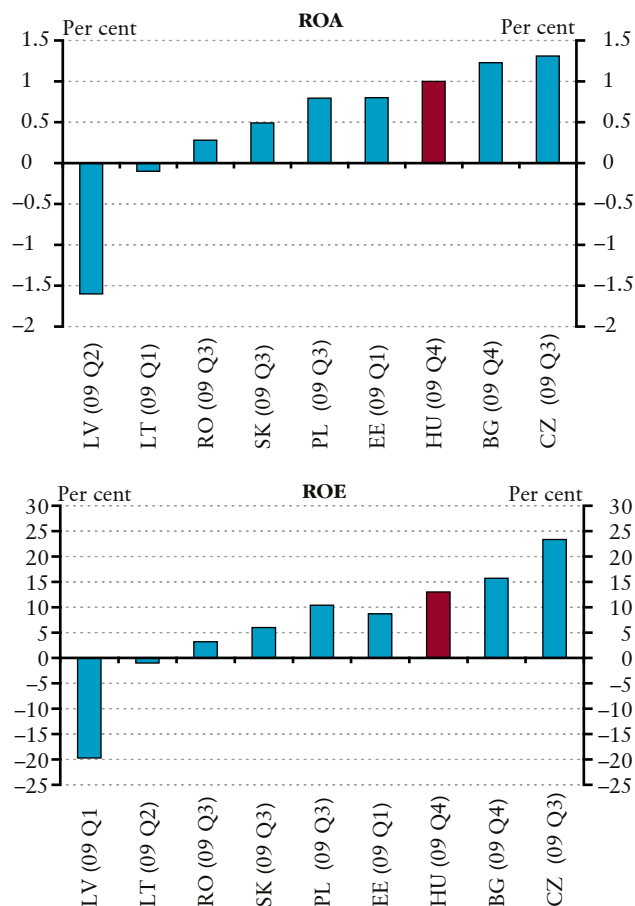
## 2.5. High profitability, strong capital position

In 2009, the banking sector profit increased slightly compared to 2008, notwithstanding the growing volume of provisions, particularly as a result of the temporary increase of net profit on financial operations, and to a lesser extent, the rise in net interest income. The rise in net interest income may be attributed to the fact that banks were able to pass on some of the growing risk premia to existing customers. Behind the high profitability there is significant asymmetry; the market share of banks with lower profits increased. The current level of profitability will be difficult to maintain in 2010, as provisioning may remain high, while the net profit on financial operations may decline significantly. In 2010, the banking sector will be able to sustain profitability only by increasing net interest income. They can increase their net interest income via lending more to new good-quality customers, widening the interest margin for existing customers, while expenditures can be reduced with cuts in cost. The capital adequacy of the banking sector is satisfactory, and is high even in international comparison.

**In 2009, the domestic banking sector was able to absorb the substantially growing loan losses.** In 2009, the banking sector realised a pre-tax profit of HUF 306 billion, up roughly 5 per cent on the result of HUF 290 billion for 2008. This figure significantly exceeds the amount of HUF 100-200 billion forecasted in the previous Report<sup>35</sup>, primarily as a result of the exceptional earnings related to financial operations. The pre-tax 1 per cent ROA (return on assets) and 13 per cent ROE (return on equity) indicators are similar to that of 2008, and are considered as a good performance in international comparison (Chart 2-41).

**The extraordinary profitability is characterised by asymmetric distribution in the banking sector.** The profitability of most banks worsened, while some major banks and subsidiaries achieved above-average profits. As a result, the average level of ROE remains basically unchanged compared to 2008, but it was accompanied by a significant rise in standard deviation among banks. The share of unprofitable banks and banks with low profitability weighted by balance sheet totals increased; hence in case of some above average performer banks of 2008 the profit also declined (Chart 2-42). Therefore only few banks are able to internally accumulate capital, i.e. increase capital adequacy from profit.

**Chart 2-41 Profitability position of the domestic banking sector in regional comparison**



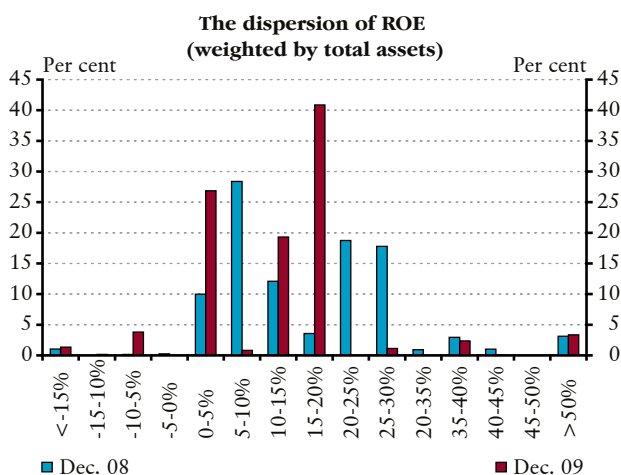
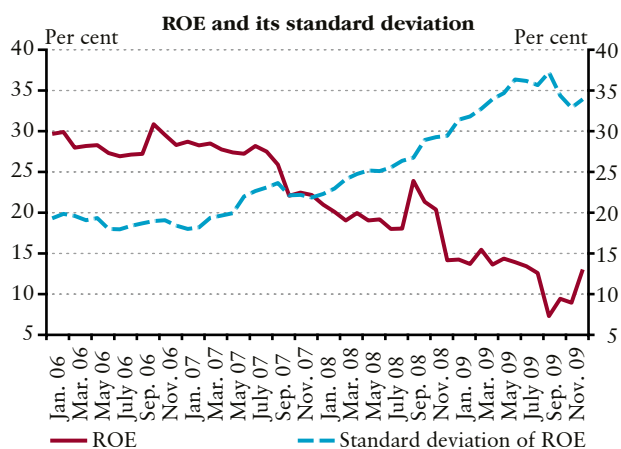
Note: LV: Latvia, LT: Lithuania, RO: Romania, SK: Slovakia, PL: Poland, EE: Estonia, HU: Hungary, BG: Bulgaria, CZ: Czech Republic.  
Source: National central banks, MNB.

**Increasing provisioning was offset by profits on financial operations.** Major restructuring took place in the structure of the profit and loss account in 2009: net interest income grew by 16 per cent on the revenue side, net profit on financial operations doubled, while net commission income remained unchanged. The extraordinary net profit on financial operations was mainly the result of trading profit on securities available for sale and held to maturity. Operating expenses were slightly below the values recorded for 2008, and thus banks were able to cut their costs. Loan loss provisioning

<sup>35</sup> Report on Financial Stability, April 2009, section 2.1.4.

**Chart 2-42**

**ROE indicator of the banking sector, standard deviation and dispersion by total assets**

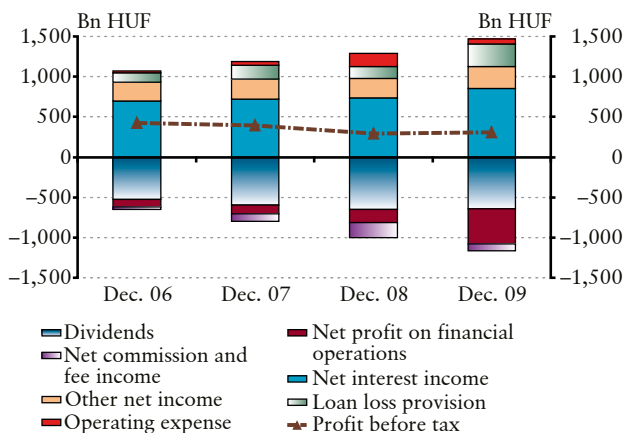


Note: ROE (12-month rolling pre-tax profit/ (12-month average shareholders' equity – profit or loss for the financial year)).

Source: MNB.

**Chart 2-43**

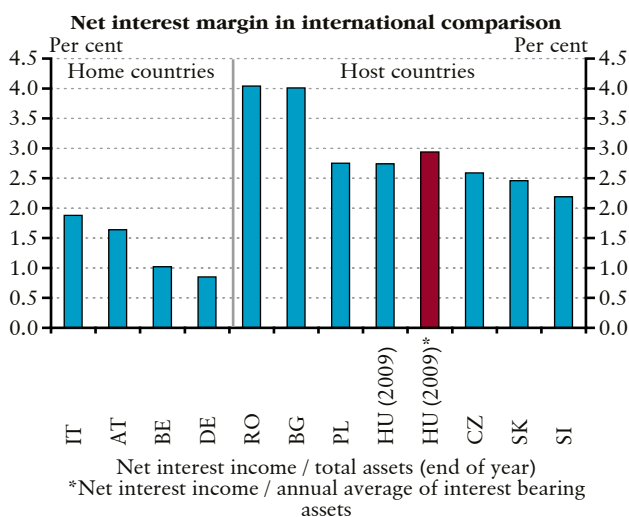
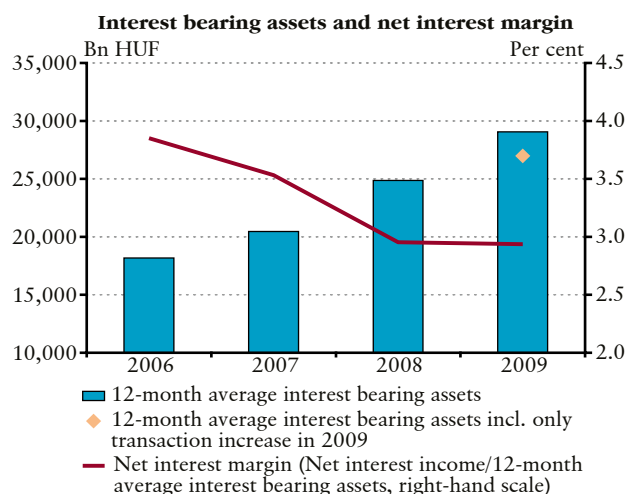
**Major income statement items of the banking sector**



Source: MNB.

**Chart 2-44**

**Changes in the net interest margin**



Note: IT: Italy, AT: Austria, BE: Belgium, DE: Germany, LV: Latvia, LT: Lithuania, RO: Romania, SK: Slovakia, PL: Poland, EE: Estonia, HU: Hungary, BG: Bulgaria, CZ: Czech Republic.

Source: MNB, ECB EU Banking Sector Stability (August 2009).

rose dynamically. The exceptionally high amounts of dividend income and other expenditure items are generally linked to one-off transactions (Chart 2-43).

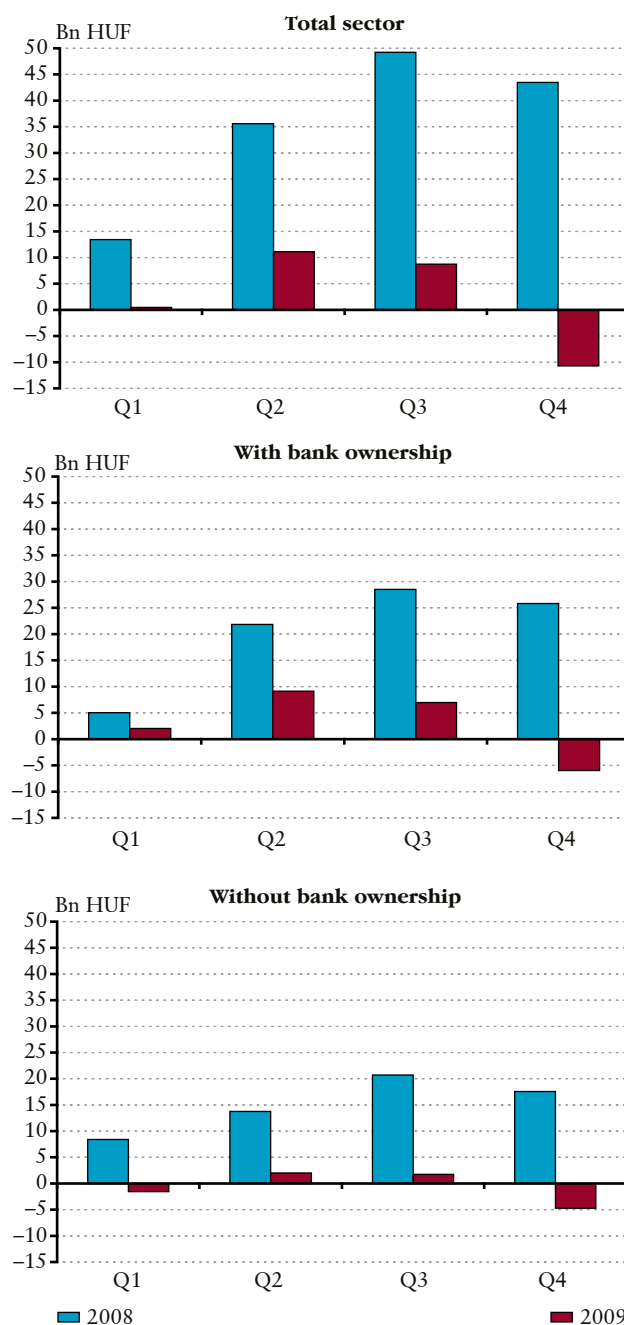
**The rise in net interest income was caused by the increase in interest bearing assets, while the net interest margin remained unchanged.** The net interest margin was 2.9 per cent at the end of 2009, basically corresponding to the figure for the previous year (Chart 2-44). The domestic net interest margin continues to significantly exceed the margins applied in parent banks' countries, and ranked average in comparison to countries in the region. The volume of interest bearing assets in the

domestic banking sector increased, generally due to three factors. Approximately half of the rise compared to 2008 is the result of the weaker forint exchange rate in 2009<sup>36</sup>; the other half is linked to substitution effects: although the loan portfolio decreased, growing liquidity resulted in a rise in government debt securities to a lesser extent, and in the central bank securities portfolio to a greater extent. In view of the fact that the interest rate levels of government securities and central bank securities are lower than that of loans and banks could not earn interest income on increasing non-performing loans, we can assume that the interest margin of performing loans rose. This may mean that the banks passed on some of their rising risk premia to existing customers.

**The pre-tax profit of financial enterprises deteriorated significantly.** The profits of bank-owned and non-bank owned financial enterprises were negative, the sector as a whole accumulated pre-tax profit amounted to HUF 11 billion (Chart 2-45). Nearly half of bank-owned financial enterprises were unprofitable at the end of 2009; at some of these, the shareholder banks were forced to recapitalise them.

**In 2010, the profit of the banking sector may be low as a result of disappearing one-off profit items and the continuing high rate of provisioning.** We consider the high net profit on financial operations to be a one-off factor, and thus it will be more difficult for the banks to offset the still high rate of loan loss provisioning in 2010. A fall in profitability is expected, but this runs contrary to the expectations of banks themselves (Box 2-4). A possible rise in lending activity resulting from owners' expectations may improve profitability. The rise in revenues, however, may be limited by the narrow range of good quality borrowers. The banking sector could achieve a higher volume of new originations by lending to customers of poorer quality, but this would lead to deteriorating quality of the portfolio. The banks could raise the margins of existing customers, but increase in lending costs may result in further deterioration in the loan portfolio. Rationalisation of operating expenses could be a third option, but we estimate that this could only compensate loan losses to a limited extent.

**Chart 2-45**  
**Pre-tax profit of financial enterprises**  
(2008–2009)



Source: MNB.

<sup>36</sup> Since net interest income is expressed in forint, in the event of a weaker forint exchange rate and net foreign currency assets, net interest income expressed in forint also increases.

**Box 2-4: Business expectations of domestic banks in 2010**

In the framework of the practice of Market Intelligence conducted since 2008, in February and March the MNB surveyed the 7 largest domestic commercial banks and two branches of foreign banks active on the financial markets to know the key cornerstones of their business plans relating to 2010 and their expectations. Business planning is still overshadowed by a high degree of uncertainty, but growth and profit targets are already emerging due to the strengthened liquidity and solvency positions.

The surveyed banks expect slow growth in the balance sheet total, a moderate rise in lending to households and non-financial enterprises and further tightening on lending to financial enterprises. On the deposit side, the banks expect the increase in corporate and financial enterprise deposits (partly managed by investment funds) to be greater than in the previous year. However, market participants expect a slowdown in the rise of household deposits. On the whole, a further decline in the loan-to-deposit ratio is expected. With regard to

**Table 2-3****Target figures of banks for 2010**

<b>Mutatós számok</b>	<b>End of 2009 value</b>	<b>Target interval for end of 2010</b>
<b>I. Balance sheet developments</b>		
<b>1. Increase of balance sheet total (y-o-y growth in per cent)</b>	<b>2.2%</b>	<b>0.9%</b>
<b>2. Growth targets for credits (y-o-y growth in per cent):</b>		
a. Households	0.1%	0.9%
b. Non financial corporations	-7.1%	6.4%
c. Financial corporations	-20.1%	-8.3%
<b>3. Growth targets for deposit taking (y-o-y growth in per cent):</b>		
a. Households	6.0%	3.5%
b. Non financial corporations	-1.7%	6.3%
c. Financial corporations	-18.1%	4.8%
<b>4. Loan-to-deposit ratio (change in percentage point)</b>	<b>-17 percentage points</b>	<b>-1,8 percentage points</b>
<b>II. Portfolio quality</b>		
<b>1. Ratio of non-performing loans to total loans (per cent)</b>		
a. Households	7.2%	8.7%
b. Non financial corporations	10.1%	10.5%
c. Loans total	6.2%	7.4%
<b>2. Newly allocated provisioning (as percentage of outstanding loan amount)</b>		
a. Households	2.5%	2.6%
b. Non financial corporations	2.5%	2.1%
c. Loans total	1.6%	1.6%
<b>III. Profit</b>		
Profit before tax (HUF billion)	306 bn HUF	334 bn HUF
ROA (%) (before tax)	0.97%	1.1%
ROE (%) (before tax)	13.0%	12.5%
<b>IV. Capital position</b>		
Growth in Risk Weighted Assets total (y-o-y change, in per cents)	-6.8%	1.5%
Capital adequacy ratio	12.9%	13.5%

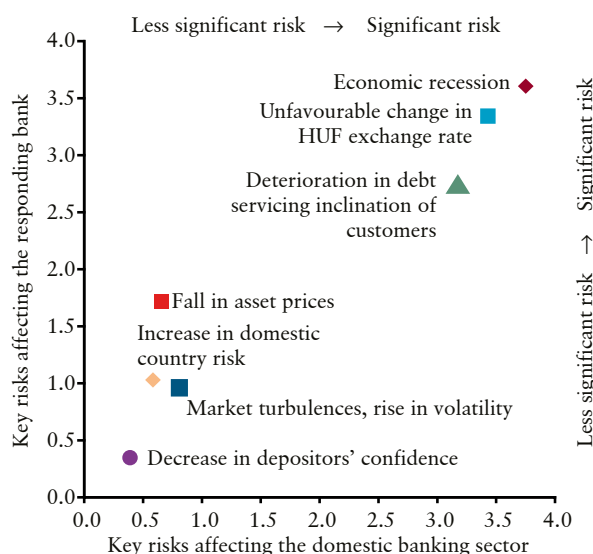
*Note: Individual plans weighted by balance sheet total. The fact and forecast data relate to the end of the year.*

*Source: MNB's Market Intelligence survey.*

portfolio quality, in 2010 they expect a rise in the ratio of loans overdue more than 90 days for households' and non-financial corporations' portfolio as well, but a slowdown in the pace of deterioration is expected by the banks. The need for new provisioning in connection with lending to non-financial enterprises may be lower. According to banks' plans, provisioning for total loans may remain at end-2009 levels, due to further portfolio deterioration expected in relation to loans to households and financial enterprises. The market players plan a return to normal operations and in parallel target maintaining profitability at unchanged levels (Table 2-3).

We surveyed what the given institutions regard as key risks from the point of view of the domestic banking sector and their own bank. The results suggest that the highest risks are economic recession, an unfavourable change in the HUF exchange rate and the deterioration in debt servicing inclination of customers (Chart 2-46). The rising country risk of Hungary, mounting market volatility, the fall in asset prices and the possible decline in depositor confidence are smaller, but nevertheless substantial risk factors.

**Chart 2-46**  
**Results of Market Intelligence survey on risks characterising the year 2010**



*Note: The banks were required to select and rank the top 5 risks in their responses. Average values weighted by balance sheet total.*

*Source: MNB Market Intelligence survey.*

**Table 2-4**

**Results of Market Intelligence survey on risks characterising the year 2010**

Az egyes kockázati tényezők említésének aránya relatív piaci részesedéssel súlyozva

	Key risks affecting the domestic banking sector	Key risks affecting the responding bank
Economic recession	92	92
Fall in asset prices	28	57
Unfavourable change in HUF exchange rate	87	87
Deterioration in the repayment inclination of customers	99	100
External and internal capital accumulation constrains	12	12
Drying-up of external liabilities	16	1
Change in parent bank's behaviour	1	12
Swap market turbulences	1	1
Change in the potential instruments of domestic monetary policy	0	0
Decrease in depositors' confidence	8	7
Market turbulences, rise in volatility	44	33
Increase in domestic country risk	53	53
Change in the potential instruments of eurozone members' fiscal policy and ECB ("exit strategies")	26	11
Contagion risks within the Eastern-central European region	11	13
Unemployment	11	11
Uncertainties in the economic policy	10	10

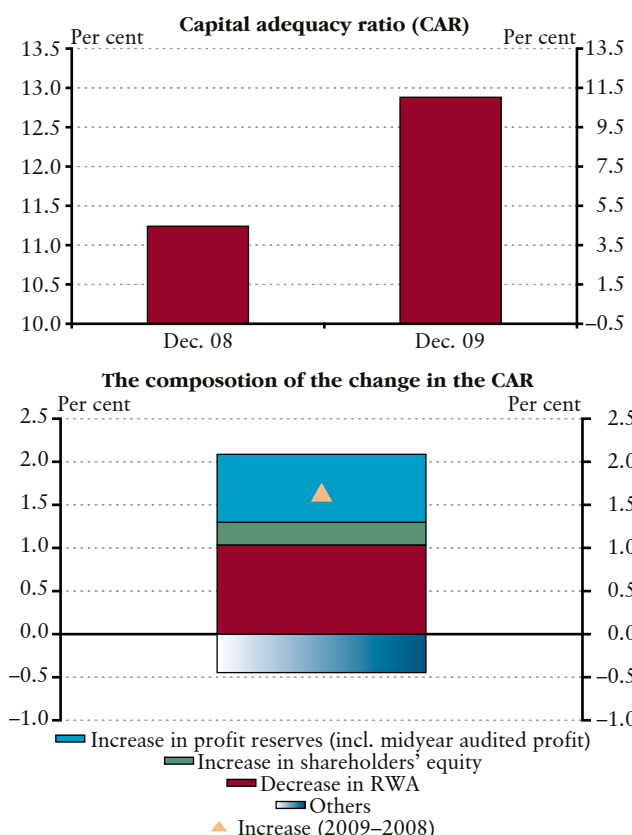
*Note: The banks were required to select and rank the top 5 risks in their responses. Average values weighted by balance sheet total.*

*Source: MNB Market Intelligence survey.*



**Chart 2-47**

**Capital adequacy ratio of the banking sector in 2008-2009 and decomposition of its change**

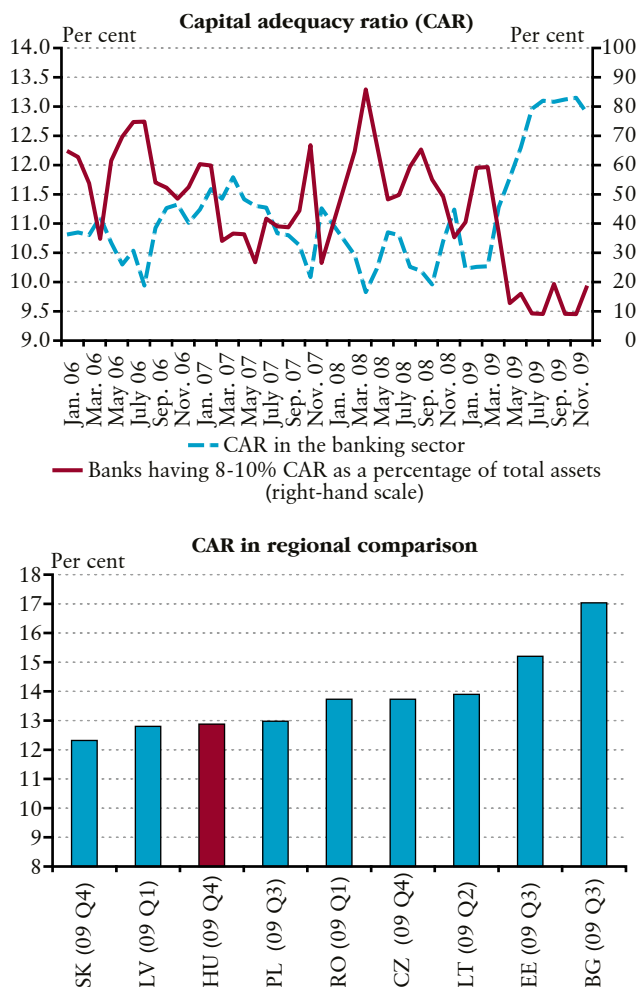


Source: MNB.

The capital position of banks<sup>37</sup> is adequate, the capital adequacy ratio<sup>38</sup> rose by 1.6 per cent to 12.9 per cent by the end of 2009. A decline in risk weighted assets (RWA) contributed by 1 percentage point, the reinvestment of profit by 0.8 percentage points and the capital raise by parent banks by a total of 0.3 percentage points to this increase. Other effects reduced the capital adequacy ratio by nearly one half of a percentage point (Chart 2-47). The Tier 1 capital adequacy ratio of the banking sector approached 11 per cent by the end of 2009. In 2010 we expect a further rise in the capital adequacy ratio, moving close to 14 per cent, in parallel with a decline in the loan portfolio of the private sector.

**Chart 2-48**

**Capital adequacy of the banking sector**



Note: LV: Latvia, LT: Lithuania, RO: Romania, SK: Slovakia, PL: Poland, EE: Estonia, HU: Hungary, BG: Bulgaria, CZ: Czech Republic. Source: MNB, ECB EU Banking Sector Stability (August 2009).

The market share of banks with a capital adequacy ratio of 8-10 per cent dropped significantly. As a favourable phenomena at individual bank level, the ratio of banks with a capital adequacy ratio of 8-10 per cent fell from 40-60 per cent to 20 per cent (Chart 2-48). In a regional comparison, the aggregate capital adequacy ratio of the domestic banking sector is at adequate level.

<sup>37</sup> Excluding branch offices of credit institutions.

<sup>38</sup> Capital adequacy ratio (CAR) = (total own funds for solvency purposes/minimum capital requirement)\*8%. By definition, only mid-year audited profit is included in the own funds. The CAR by accounting for total profit or loss for the financial year is 13.4 per cent.

## 2.6 Liquidity and credit risk stress tests show adequate shock-absorbing capacity<sup>39</sup>

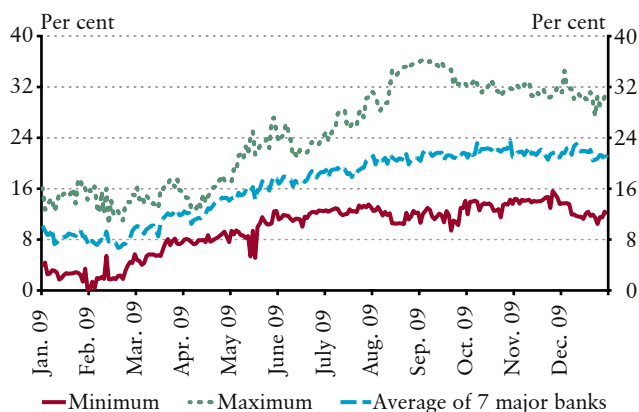
On the basis of the liquidity stress test, the liquidity reserves of banks are sufficient for the combined occurrence of turmoil on the financial markets, withdrawal of deposits and an exchange rate shock. A decline in the loan loss rates is expected in the macroeconomic baseline scenario, and thus the banks possibly do not need additional capital injections. In the stress scenario, a persistent economic recession may result in rising loan losses which may necessitate moderate capital injections of HUF 45-50 billion. We consider the additional capital need in the extreme scenario low and manageable.

### 2.6.1 THE STRESSED LIQUIDITY SURPLUS IS ADEQUATE AS A RESULT OF BANKS' ADJUSTMENT

We measure the short-term liquidity position of the domestic banking sector on the basis of a 30-day forward-looking treasury gap. The 30-day cumulated total treasury gap shows how maturing on-balance sheet and off-balance sheet treasury assets and liabilities would affect the bank's liquidity position on the whole in the next 30 days in absence of the bank's active cash-flow management. By comparing the above to the level of liquidity reserves, we receive the liquidity position that would be at the given bank's disposal at the end of the 30th day as a percentage of the balance sheet totals (Chart 2-49).

**Chart 2-49**

**30-day liquidity position of the seven major banks as a percentage of balance sheet totals**



Note: Liquidity position: the 30 day total cumulated gap (difference between inflowing and outflowing items) + liquidity reserve available 30 days later. Total cumulated gap: treasury financing deficit or surplus calculated on the basis of the static maturity cash-flow. Available liquidity reserve: FX nostro account + disposable MNB-eligible securities + undrawn stand-by credit facilities + (settlement account current balance - average settlement account holding requirement during maintenance period).

Source: MNB.

A liquidity position close to zero indicates liquidity distress; persistent liquidity distress may contribute to stronger deleveraging.

**Table 2-5**

**Main parameters of the liquidity stress test**

Assets			Liabilities		
Item	Degree	Currency effect	Item	Degree	Currency effect
Default at HUF interbank assets	20%	HUF	Withdrawals in household deposits	10%	HUF/FX
Exchange rate shock on swaps	15%	HUF	Withdrawals in corporate deposits	15%	HUF/FX
Depreciation of central bank eligible assets	10%	HUF	Standby credit cancellation	100%	HUF

Note: The forward-looking treasury gap assumes no active treasury management on the part of the bank; hence it does not take into account the rollovers of maturing interbank and foreign funds.

Source: MNB.

<sup>39</sup> These stress tests do not take into consideration the market risks, since they are in a moderate range. See also "Low market risks" chapter for the calculations on the sensitivity of banks to the exchange rate and extreme exchange rate shocks through the exposure to market risks.

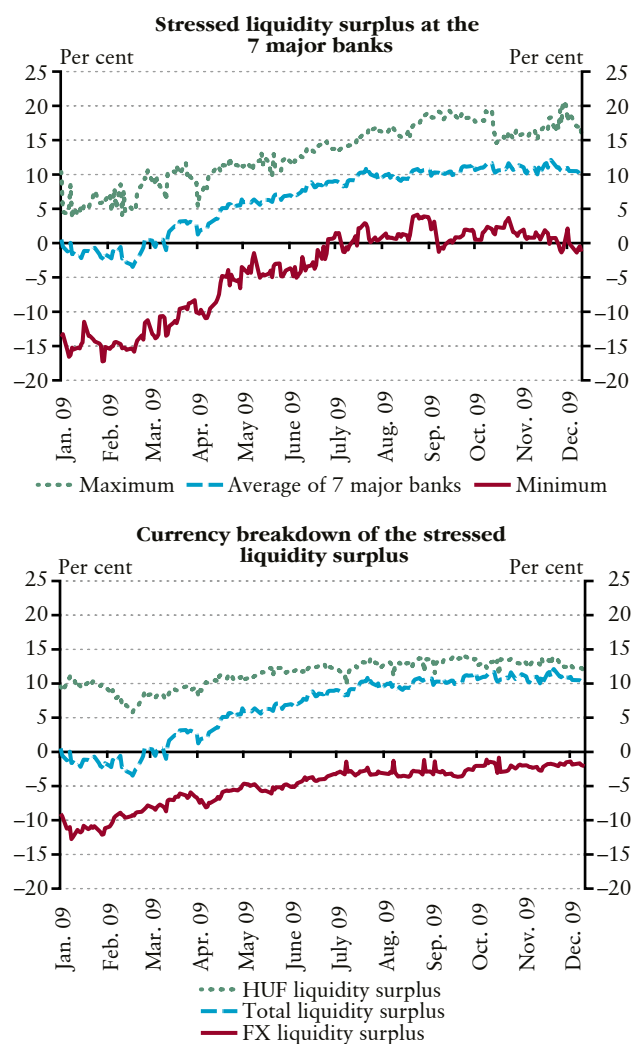
**The liquidity stress test measures the effect of the assumed simultaneous occurrence of turmoil on the financial markets, withdrawal of deposits and an exchange rate shock.** By using the data of seven major banks to determine the possible value of household and corporate deposit withdrawals, the depreciation of MNB-eligible securities and the exchange rate shock, we applied a value-at-risk approach to calculate on the basis of historical data. For the other risk measures, we used recent crisis experiences as a basis (Table 2-5).

**The stressed liquidity position of banks improved continuously, but there is a significant asymmetry between individual banks.** The stressed liquidity position of the seven major banks would have been in a permanently positive range from April 2009, equalling 10-11 per cent at the end of the year, instead of the 20-22 per cent non-

stressed surplus. A significant improvement is observed upon analysis of the minimum values; however values close to zero, indicates that there would have been a bank in an extreme persistent stress situation, where the contraction in lending might have been larger (Chart 2-50).

**A foreign currency liquidity need may occur in a stress situation.** Breaking down the liquidity position into HUF and FX positions, we may infer that the short-term foreign currency liquidity needs of banks would have continuously declined, but still would have remained in a negative range, while the forint liquidity position would have been at approximately the same level since May 2009 (Chart 2-50). No differentiation should be made between the denominations of liquidity if the swap market is operating without disturbances. Although the parent banks continue to be committed, foreign currency liquidity would be more difficult to provide for their subsidiaries in a protracted liquidity crisis. Thus, we assign key relevance to direct funds provided through parent bank relations, on the one hand, and FX swaps of the parents and the central bank, on the other, which can ensure funding of the foreign currency liquidity needs from the forint liquidity position.

**Chart 2-50**  
**Liquidity position in the stress scenario as a percentage of balance sheet totals**



Source: MNB.

### 2.6.2 THE CREDIT RISK STRESS TEST DOES NOT INDICATE A SIGNIFICANT ADDITIONAL CAPITAL NEED DUE TO HIGH PROFIT AND CAPITAL ADEQUACY

**The stress scenario is characterised by a marked decline in GDP and a significantly weakening exchange rate (Table 2-6).** Our macroeconomic forecast contains numerous downward risks, predominantly linked to less favourable external demand than expected. With a downturn in the global economic cycle, foreign-owned domestic banks' risk-taking inclination may also be lower. In parallel with that, corporate investments might be lower than expected, and corporate adjustment may become stronger again, leading to further large-scale layoffs. The latter may further undermine domestic demand via deterioration of the households' income position. The worsening global economic cycle may again lead to rise in risk premia resulting in a weaker exchange rate and higher interest rates. This would increase funding costs to both the corporate and household sectors, manifested in weaker investment activity and household consumption. A weakening real exchange rate can only moderately mitigate these negative effects by improving export. On the whole, a significantly less favourable external environment than the V-shaped recovery of the baseline scenario can cause a substantial decline in domestic GDP this year as well, possibly followed by a further moderate decline in 2011.

**Table 2-6****Macroeconomic indicators in the baseline and stress scenarios**

	Baseline scenario		Stress scenario		The difference between the two scenarios	
	2010	2011	2010	2011	2010	2011
GDP*	-0.2	3.4	-2.2	-1.0	-2.0	-4.5
Private sector employment*	-1.7	0.1	-2.3	-3.1	-0.5	-3.3
CPI*	4.4	2.3	5.0	3.5	0.6	1.2
HUF/EUR exchange rate	270	270	315	315		
HUF interest rate (per cent)	6.0	6.0	8.0	8.0		

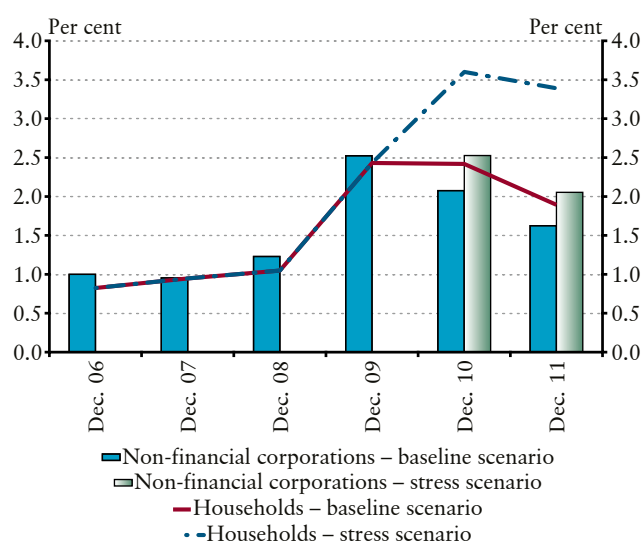
Note: The variables marked with \* show annual change in %.

Source: MNB.

**We used model-estimation for the probability of default of companies and households.** In our approach, the probability of default (PD) represents a risk parameter that links the macroeconomic environment with possible loan loss. We estimated the probability of default of banks' corporate credit portfolio in various macroeconomic scenarios using an aggregate bankruptcy model. We used a vector autoregressive (VAR) model for forecasting the ratio of bankrupt companies in the baseline and stress scenarios. In the model, in addition to the bankruptcy rate, we included endogenous variables such as the annual change in GDP, annual inflation, domestic nominal interest rates and the euro exchange rate, and controlled for foreign nominal interest rates. In relation to households, we estimated the probability of default with the Cox<sup>40</sup> proportional hazard model on individual contracts, separately for forint and foreign currency-denominated housing loans, home equity and personal loans. Among explanatory variables, the customer characteristics (age, sex, marital status, education, date of drawdown) are supplemented with macroeconomic variables (exchange rate deviation from the borrowing exchange rate, change in employment, three-month BUBOR and EURIBOR). In the course of evaluating the results, it should be noted that upon examining the correlations between the different macroeconomic variables and the crediting losses, non-linear correlations were considered only to a very limited degree, as our time series do not contain an economic recession of such magnitude, which may lead to underestimation of risks in relation to extreme movements.

**The continuing high rate of provisioning weakens the earnings capacity of the banking system.** In 2009, impairment of corporate and household loans reduced the

pre-tax profit of the banking system by a total of HUF 340 billion which, however, was partly compensated by certain short-term items which improved earnings (mainly revenue on financial operations). In 2010 and 2011, in the baseline scenario, we still forecast provisioning of HUF 300 billion and HUF 235 billion respectively, while the role of the higher-than-expected pre-tax profit improving items in 2009 is likely to diminish. We are therefore expecting a significant decline in profits in the banking sector in 2010. In the stress scenario, provisions may exceed HUF 460 billion in 2010 as a result of the high loan loss ratio (Chart 2-51) possibly resulting in negative profitability.

**Chart 2-51****Estimated loan loss rates in the baseline and stress scenarios**

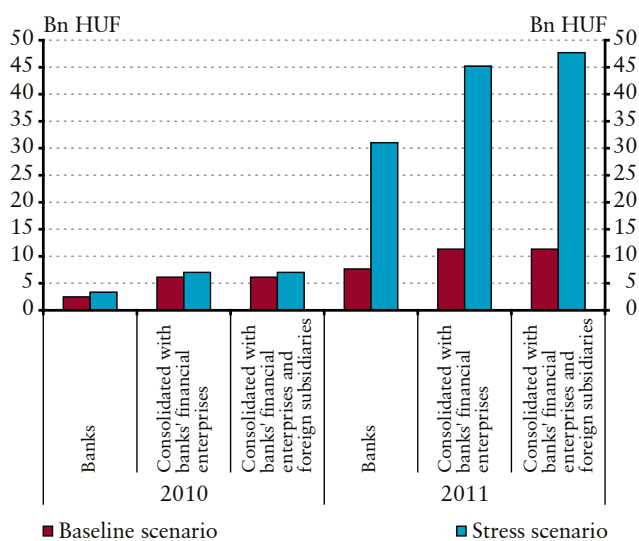
Source: MNB.

<sup>40</sup> When applying the Cox model to credit risks, we analyse the effect of the special characteristics of individuals and the macroeconomic environment on the maturity of the loan. The term of proportional hazard refers to the aspect of the model according to which the proportion between the bankruptcy likelihood of two individuals with different characteristics is dependent on their varying characteristics. The model was estimated with the maximum likelihood method.

**The capital adequacy of the banking system may remain high in both the baseline and the stress scenario.** In 2009, banks significantly deleveraged their balance sheets: both the corporate and household loan portfolio substantially declined. This significantly increased capital adequacy on its own, which was further improved by capital injections of certain banks during the year. The CAR indicator, approaching 13 per cent in 2009, may rise to approximately 16 per cent in 2011 in the baseline scenario, without payment of dividends. In the stress scenario, the capital adequacy ratio would rise minimally in 2010, and then fall to 11.8 per cent in 2011, which remains significantly higher than the regulatory minimum.

**The additional capital need of the banking sector is negligible in the baseline scenario and manageable in the stress scenario.** An additional capital need arises if the loan losses of a given bank cannot be offset by operating profit and surplus capital, and consequently the capital adequacy ratio of the bank would fall below the 8 per cent minimum regulatory capital level. Capital injections are negligible in the baseline scenario owing to the generally high level of capital adequacy of the banking sector. In the stress scenario, an additional capital injection of HUF 45-50 billion is expected (Chart 2-52). This amount may be regarded as negligible in comparison to the HUF 2,250 billion of own funds at the aggregate level. In addition,

**Chart 2-52** Additional capital need in the banking sector in the baseline and stress scenarios



Note: The additional capital injection is the sum of individual bank additional capital needs. The data for 2011 contains the capital injection need for 2010.

Source: MNB.

parent banks have confirmed their commitment in several instances to provide necessary capital for the prudent operation of their Hungarian subsidiaries.

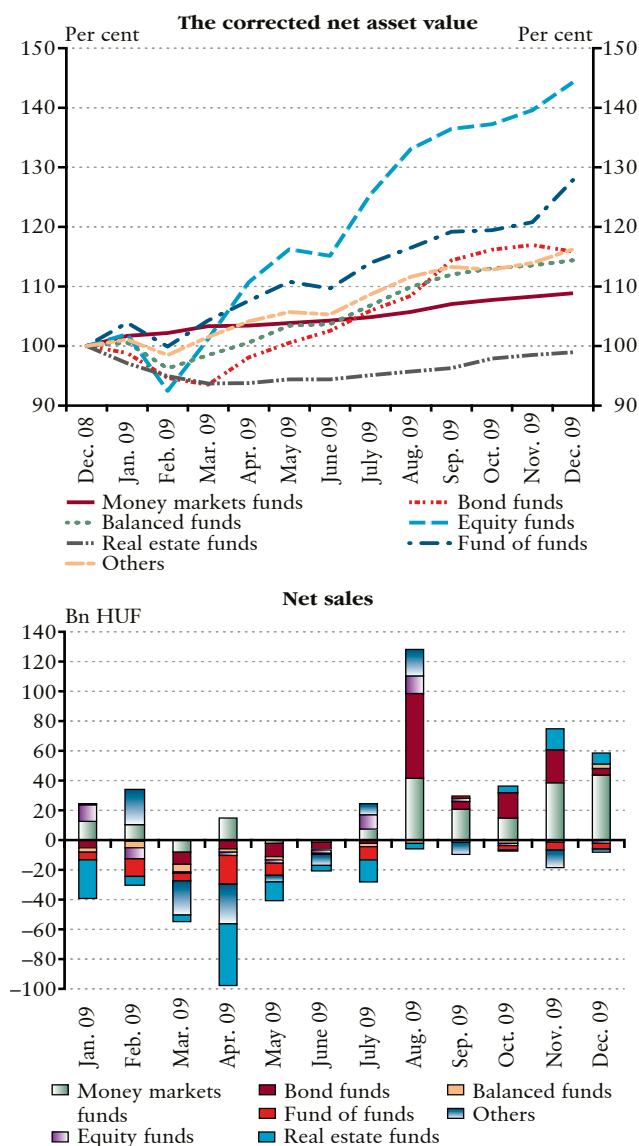
## 2.7 High returns for institutional investors

Following the unfavourable investment performance in 2008, domestic investment funds earned high profits, predominantly on equity and government bond investments, while from the second half of the year, the net asset values of the funds' have also increased through the new capital inflows related to other institutional investors. The investments of insurance companies and pension funds in bonds and money market funds were likely motivated by declining interest rate expectations, while the portfolio restructuring of private pension funds was determined by new regulation stipulating the closing of the FX position.

**Investment funds realised high returns in 2009, accompanied by substantial capital inflows from the second half of the year.** Following the downturn in the performance of investment funds in early 2009, they showed substantial gains from the second quarter of the year, particularly on their equity and bond investments (Chart 2-53). The sector experienced capital outflows in the first half of the year, followed by a net capital inflow commencing in July, primarily as a result of investments by insurance companies and pension funds. Real estate funds, which underwent changes in regulation in 2008, were unable to adjust their previous negative performance or gain net inflows from sales in 2009 (there was, however, a moderate positive inflow from September). Due to investors' declining interest rate expectations, money market and bond funds were the winners in terms of capital inflows in the second half of the year.

**Premium on life insurance products declined in 2009.** In the portfolio of insurance companies, a decline was recorded for all products in 2009, with the exception of single premium policies (the total insurance portfolio was 8 per cent smaller compared to the end of 2008) (Chart 2-54). Despite the falling popularity of life insurance products, the number of unit-linked life insurance policies declined by the smallest rate, falling by only 1.7 per cent.<sup>41</sup> The number and amount of single premium insurance policies has increased in the life insurance segment, partly as a result of abolishing tax benefits as of 1 January 2010.

**Chart 2-53** Performance and capital flows of investment funds in 2009



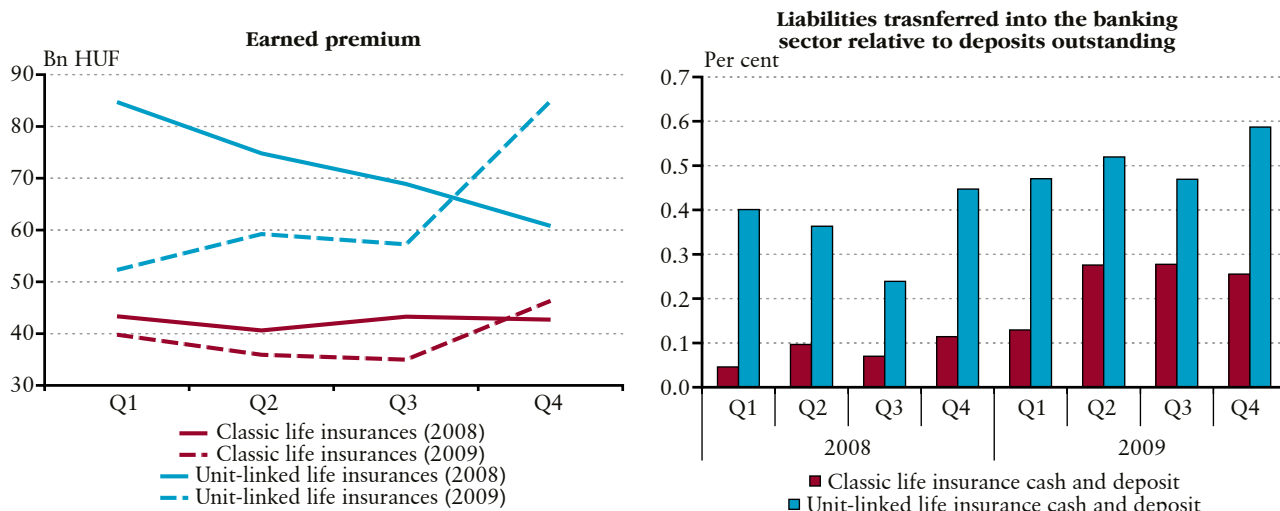
Note: The change in net asset value was filtered with transactions (sales and redemption). The others category contains data on guaranteed, derivative, closed-end and unclassified funds.

Source: BAMOSZ.

<sup>41</sup> Currently 18 per cent of the total unit-linked portfolios are schemes combined with housing loans, while nearly 4 per cent of the mortgage loan portfolio of banks is linked to such a product.

**Chart 2-54**

**Premium income realised from life insurance products and the proportion of funds channelled into the banking system to bank deposits totals**



Source: PSZÁF, MNB.

**With declining premium income, the results of pension funds exceeded the losses of previous year.**

The premium income of pension funds significantly declined in 2009: the private (second-pillar) segment booked a 4 per cent decline, while the voluntary (third-pillar) segment recorded a 14 per cent decline compared to the previous year. Following the unfavourable investment performance in 2008, the private funds realised<sup>42</sup> 23.7 per cent yields on average in 2009, while the funds in the

voluntary segment gained 16.8 per cent on average during the same period. A significant proportion of the increase in the portfolio was realised on domestic government debt securities and investment fund shares. The share of domestic instruments in the portfolio of private pension funds may increase from 2010 as a result of the government's so-called currency compliance regulation which limits the FX position and the inherent risks of private pension funds' portfolio.

<sup>42</sup> The yields of the selectable portfolios are the following: the classic portfolios realised 11.45 per cent, the balanced portfolios gained 17.4 per cent, while the growth portfolios realised 25.6 per cent on average. The yields of the different funds deviated in a wide range: the difference between the maximum and the minimum yields recorded in 2009 was 20 percentage points, but in 2008–2009 it was 10 percentage points, and this range of the cumulative yields in the last 10 years was 5 percentage points.



## 2.8 Low risks in the domestic payment and settlement systems

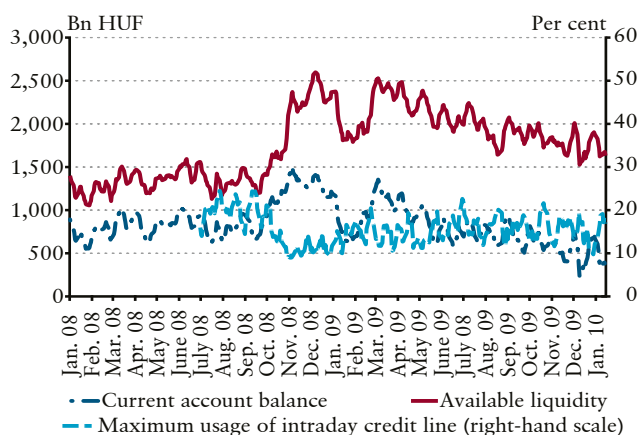
In 2009, VIBER<sup>43</sup> continued to be characterised by high intraday liquidity owing to credit lines increased in 2008 and turnover stabilising at levels lower than in the past. VIBER participants were able to settle transactions earlier than in 2008, due to high intraday liquidity and gradually adjusted customer intraday credit lines. From October 2009, the redemption of government securities is settled in VIBER instead of using the Interbank Clearing System (ICS); in relation to the above, the MNB has increased the frequency of running the gridlock resolution algorithm for preventive purposes. On January 1 2009, the central counterparty function carrying credit risk was separated from the central securities depository activity, and the clearing engine of the ICS was upgraded. The availability of the overseen systems is adequate from a financial stability point of view.

**For VIBER, 2009 was calmer than the previous year and was free of shocks.** VIBER continued to be characterised by high intraday liquidity owing to intraday credit lines<sup>44</sup> increased in 2008 and turnover stabilising at levels lower than in the past. Since VIBER primarily serves for settlement of large value money and capital market transactions, the system turnover obviously moves in line with the activity on those markets. VIBER turnover, however, includes an increasing share of the settlement of central bank instruments.

**In 2009 VIBER participants did not significantly reduce the intraday credit lines that had been substantially increased earlier (Chart 2-55), and thus the level of intraday liquidity remained high at both the aggregate and individual participant level.** In 2008, in response to the crisis, VIBER participants significantly increased their intraday credit lines primarily out of caution, and the central bank decisions on the list of eligible collateral also strengthened this behaviour (Chart 2-56). In 2009, the list of eligible collateral was extended to include municipal bonds and mortgage bonds of own issue, further facilitating the management of intraday credit lines. Apart from the list of eligible collateral, the composition of

**Chart 2-55** Current account balance and available liquidity as well as the maximum usage of intraday credit line in the system

(2007–2009)



Note: Start-of-day balance adjustments and MNB and Hungarian State Treasury transactions were excluded from the data series. The usage of intraday credit line data is available only for January–November 2007 and starting from July 2008. Data is in all cases calculated as a 5-day moving average.

Source: MNB.

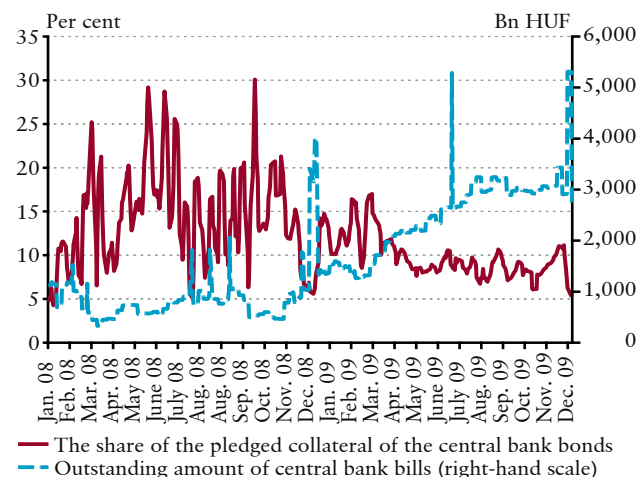
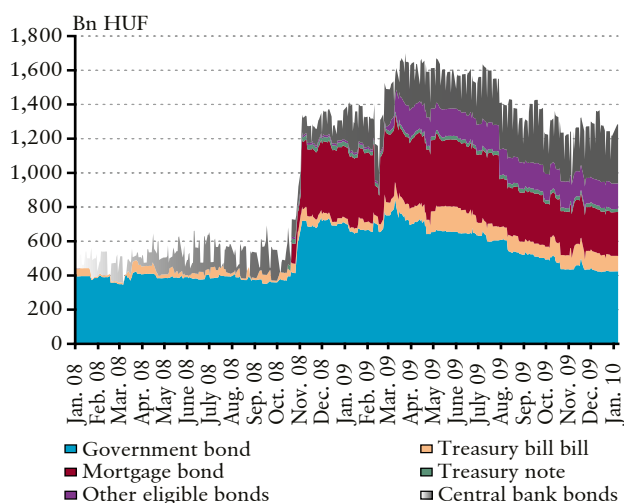
liquidity available in the system was influenced by the decrease of the reserve requirement ratio at the end of 2008; the resulting free reserves were placed in MNB bills or overnight central bank deposits. The MNB bill is eligible as collateral in central bank operations, and thus it is available as potential liquidity in VIBER, similarly to the overnight central bank deposit which is repaid in the morning before system opening, hence it is available liquidity. The choice between the two central bank instruments is neutral from the point of view of intraday liquidity in VIBER. The pledged portion of the owned MNB bill portfolio declined in 2009 (Chart 2-56), which did not result in realising liquidity risk in VIBER, since the own portfolio itself increased in value and VIBER turnover stabilised at a lower level.

<sup>43</sup> VIBER: Real Time Gross Settlement System operated by the MNB.

<sup>44</sup> VIBER liquidity is composed of two components: the account balance and the portion of the securities portfolio pledged for the MNB which is not used up for monetary purposes (overnight or longer term central bank loans).

**Chart 2-56**

**Portion of securities portfolio pledged for the MNB and the system participant's MNB bill portfolio**



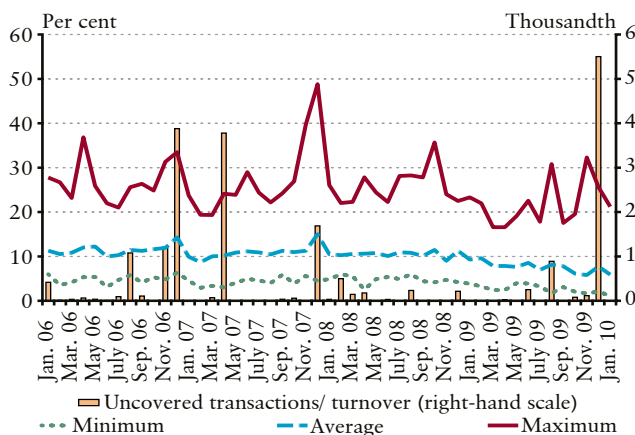
Note: The securities are aggregated at the acceptance value determined by the MNB on a daily basis.  
Source: MNB.

**The availability of VIBER further improved.** In order to further reduce operational risk, implementation of the action plan previously defined continued in 2009. The action plan was supplemented with tasks resulted from the comprehensive oversight assessment of VIBER in 2008; implementation of these is also underway. On the basis of the comprehensive assessment of VIBER, the system generally fulfilled the requirements based on international recommendations. The annual average availability indicator of the system reached 99.98 per cent last year, indicating a further improvement compared to previous years.

**The ICS basically uses the available intraday liquidity of VIBER.** The liquidity in ICS, clearing less than 10 per cent of VIBER turnover, was ample in 2009 as well. The ratio of

**Chart 2-57**

**Liquidity needed for settling IBC-turnover as a percentage of available liquidity (average, maximum, minimum), and queued transactions as a percentage of turnover**



Source: MNB

queued transactions (which could not be cleared in the nighttime clearing due to insufficient funds) as a percentage of turnover in ICS remained negligible; a larger volume of queued transactions was recorded only at the end of 2009 (Chart 2-57).

**The queues were caused by liquidity and operating problems arising in ICS.** The analysis of the liquidity risk in ICS showed that the parties generally would have had sufficient free (i.e. pledgeable) eligible collateral in their balance sheets, and some of them also placed overnight central bank deposit (which, in contrast to VIBER, is not included in available liquidity in ICS). Although, queues could have been avoided with more cautious liquidity management (e.g. pledging further eligible securities to increase the credit lines or using averaging more when fulfilling reserve requirements), our analysis suggests that the internal conditions making it possible to take the actions above (sufficient flow of information between organisational units) are not necessarily given. In addition, the analysis also established that running into queues (assuming that it can be settled in VIBER from the repayment of the overnight central bank deposit during the daytime clearing cycle) sometimes proved to be a “cheaper” alternative for ICS participants than accumulating reserve surpluses or paying the transaction and labour costs of additional pledging. The data suggest that queues mostly occur around holidays, in the months of April and December, implying that operational risk increases in these periods (presumably due to leaves).

**On 1 January 2009, the central counterparty function carrying the credit risk was separated from the**

**central securities depository activity.** The consolidation of market conditions could be seen in the securities clearing and settlement system as well. The development of the settlement fails-to-turnover ratio calculated for guaranteed markets showed a shift in a positive direction. The fails in 2009 were attributed to technical causes (false transactions, erroneous orders) and delayed settlement of large custodian customers. The high price fluctuations experienced in 2008 occurred only sporadically in 2009, and these are not in direct connection with the crisis. The system still proved to be robust against occasional high price fluctuations.

**The availability of the core securities clearing and settlement services<sup>45</sup> improved in 2009 compared to 2008.** Major operational problems are rare; the number of incidents lasting more than 10 minutes showed a declining trend; and as a result, the availability of the securities clearing and settlement system is acceptable from the point of view of financial stability. In 2009, the MNB pursued the comprehensive oversight assessment of the securities clearing and settlement system operated by KELER Zrt. and KELER KSZF Kft. and released recommendations for the operators, relating to operational risk management, and the stress testing methodology as well as efficiency.

---

<sup>45</sup> Gross, multinet and derivative clearing and settlement.



# **Appendix: Macro-prudential indicators**

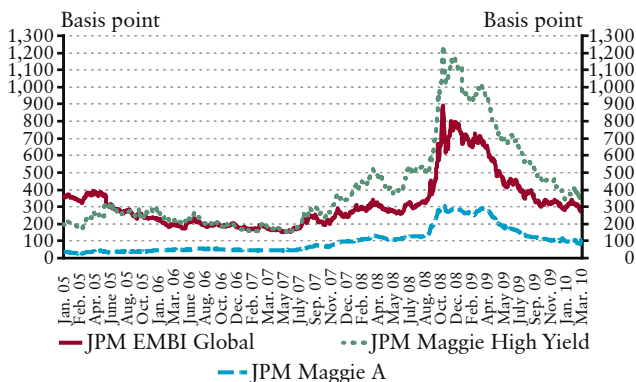




## 1 Risk appetite

Chart 1

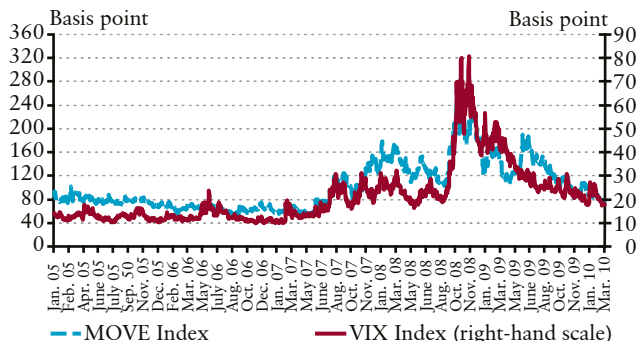
### Primary risk indicators



Source: Datastream, JP Morgan.

Chart 2

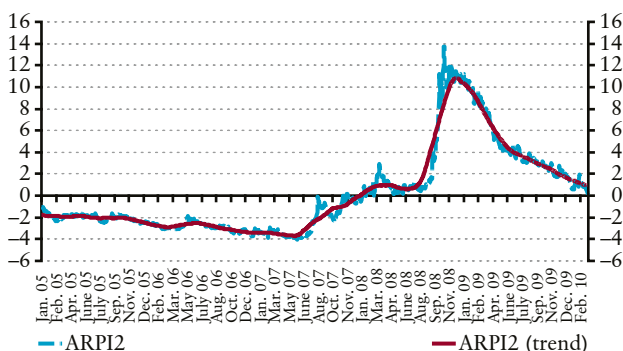
### Implied volatility of the primary markets



Source: Datastream, Bloomberg.

Chart 3

### Dresdner Kleinwort indicator



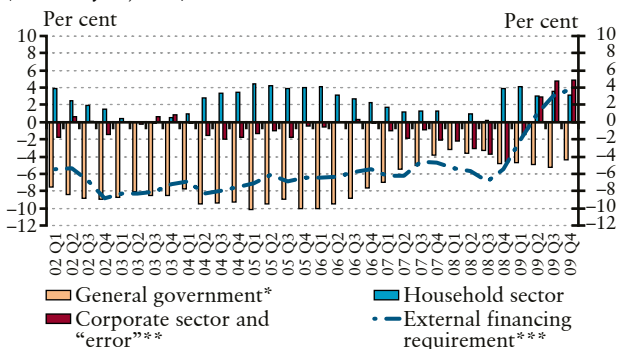
Source: DrKW.

## 2 External balance and vulnerability

Chart 4

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

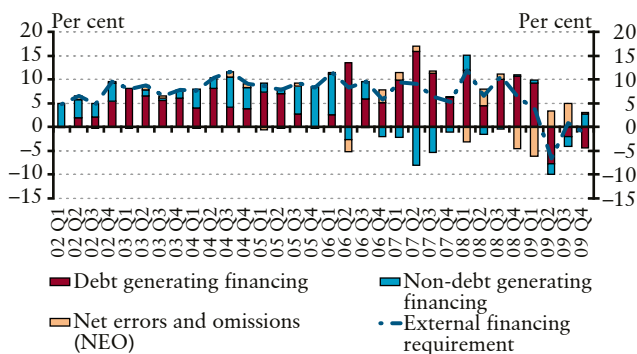
(seasonally adjusted)



Source: MNB.

Chart 5

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

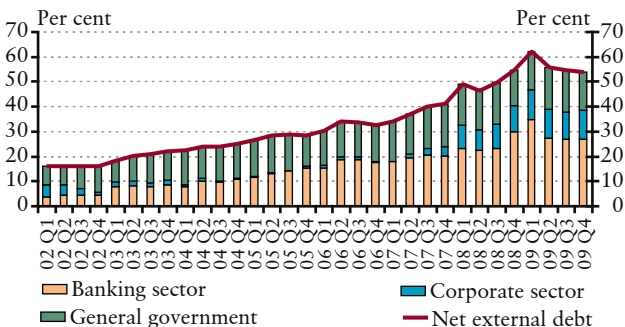


Source: MNB.



**Chart 6**

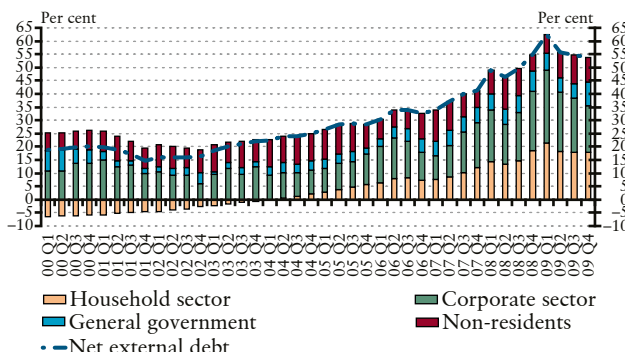
**Net external debt as percentage of GDP**



Source: MNB.

**Chart 7**

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



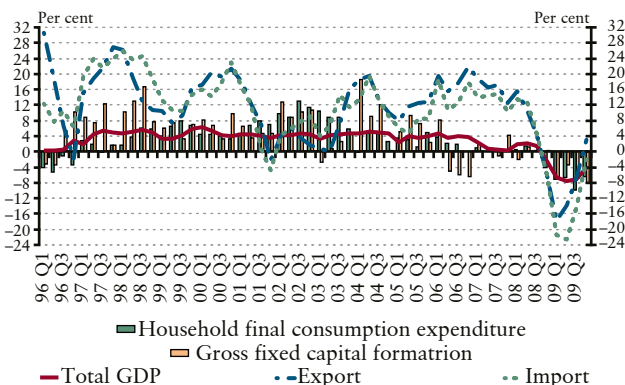
Source: MNB.

**3 Macroeconomic performance**

**Chart 8**

**GDP growth and its main components**

(annual growth rate)

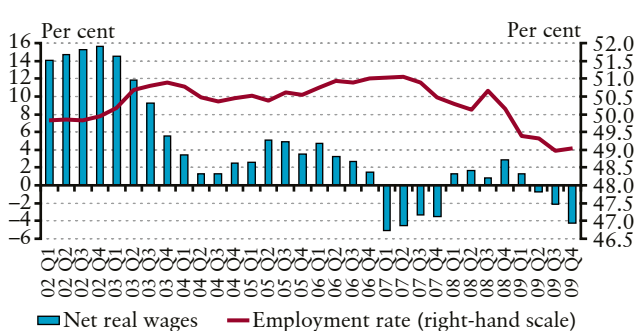


Source: HCSO.

**Chart 9**

**Employment rate and net wage developments**

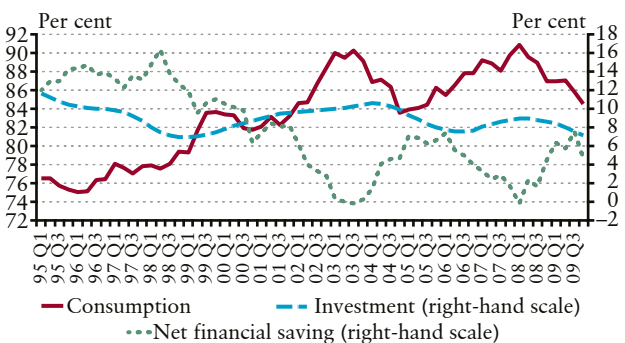
(annual growth rate)



Source: HCSO.

**Chart 10**

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

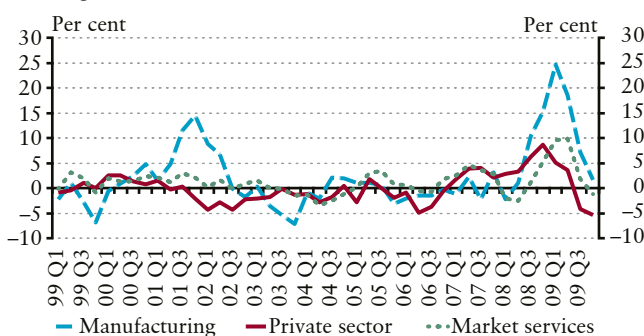


Source: HCSO, MNB.

**Chart 11**

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

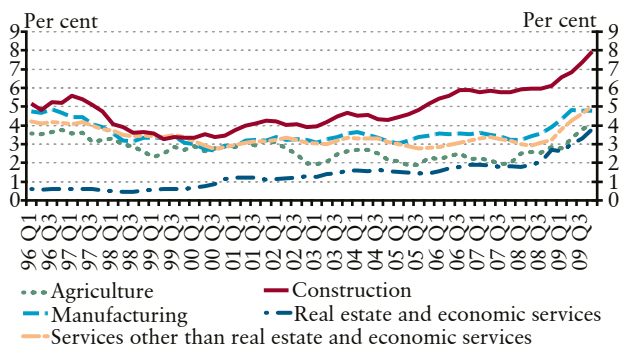
(annual growth rate)



Source: HCSO, MNB.

**Chart 12**

**Sectoral bankruptcy rates**

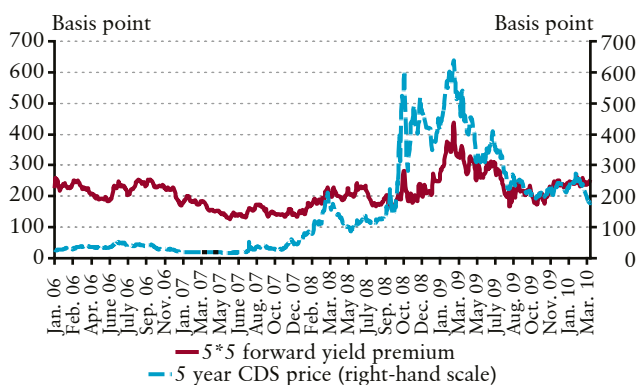


Source: Opten, HCSO, MNB.

**4 Monetary and financial conditions**

**Chart 13**

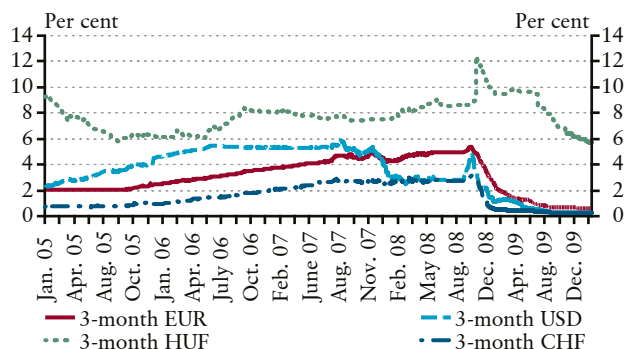
**Long-term default risk and forward premium of Hungary**



Source: Datastream, Reuters.

**Chart 14**

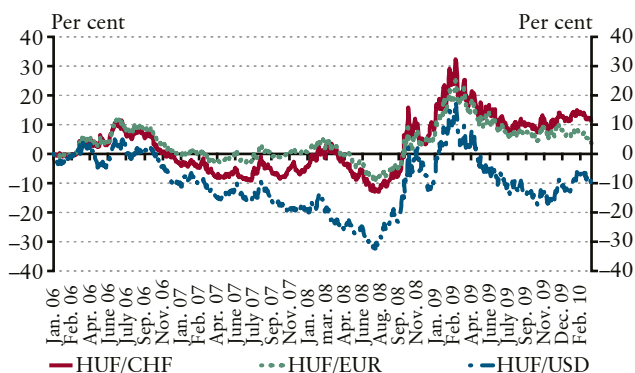
**Three-month EUR, USD, CHF and HUF money market interest rates (LIBOR and BUBOR fixing)**



Source: Reuters.

**Chart 15**

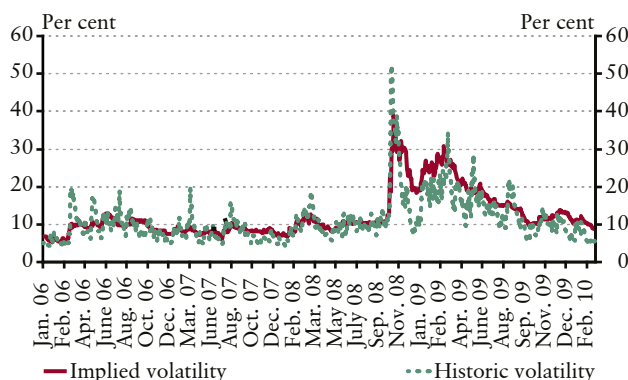
**HUF/EUR, HUF/USD and HUF/CHF exchange rates compared to January 3, 2005**



Source: Reuters.

**Chart 16**

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

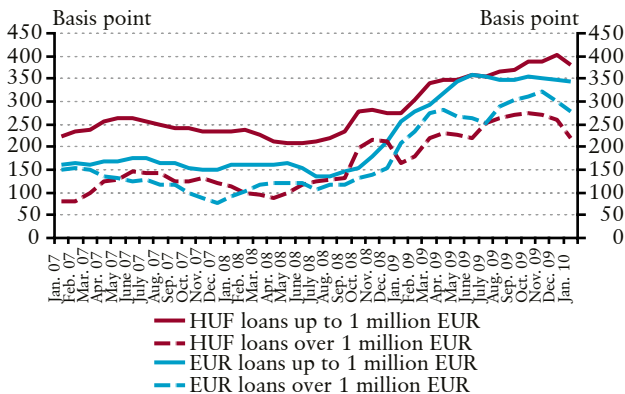


Source: Reuters, MNB.

**Chart 17**

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

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

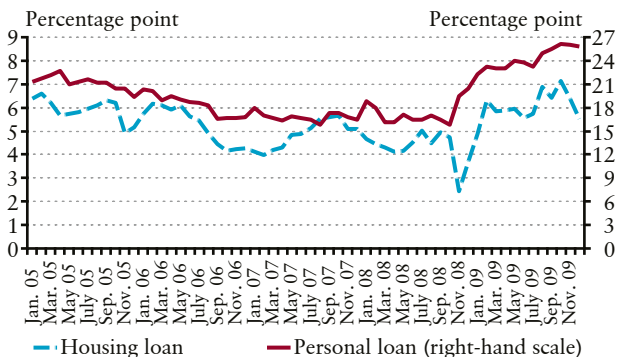


Source: MNB.

**Chart 18**

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

(over 3-month BUBOR)

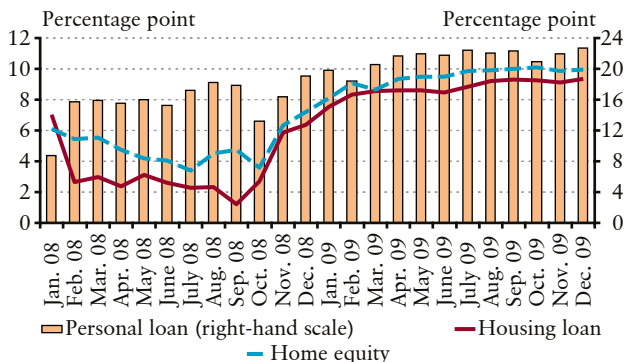


Source: MNB.

**Chart 19**

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

(over 3-month CHF LIBOR)

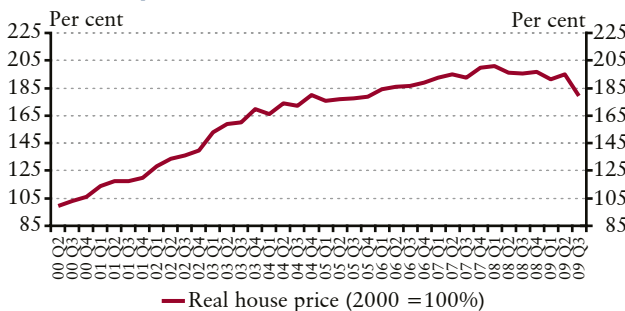


Source: MNB.

**5 Prices of instruments**

**Chart 20**

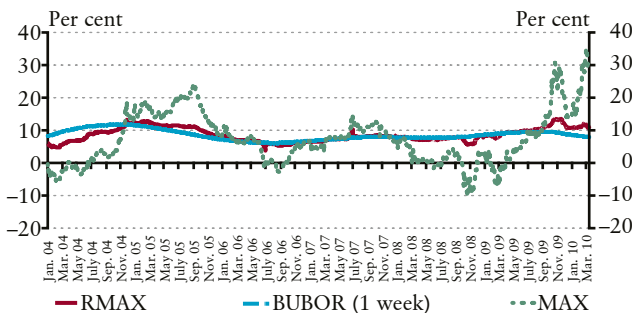
**Real home prices**



Source: FHB.

**Chart 21**

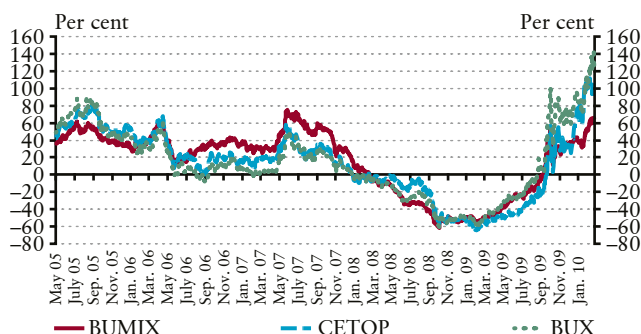
**Annualised yields on government securities' indices and money markets**



Source: ÁKK, portfolio.hu, MNB.

**Chart 22**

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

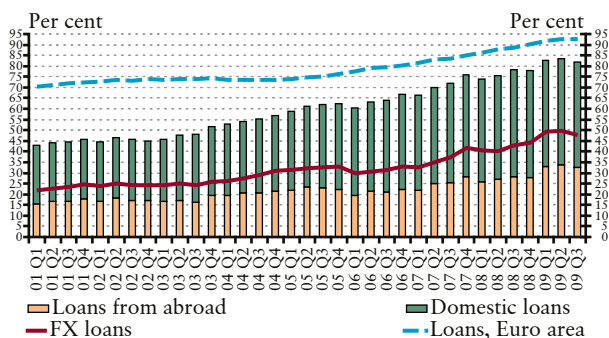


Source: BSE, portfolio.hu.

**6 Risks of the financial intermediary system**

**Chart 23**

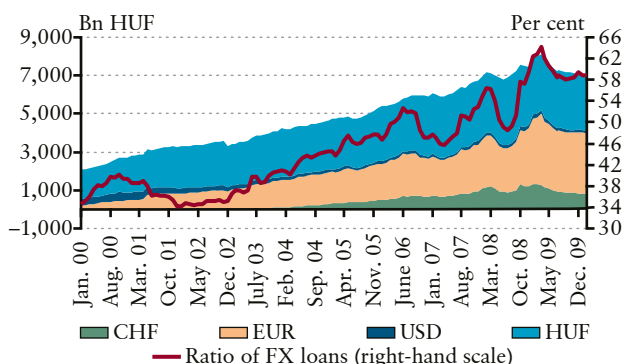
**Indebtedness of non-financial enterprises as a percentage of GDP**



Source: Eurostat, MNB.

**Chart 24**

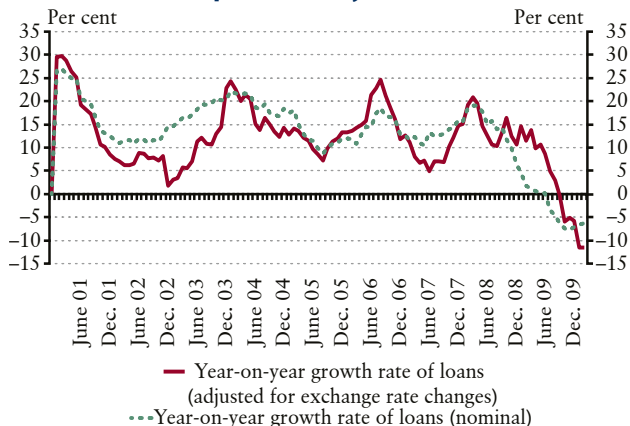
**Denomination structure of domestic bank loans of non-financial enterprises**



Source: MNB.

**Chart 25**

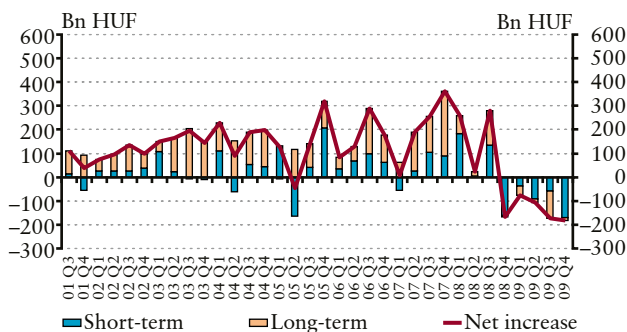
**Annual growth rate of loans provided to non-financial corporations by domestic banks**



Source: MNB.

**Chart 26**

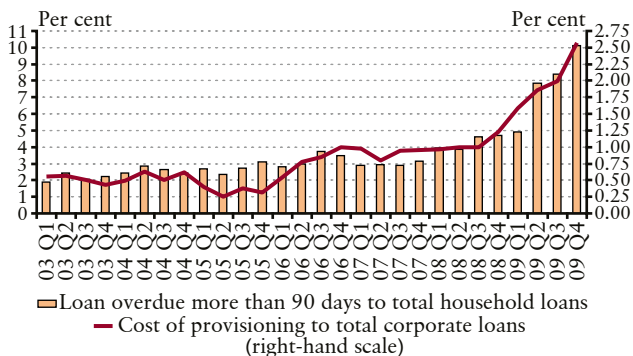
**Net quarterly change of bank loan volumes of non-financial enterprises**



Source: MNB.

**Chart 27**

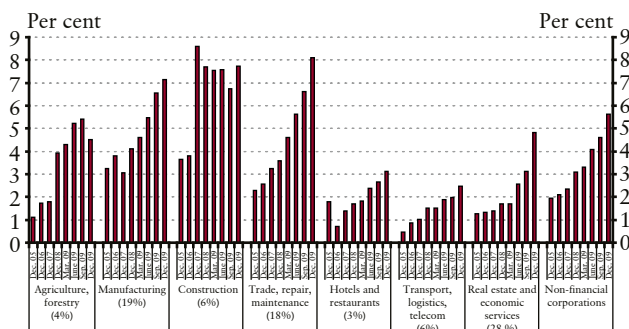
**Quality of the corporate loan portfolio**



Source: MNB.

**Chart 28**

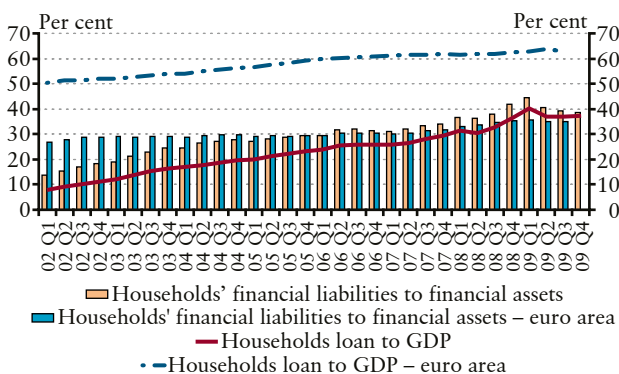
**Provisioning on loans of non-financial corporations by industry**



Source: MNB.

**Chart 29**

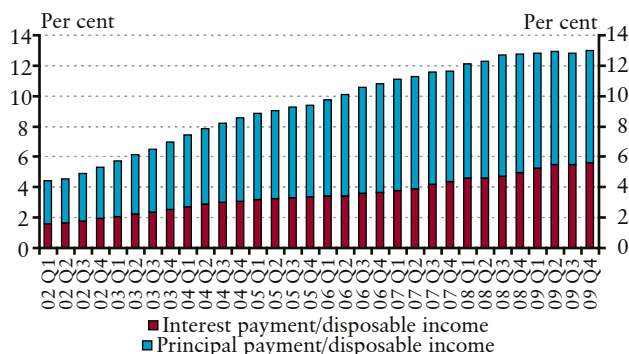
**Indebtedness of households in international comparison**



Source: ECB, MNB.

**Chart 30**

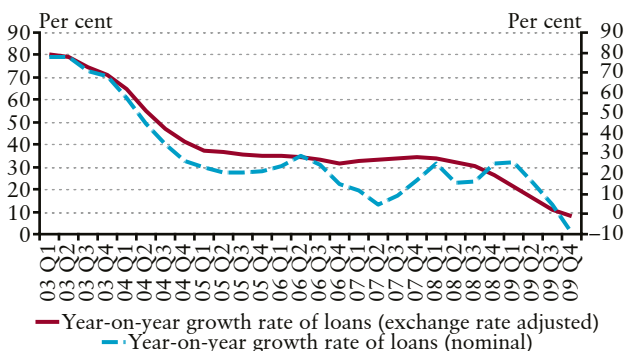
**Debt service burden of the household sector**



Source: MNB.

**Chart 31**

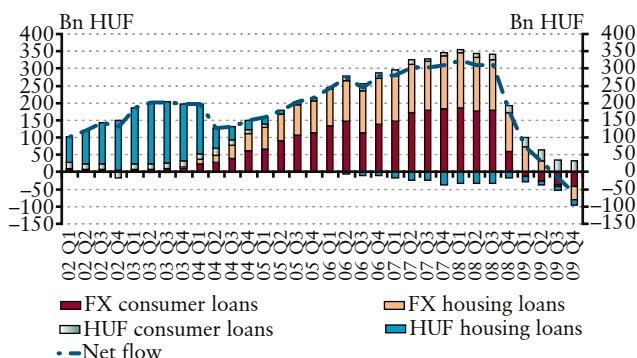
**Annual growth rate of total household loans**



Source: MNB.

**Chart 32**

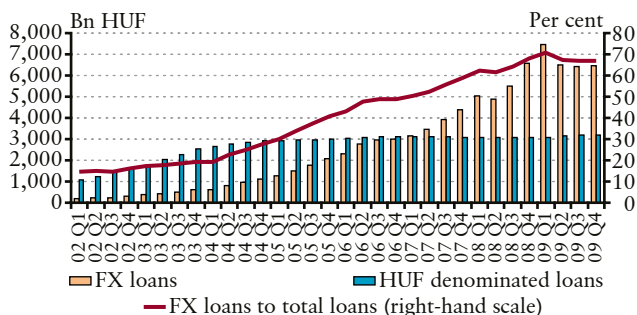
**Net quarterly change of bank loan volumes of households by main products and currencies, adjusted for exchange rate changes, seasonally adjusted**



Source: MNB.

**Chart 33**

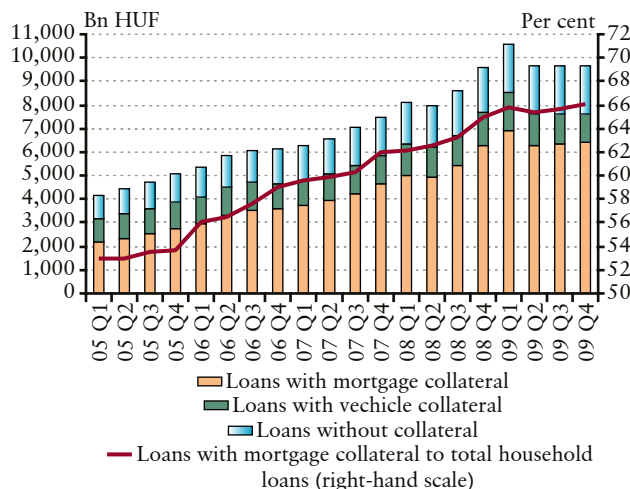
**Household loans distribution by denomination**



Source: MNB.

**Chart 34**

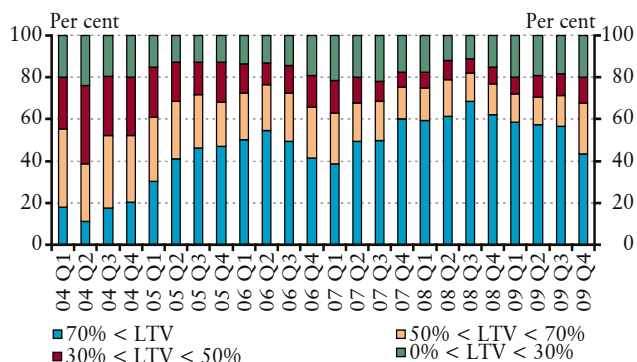
**Household loans distribution by collateral**



Source: MNB.

**Chart 35**

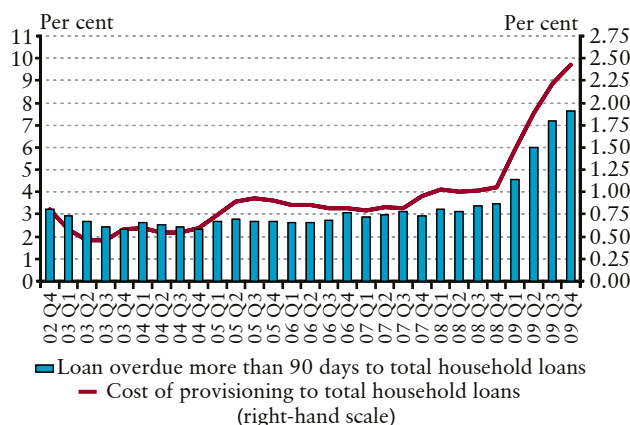
**Distribution of new housing loans by LTV**



Source: MNB.

**Chart 36**

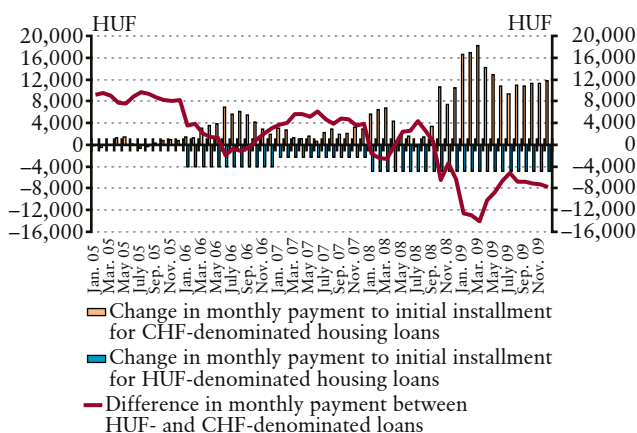
**Quality of the household loan portfolio**



Source: MNB.

**Chart 37**

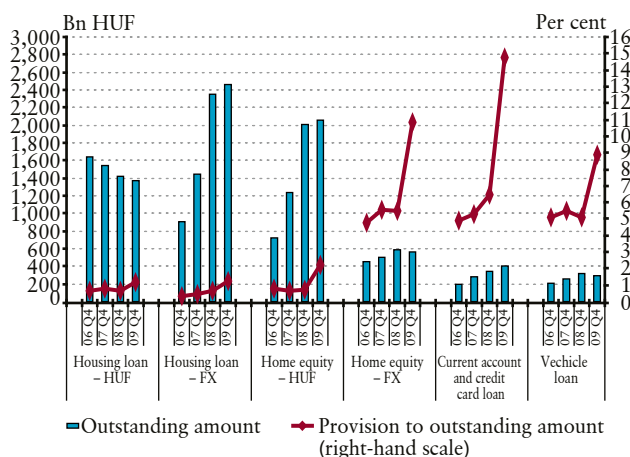
**Comparison of instalment payments of CHF- and HUF-denominated housing loans**



Source: MNB.

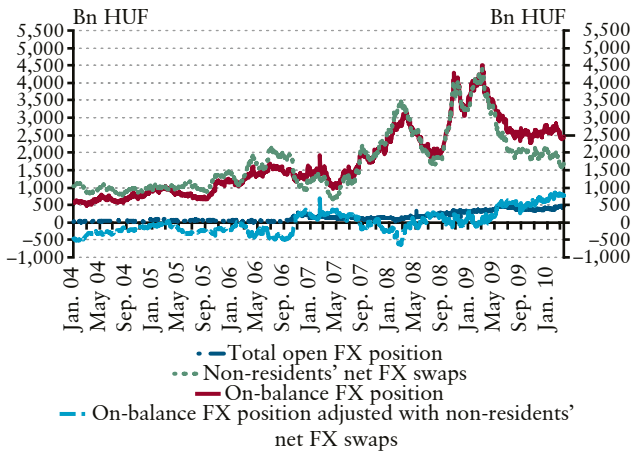
**Chart 38**

**Provisioning on household loans**



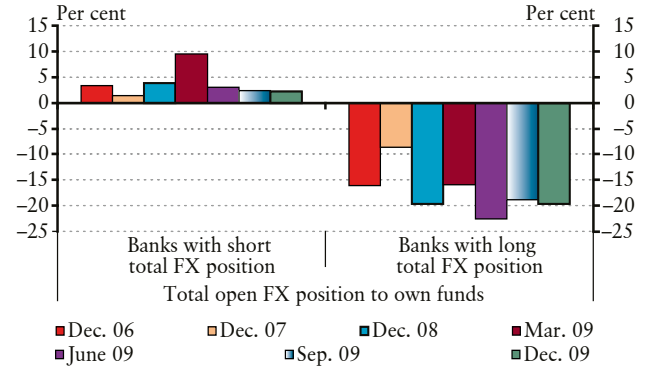
Source: MNB.

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



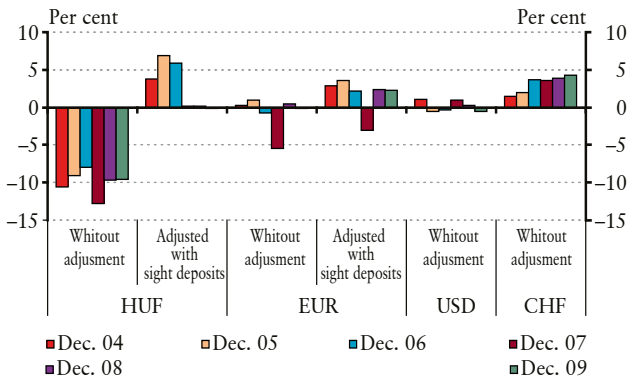
Source: MNB.

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



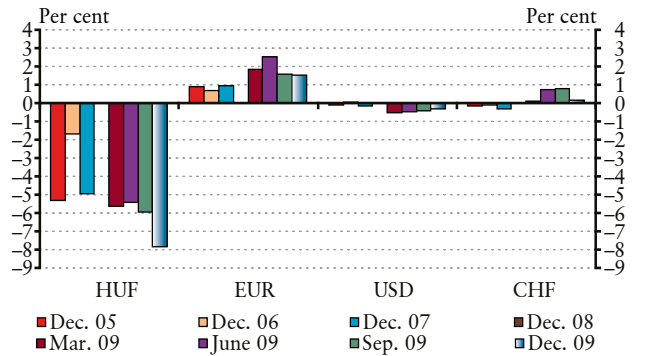
Source: MNB.

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



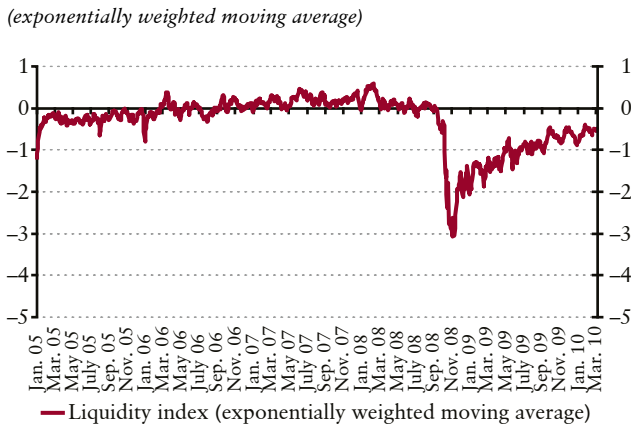
Source: MNB.

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



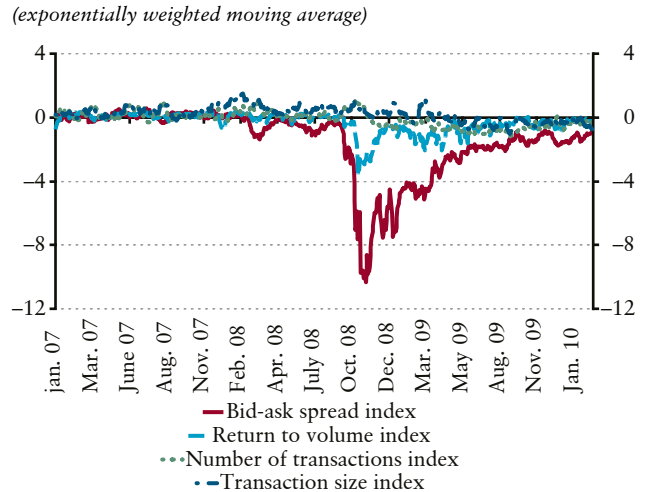
Source: MNB.

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



Source: MNB, Keler, Reuters, DrKW.

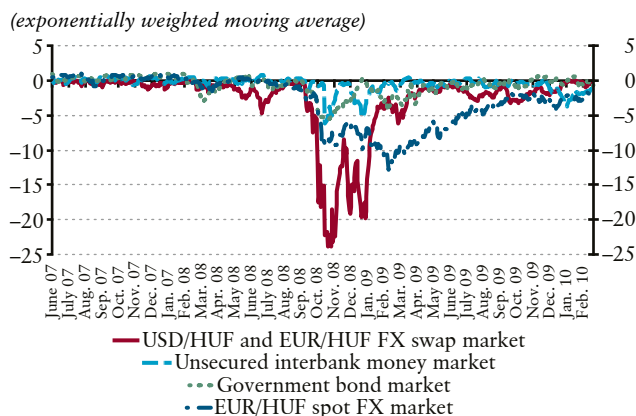
**Chart 44**  
**Liquidity sub-indices**  
*(exponentially weighted moving average)*



Source: MNB, Keler, Reuters, DrKW.

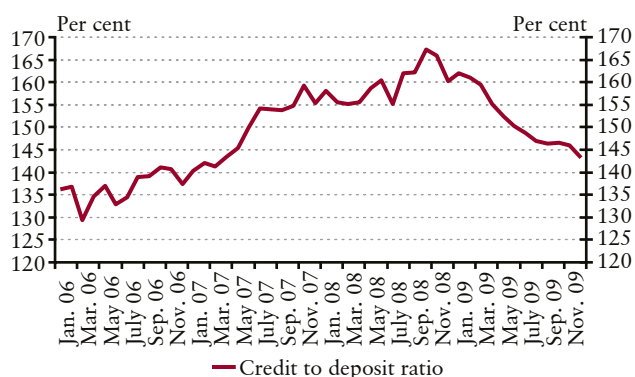


**Chart 45**  
**Bid-ask spread indices of the major domestic financial markets**  
*(exponentially weighted moving average)*



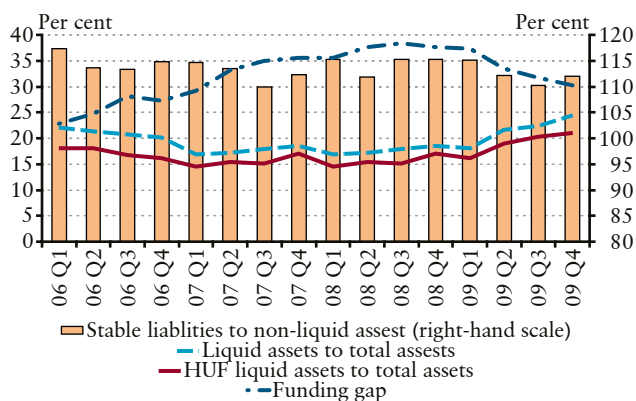
Source: MNB, Keler, Reuters, DrKW.

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



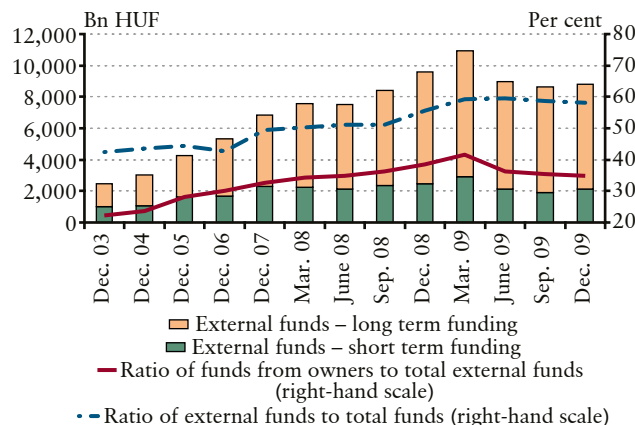
Source: MNB.

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



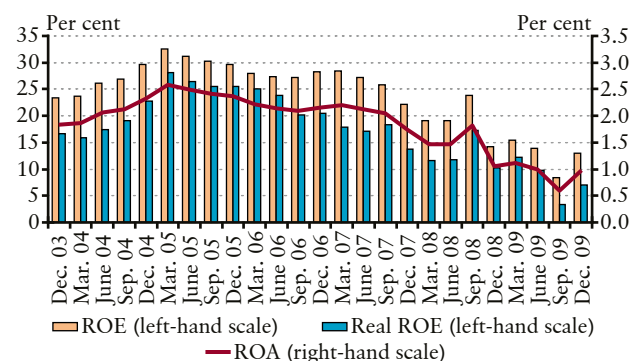
Source: MNB.

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



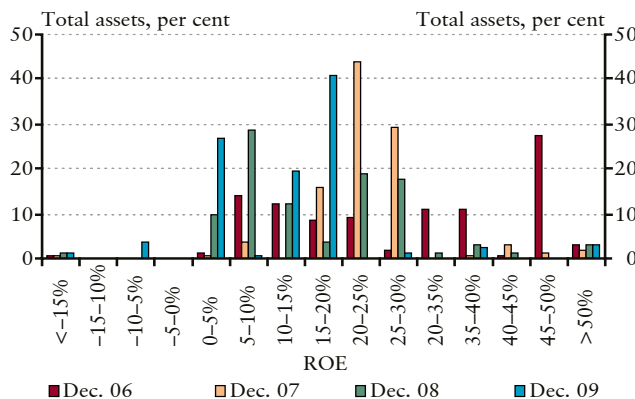
Source: MNB.

**Chart 49**  
**ROA, ROE and real ROE of the banking sector**



Source: MNB.

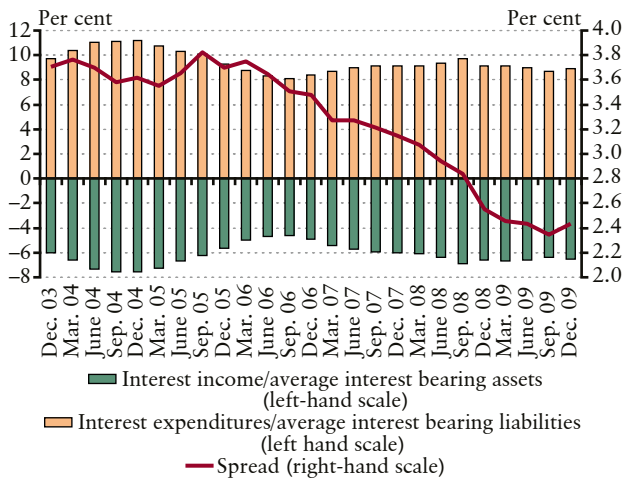
**Chart 50**  
**Dispersion of banks' total assets by ROE**



Source: MNB.

**Chart 51**

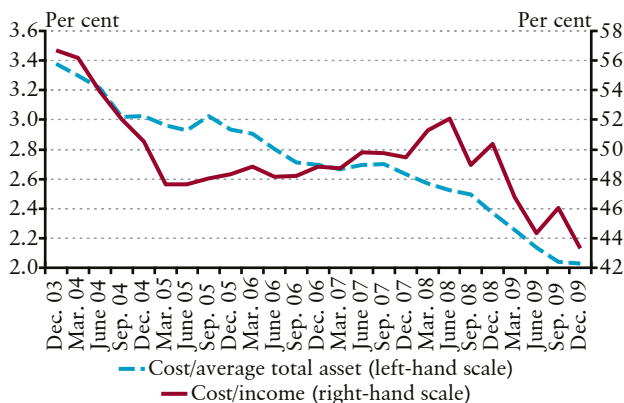
**Banking sector spread and its components**



Source: MNB.

**Chart 52**

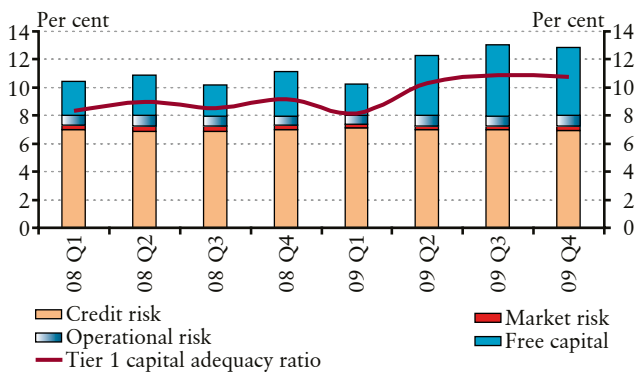
**Operating efficiency indicators of the banking sector**



Source: MNB.

**Chart 53**

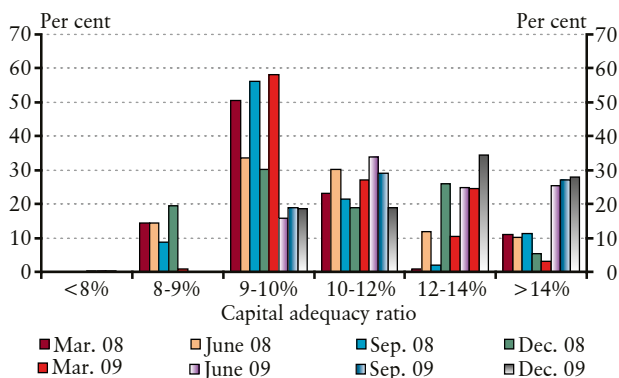
**Banks' capital adequacy ratios**



Source: MNB.

**Chart 54**

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

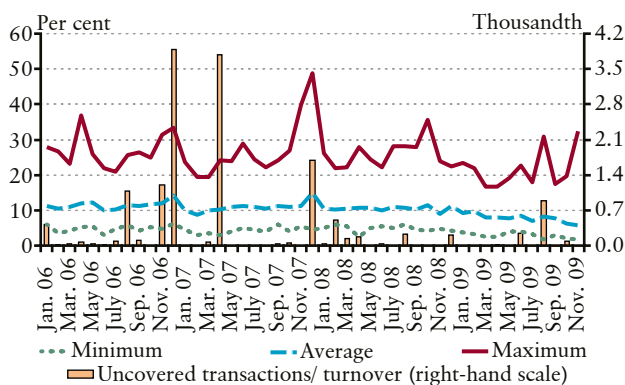


Source: MNB.

## 7 Risks of the payment systems

**Chart 55**

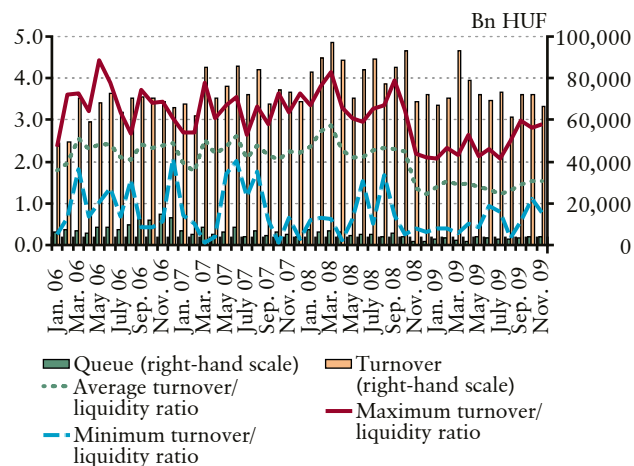
**Liquidity needed for settling IBC-turnover as a percentage of available liquidity and uncovered transactions as a percentage of the turnover**



Source: MNB.

**Chart 56**

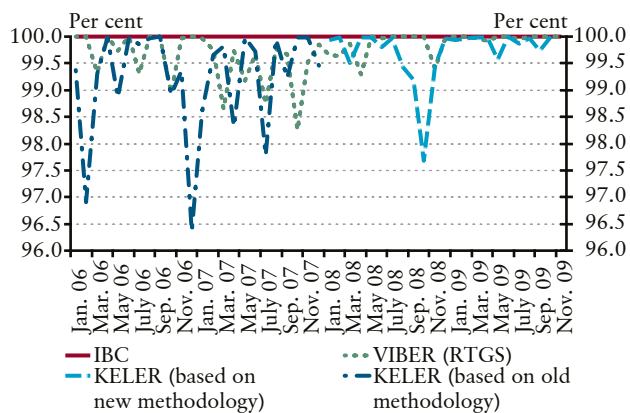
**Monthly turnover/liquidity ratio (VIBER) and monthly turnover and queue statistics**



Source: MNB.

**Chart 57**

**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 (31st December) if not otherwise indicated.

## **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 forint 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:**

FHB House Price Index.

## **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 forint 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 forward 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 forint 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:**

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 50:**

Pre-tax profit.

**Chart 51:**

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 52:**

Cost: previous 12 months

Income: previous 12 months

Average total asset: mean of previous 12 months

**Chart 53:**

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 56:**

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

**Chart 57:**

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

April 2010

Print: D-Plus

H-1037 Budapest, Csillaghegyi út 19-21.



