



MAGYAR NEMZETI BANK

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

The Magyar Nemzeti Bank's fundamental interest and joint responsibility with other government institutions is to maintain and promote the stability of the domestic financial system. The role of the Magyar Nemzeti Bank in the maintenance of financial stability is defined by the Central Bank Act.

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 Márton NAGY, Director. The project was managed by Tamás BALÁS, senior economist of Financial Stability. The Report was approved for publication by Júlia KIRÁLY, Deputy Governor.

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The Report incorporates the Monetary Council's valuable comments and suggestions following its meetings on 25 October and 15 November 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 29 October 2010.

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Overall assessment

The strong Swiss franc, bank levy and the upholding of moratorium on foreclosures and evictions have had a negative effect on banks' income-generating capacity. The banking sector is losing competitiveness within Central and Eastern Europe and therefore may experience disadvantages in the parent banks' funding allocation. All this adds to the risk that lending by the financial sector and, consequently, its contribution to economic growth might decline further. The recent deterioration in the operational environment of the Hungarian banking sector does not endanger financial stability, due to the adequate capital position of domestic banks and the financial strength of their foreign owners.

In the USA, the Fed has announced a second round of quantitative easing, meanwhile mounting sovereign risks may render the economic recovery vulnerable in the euro area

Since the outbreak of the global economic crisis, governments in a number of countries have implemented unprecedented public interventions to stabilise the economy and financial markets. However, the sustainability of fiscal stimulus has been strongly challenged recently, particularly in the euro area. Governments have attempted to bolster market confidence by implementing massive fiscal consolidation programmes, which, however, may slow economic recovery over the short term. Another risk is that the rollover needs related to debt securities of European banks coincide with tremendous government debt issuance needs, which might result in stronger deleveraging banks. As the room for fiscal stimulus has markedly tightened in most of the developed countries, only monetary policy is able to stimulate economic growth. The Federal Reserve, the Bank of England, and the Bank of Japan have responded to the slow growth with the second wave of quantitative easing.

Risk assessment of Hungary has been falling behind that of the CEE region

Markets are highly sensitive to news about Hungary, particularly news concerning the government budget, which is reflected in the substantially higher volatility of Hungarian asset prices compared to that of other countries in the region. Perceptions of the risks associated with the economy have increased since early June 2010 and diverged significantly from that of other regional economies. The market also took a negative view of the aborted negotiations with the international institutions. In the autumn, however, these market tensions eased markedly after the Government expressed its commitment to maintain the 3.8 per cent and 3 per cent GDP-proportionate budget deficit targets for this year and next, respectively.

The anticipated recovery is threatened not only by fragile external demand but by a strong Swiss franc

According to our forecast, economic growth will markedly accelerate in the years ahead. However, a number of risks to the pace of growth can be identified. The external economic outlook remains fragile due to the adverse effects of fiscal austerity efforts by euro-area governments. Furthermore, the depreciation of the forint against the Swiss franc – particularly if it occurs via appreciation of the franc against the euro – may substantially worsen the economic outlook in Hungary via a decline in domestic demand.

The Government's action plan, announced in the autumn, may help to stabilise the budget; but may also lead to sustainability problems over the longer term

The deficit targets for 2010 and 2011 appear to be achievable in the wake of the Government's announcement. Employment growth and the planned reduction in personal income tax rates may contribute to an improvement in households' creditworthiness, while the cut in the corporate income tax may stimulate investment and borrowing. At the same time, however, the introduction of windfall taxes is likely to reduce the predictability of the tax

regime, and may create a less favourable environment for business investment over the long run; finally it may weaken fiscal sustainability in the absence of structural measures. The Government's proposed measures affecting Hungarian mandatory private pension funds may also add to fiscal sustainability risks, particularly if these funds are intended to spend for financing current expenditures.

Outstanding loans to corporations and households may increase next year, but there are marked downside risks

Outstanding loans to corporations contracted sharply in H1, but the pace of decline slowed in the third quarter. At the same time, there are still no sign yet of a turnaround in the household market, with the pace of decline remaining unchanged each quarter. Next year, corporate lending may begin to recover first, followed by an upturn in lending to households. The pick-up in credit demand may mark a turning point driven by the recovery of external demand for companies and increasing disposable income for households. However, the risk that the turning point will occur later than anticipated is high. The fragility of external economic outlook in the case of corporations and the protracted adjustment process due to high indebtedness and debt-servicing burdens in the case of households may pose a risk to the rebound in credit demand. On the supply side, persistently tight credit conditions may delay the recovery in lending, which, however, could be partly counterbalanced by widening the state guarantee fund for the corporate sector utilised successfully by the banks. The uncertainty caused by the windfall levy on banks leads to deterioration in the business environment and consequently, parent banks may choose to reduce their exposure to their Hungarian subsidiaries in funding allocation. In addition, the appreciation of the Swiss franc may weaken banks' lending capacity through loan losses incurred due to deterioration in portfolio quality, which may lead to weaker lending activity, particularly in case of corporations.

Reliance on external refinancing remains high, while the shortening in maturities emerges as additional vulnerability

The liquidity position of Hungarian banks is considered to be strong and the share of liquid assets is adequate. However, the decrease in the loan-to-deposit ratio has slowed significantly in the recent period, and its level remains high in international comparison. At the same time, domestic banks are still heavily reliant on external refinancing and on the FX swap market. That is a key source of vulnerability, which is aggravated by a shortening in the maturity of on- and off-balance sheet funding.

Portfolio quality has deteriorated sharply

Non-performing corporate and household loans to the total outstanding amount reached 12.6 per cent and 10.5 per cent respectively at the end of September. Parallel to these, the cost of provisioning as a share of total outstanding amount reached 3 per cent for both corporations and households. Rising corporate loan losses are explained by the weak performance of project financing and, in the household sector, by the pass-through of the strong Swiss franc and high external funding costs into high debt servicing burdens.

Portfolio quality indicators are likely to peak somewhat later than previously expected

In contrast to the earlier expectations the ratio of non-performing loans may peak later than expected, and may slightly exceed 15 per cent next year for both corporations and households. The cost of provisioning as a percentage of total outstanding loans may peak at around 3 in September (decreasing to 2.5-3 per cent by the end of the year) instead of last year in the corporate segment, while in the household segment it may peak at 3-3.2 per cent at the

end of the year. Following that the cost of provisioning may gradually decline as the economy recovers in both segments, due in part to lower loan losses and in part to stronger credit growth.

The loan-loss coverage ratio of non-performing mortgage loans appears to be low

The ratio of non-performing mortgage loans was 7.6 per cent at the end of September. Banks have already set aside provisions for 26 per cent of these non-performing assets. However, the high loan-to-value ratio of above 100 per cent for non-performing loans and the approximately 13 per cent fall in residential property prices since the outset of the crisis make it likely that banks will suffer additional losses in collateral sales.

Maintaining the moratorium on foreclosures and evictions poses various risks

The moratorium on foreclosures and evictions is incapable of managing social problems over the longer term and, moreover, its effects may be contrary to the Government's stated intentions. The moratorium is perceptibly deteriorating borrowers' inclination to service their debts. As the moratorium eliminates the differences between secured and unsecured lending, it impairs the functioning of the mortgage bond market, and at the same time it significantly increases the losses of banks incurred from non-performing mortgage loans. All of this weakens the banking sector's capacity to lend and results in reduced access to funding for economic agents.

Banking sector profitability is deteriorating sharply due to high provisions for loan losses and bank levy

The profitability of domestic banks is falling sharply. Return on assets (ROA) and return on equity (ROE) were 0.4 per cent and 4.5 per cent respectively in the 12 months to September 2010. The decline is even more pronounced if the instalment of bank levy due at year-end is taken into account. Adjusted for that, the ROA and ROE would stand at 0.2 per cent and 2.5 per cent, respectively. Since bank-owned financial corporations are expected to be in the red this year, the consolidated banking group profit may disappear as well. Profitability of Hungarian banking sector is low not only in regional comparison but also compared with the performance of parent banks. Moreover, the divergence in profitability between domestic banks has been on rise. In September 2010, 17 banks posted losses, and their share exceeded the 25 per cent of the banking sector's balance sheet total.

If maintained over a longer period, the bank levy will significantly weaken the competitiveness of the Hungarian banking sector

The introduction of the bank levy in Hungary is not unique in international practice, but its magnitude is significantly higher than in other countries. If maintained over a sustained period, this special levy on domestic financial institutions entails the risk that the domestic banking sector will lose competitiveness and, through this, in its ability to attract capital. All of this may restrict economic agents' access to credit and may ultimately dampen investment and consumption.

Under the stress scenario, the additional need for capital injection is manageable

Banks are only able to partially offset rising loan losses and the bank levy by widening their interest margins. As a result, their income-generating capacity has weakened substantially. Banks' adequate capital position ensures that the financial system is still able to absorb shocks. In the baseline scenario, there is minimal need for capital injection, owing to broadly adequate capital position of the banks. Although banks' capital adequacy ratio has been falling, it still remains above 13 per cent and is expected to rise slightly further by the end of 2011. In the stress scenario, the aggregate capital adequacy ratio would fall in both 2010 and 2011, but its value would still exceed 12 per cent. In the stress scenario, an additional need for a capital injection on the order of HUF 40 billion is likely to arise.

The MNB has made a number of regulatory proposals in order to increase the transparency of loan pricing for households and stimulate stronger price competition

The MNB has repeatedly drawn attention to the problems associated with banks' market power in household lending. This market power is mainly reflected in the pricing of credit products, a point where it is necessary to intervene in the relationship between customer and bank. According to the MNB's regulatory proposals, banks would be allowed to offer the following two products with initial maturity more than 1 year: i) products with interest rates linked to a benchmark interest rate, where the spread over the reference rate is fixed and may not under any circumstance be modified adversely for the customer, and ii) a fixed-interest product, where the customer's interest rate may not be adjusted over a pre-defined period of several years. Consequently, interest rates on products linked to a benchmark interest rate would adjust downwards with the change in the banks' funding cost as well, while risk-averse customers could also choose fixed-rate products.

1 Rising sovereign risks highlight the fragility of the global and domestic economic outlook





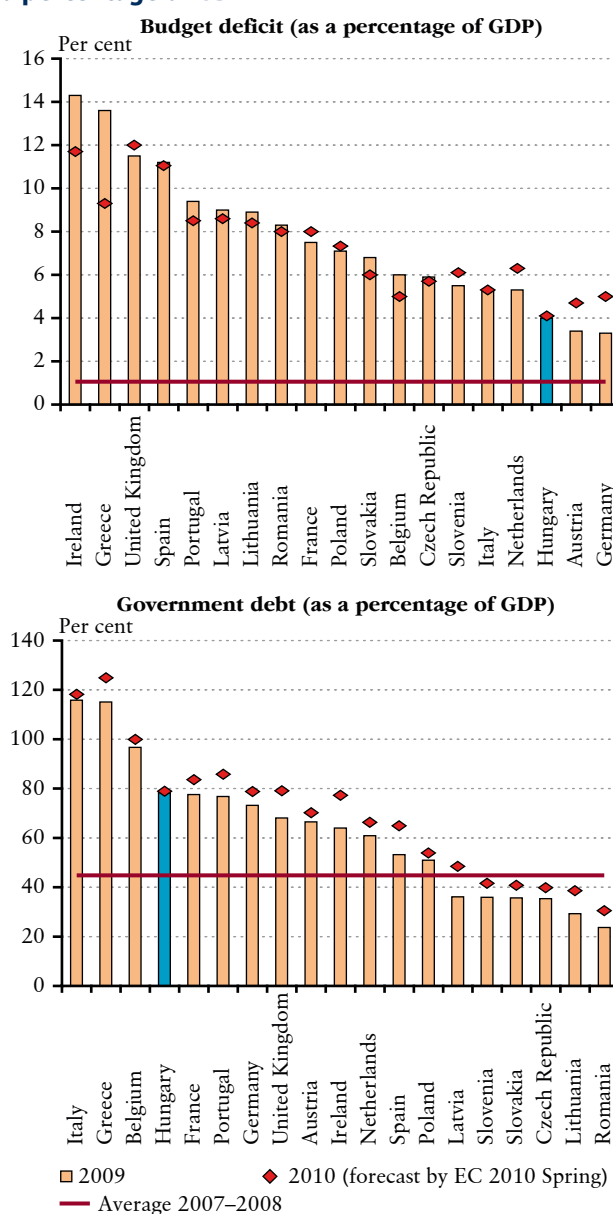
1.1 In developed countries the government's role in stimulating economic growth is likely to weaken

There are marked differences in the economic performance between individual regions. The economic recovery in the developed economies continued during the first half of 2010, but economic growth remains fragile. Global economic growth is driven by demand in developing – primarily Asian – countries, while domestic demand in developed countries remains weak and is recovering more slowly than expected. In Europe, Germany has benefited from global economic environment, while a number of peripheral countries remain in recession or close to it. In the United States, the economic growth during the last four quarters is only partly and sluggishly followed by developments in the real estate and labour markets, which implies that the fundamentals for steady economic growth are not yet in place. In response to slow economic growth, the Fed announced in August its intention to continue its monetary easing policy by purchasing corporate bonds, renewing its holdings of maturing government securities and keeping the benchmark interest rate low. Moreover, there have been huge expectations on the markets about the launch of another round of quantitative easing (nicknamed QE2), scheduled to start in November.

The sustainability of the economic rebound in Europe depends largely on fiscal consolidation. In an effort to put financial markets and the economy back on track, developed countries have mobilised an unprecedented amount of resources since the onset of the global economic crisis. At the same time, the negative effects of excessive state spending have become increasingly obvious. In Europe, particularly in the Mediterranean member states, excessive fiscal deficits have raised question about the sustainability of public debt (Chart 1). In the spring, this led to an escalation of sovereign risks and the tangible threat of a resurgence of the confidence crisis. With a view to strengthening market confidence, governments adopted ambitious fiscal austerity plans and set up the European Stabilisation Mechanism¹. At the same time, fiscal consolidation may delay economic recovery, while more stringent austerity and surging funding costs may well lead to further recession in the countries close to unsustainable fiscal paths. Nevertheless, the peril still exists that a loss of

Chart 1

Government debt and the budget deficit as a percentage of GDP



Source: Eurostat, European Commission.

confidence in these countries can emerge again about fiscal sustainability, as the most recent developments show

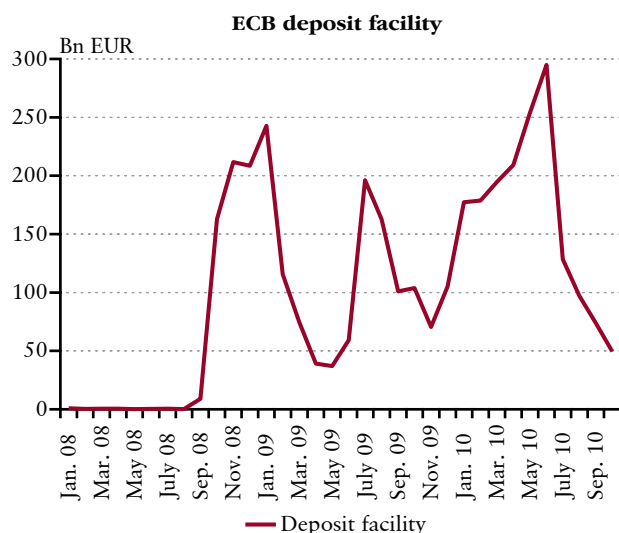
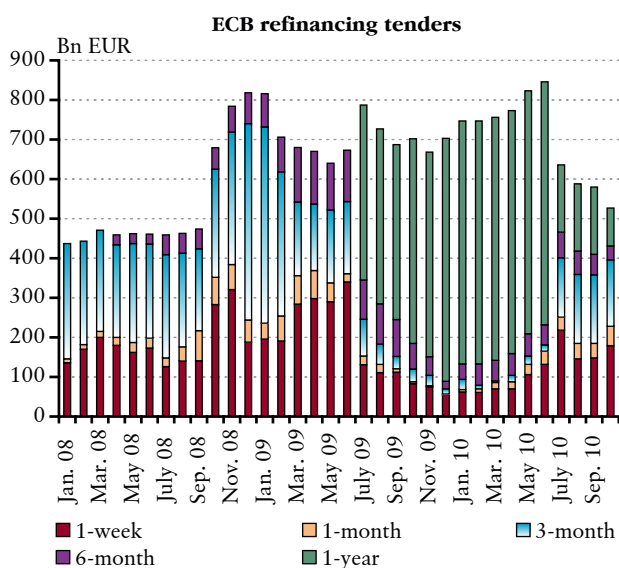
¹ The European Stabilisation Mechanism is based on three elements: 1) a lending facility of EUR 60 billion entrusted to the Commission to make available direct loans; 2) EUR 440 billion for setting up an SPV for financial assistance; 3) IMF contribution: half of the EU funds but at least EUR 220 billion.

in Ireland. Accordingly, in the period ahead overall economic growth is expected to be persistently slow in Europe.

The liquidity tensions in the European banking sectors from the early summer are gradually easing.

Rising sovereign risks not only affected the concerned countries, but also spilled over to the entire euro area via the exposure of the banking sectors to those countries.

Chart 2
Monthly average recourse to the monetary policy instruments of the ECB



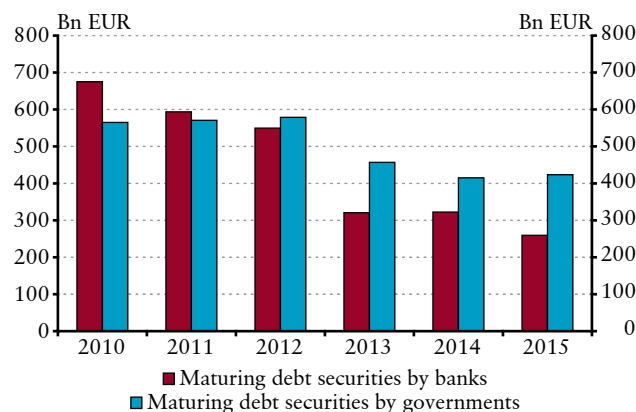
Source: ECB.

Banks' lack of confidence in Mediterranean credit institutions coupled with the uncertainty arising from the sovereign exposure of certain banks resulted in an escalation of liquidity tensions. Banks with ample liquidity, avoiding interbank markets, placed their funds in ECB deposits, while ones with liquidity needs had to resort to the European Central Bank. As a result, recourse to the monetary policy instruments of the European Central Bank reached levels observed at the time of the default of Lehman Brothers in May, and even exceeded those in June (Chart 2). In addition to continuing monetary easing, the ECB attempted to mitigate the liquidity tensions using various supplementary measures.² Disclosure of the stress tests and sovereign exposures of European banks in mid-July reduced tensions significantly. However, many experts on the market considered the stress test scenario too easy to pass and many of them questioned the reliability of sovereign exposure information.

Funding risks remain high in the euro-area banking sector.

In the first half of 2010, the position of large, complex banking groups of the euro area improved considerably. In Q2 their Tier-1 ratio increased from 10.3 percent to 10.6 percent, while the cost of provisioning fell significantly relative to 2009. This was also reflected in the 8.5 percent average return on equity (ROE) ratio. However, the apparently stable situation is surrounded by several

Chart 3
Maturing bank and government bonds in the euro area



Note: Owing to high budget deficits, actual government debt issuance will be larger by about EUR 400 billion as the renewal needs on government debt securities market..

Source: IMF, Bloomberg.

² The ECB continued to conduct low and fixed interest rate tenders with full allocation, kept up the lower criteria for eligible collaterals; moreover, it has been accepting Greek government securities regardless of their credit rating. In addition, the ECB launched sterilised interventions in the government securities markets and reactivated some previously suspended programmes (such as the US dollar and euro liquidity-providing operations with a maturity of one week and six month, respectively). At this moment the longest maturity for the tenders is 3 months, as the ECB no longer provides refinancing facilities with a maturity of six or twelve months.

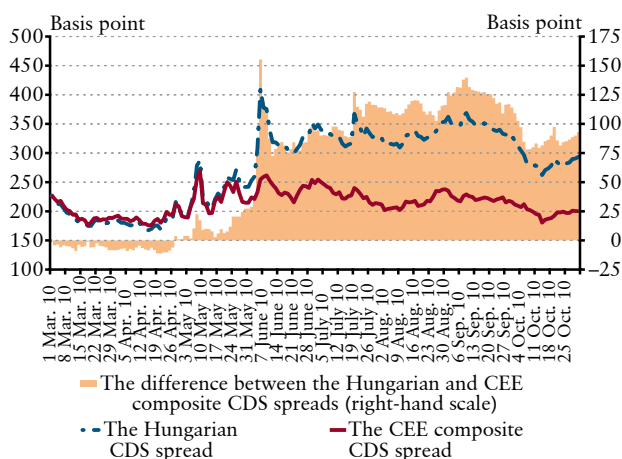
downside risks. The sound profitability of the banking sector is primarily the consequence of the steep yield curve created by monetary easing, which inclines banks toward shorter maturity in financing. As a result, in contrast to the current profitability, substantial interest rate risks have developed, while due to shorter maturities, the maturing of outstanding debt securities by banks will peak over the next three years. In addition, owing to the fiscal expansion in recent years, the substantial renewal requirements of credit institutions (Chart 3) are coupled with sizeable government debt issuance, raising fears about potential crowding out of

the private sector, which might eventually lead to higher funding costs and stronger deleveraging on the asset side of the balance sheet. This is also confirmed by the findings of the ECB bank lending survey, where banks reported that liquidity and debt renewal tensions played a predominant role in tightening credit conditions in 2010 Q2. As for future developments in the liquidity situation, the above risks could be aggravated by the gradual introduction of the Basel III regulatory regime, which will require banks to increase their capital adequacy and the ratio of stable funding in their balance sheets.

1.2 Economic recovery in Hungary is jeopardised by several downside risks

Risk assessment of Hungary has been falling behind the region. Increased risks within the global financial markets have also significantly changed the market perception of Hungary. The market is especially sensitive to developments in Hungary, particularly to those affecting the budget, which is reflected in the significantly higher volatility of both the exchange rate and government securities yields compared to the region. Since early June the risk assessment of Hungary has deteriorated and diverged significantly from that of the region. The Hungarian sovereign CDS spread jumped by 150 basis points in just two days. Since then, the risk premium has not returned to the levels observed in the spring (Chart 4). The market took a negative view of the suspended negotiations with the EU and the International Monetary Fund, and the possible downgrade by major credit rating agencies. However, money market tensions eased considerably in the autumn after the Government committed to meet the 3.8 percent GDP-proportionate budget deficit target for 2010, and the 3 percent target for 2011. However, risk assessment of Hungary has been still falling behind the region.

Chart 4
Relative developments in the Hungarian 5-year CDS spreads

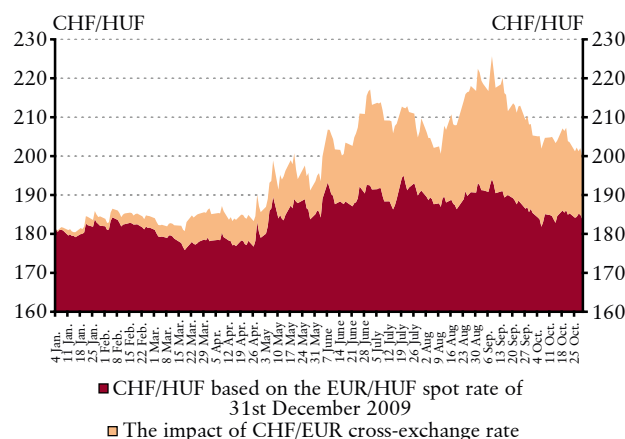


Source: Thomson Reuters.

Economic recovery in Hungary may be hampered by fragile external demand, a sustained strong Swiss franc exchange rate and the structure of the fiscal plans announced by the Government. In 2010 Q1 and Q2 Hungary recorded a low year-on-year growth rate –

below 1 percent –, primarily driven by exports to Germany, and associated with weak domestic consumption and investment. According to the MNB's forecast, the economic growth is expected to accelerate slightly in 2011, owing to a pickup in domestic demand and an improving global environment, coupled with steadily positive external equilibrium position. However, a wide range of risks may adversely affect growth. Fiscal consolidation in developed EU Member States may lead to a tangible decline in external demand, which could decelerate Hungary's export-driven economic growth. In terms of economic activity, changes in the forint exchange rate vis-à-vis the Swiss franc and the euro represent another risk factor. Depreciation of the forint against the Swiss franc substantially weakens the growth prospects of the Hungarian economy (Chart 5). This impact is more pronounced, if the depreciation of the forint is caused by the appreciation of the Swiss franc vis-à-vis the euro. Even though a weaker forint exchange rate may boost the competitiveness of domestic export firms, this is insufficient to offset the decline in domestic demand. This can be weakened by two mechanisms. A weaker forint exchange rate increases the debt servicing burden and reduces the disposable income of households indebted in foreign currency (Box 3), while the losses generated by rising loan defaults may have a negative impact on banks' lending activity (Chapter 6).

Chart 5
The role of the EUR/CHF cross-exchange rate in the developments of the Swiss franc exchange rate against the Hungarian forint in 2010



Source: MNB.

While the economic action plan announced by the government in autumn 2010 may stabilise the short-term fiscal position, it may lead to sustainability problems over the long run.

Based on the government's announcements, the deficit targets for 2010 and 2011 can be achieved. However, due to the stronger demand and the pass-through of windfall taxes to consumers, the action plan points to higher inflation on the whole, while the growth impact is highly uncertain. Higher employment and the announced income tax reduction may boost consumption and the cut in corporate taxes may stimulate investments. At the same time, however, the introduction

of extraordinary taxes reduces the predictability of the tax system and may create a more unfavourable investment environment over the long term, and also reduces the fiscal sustainability for lack of structural measures. The temporary measures affecting the mandatory private pension funds (the second pillar) and measures affecting the overall structure itself (option to voluntarily move back pension savings from the second pillar to the state scheme) may aggravate sustainability worries in relation to the budget. Consequently, due to the aggravation of these risks, the measures may have a negative impact on financial stability (Box 1).

Box 1: Impacts of the government's fiscal consolidation measures announced in the autumn

The impact of the announced government measures on the real economy, the labour market, inflation and budget will be presented in details in the upcoming issue of the Quarterly Report on Inflation scheduled for publication on 1 December. This Box is only aimed at providing a list of the most relevant measures and analysing their effects on financial stability.

One of the most significant elements of the government measures is a substantial cut in personal income taxes. The effect of this on disposable income may be the most relevant to the financial system.

On the one hand, the new personal income tax regime may influence household savings and borrowings. In principle, growth in disposable income increases households' consumption and inclination to borrow. However, the already high payment-to-income ratio of domestic households suggests that households are more likely to finance increased consumption from their income, rather than borrowing additionally. In terms of credit supply, the tax cut may generate an increase in savings (upper-income households probably have a higher inclination to save) which, by boosting banks' funding resources, could improve lending capacity. Nevertheless, even this channel may fail to induce a substantial upswing in lending, as reduced lending ability is not the restrictive force behind banks' reluctance to lend. Taken as a whole, the changes in the tax regime are thus not expected to generate major changes in the dynamics of household lending.

On the other hand, amendments in personal income tax and pension contributions will influence the solvency of household loan debtors. On commission by the MNB, in June 2010 GfK Hungaria Market Research Institute carried out a survey of 1,000 persons³. In the survey, 34 per cent

of the respondents had bank loan. According to our calculations, based on their financial, income and demographic characteristics, the amendments to the taxation and pension contribution will result in better income positions in aggregate, albeit only slightly. The income position of 43 per cent of the respondents with bank loan would improve, for 39 per cent of them would worsen, while for 18 per cent of them it would remain unchanged. Hence, on average high income respondents have larger debts, and they will be better off with the tax amendments. Since 50 per cent of the bank loan portfolio is concentrated in wealthy households, the amendments to the taxation system will have a positive effect on portfolio quality on the whole.

Corporate tax reductions constitute another major part of the measures. This may improve firms' willingness to invest which, in turn, may have a positive impact on demand for investment loans. On the other hand, since the windfall taxes imposed on certain sectors reduce the predictability of the economic environment, their effect on economic growth is uncertain over a longer-term horizon. In addition, given that the introduction of windfall taxes is a one-off item, it will not be sufficient to promote fiscal sustainability over the long run.

The same is true for the two amendments in the pension system. One measure is a temporary suspension of payments by the government to the mandatory private pension funds as of November for 14 months. The second measure consists of allowing private pension fund members to return to the state scheme, and eliminating mandatory private pension fund membership for new entrants to the job market. These measures represent a potential risk if the government intends to finance the fiscal deficit from the pension fund reserves, which would increase risks to the sustainability of public finances.

³ There is a need to draw attention to the biased nature of the income categories derived from the survey. On the one hand high-income households are underrepresented. On the other hand the households may tend to underreport their real income situation in this kind of surveys, or they may misreport by substituting household income with personal income.

2 Corporate and household lending of domestic financial intermediaries remain subdued



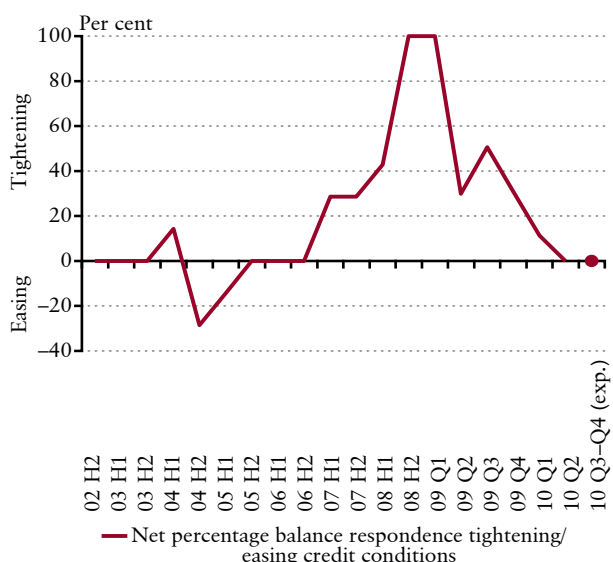
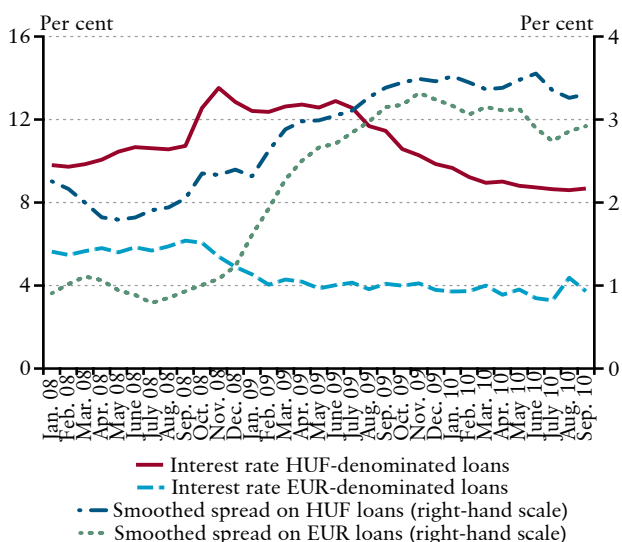


2.1 The decline in corporate lending may be partly attributed to credit supply constraints

Credit supply constraints are still perceivable and most credit conditions have not eased during the course of the year. According to the MNB lending

Chart 6

Average interest rates and interest rate spreads on corporate bank loans and changes in credit conditions



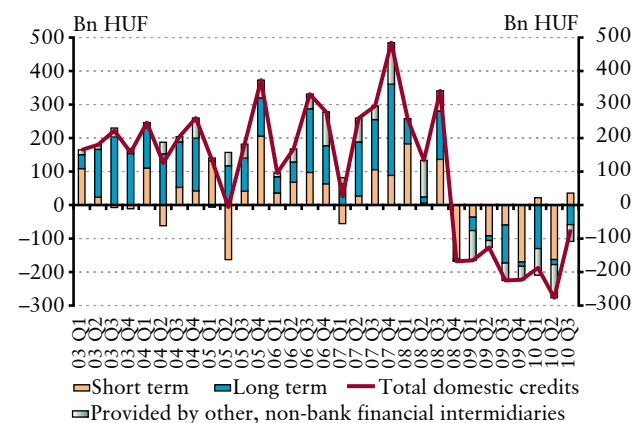
Note: Interest rate spread is measured against three-month interbank interest rates.

Source: MNB.

survey⁴, a tightening cycle of nearly four years came to an end in mid-2010. But non-price credit conditions are still not expected to ease this year. Among price factors, the average interest rate spread⁵ on forint-denominated corporate loans remained unchanged relative to the end of 2009, amounting to 330 basis points in September 2010. In the case of foreign currency denominated loans, the average spread stands around 290 basis points, which implies a 30 basis-point decline compared to the end of 2009 (Chart 6). The dichotomy previously observed in the corporate interest rate spread still applies. Indeed, the interest rate spread on domestic currency denominated loans in Hungary exceeds that of the Visegrád countries by 100 basis points, whereas the interest rate spread on foreign currency denominated loans is extremely low in regional comparison (declining further in 2010). This dichotomy may be explained by the segmented nature of the credit market: loans denominated in foreign currency are only available – even with relatively low spread – for large exporters with good creditworthiness.

Chart 7

Net quarterly credit flow of corporate loans by the domestic banking sector and other financial intermediaries



Note: Credit institutions and branches of foreign credit institutions in Hungary. Seasonally unadjusted change in the outstanding amount, adjusted for exchange rate effects. The final data point for non-bank loans is an estimate.

Source: MNB.

⁴ Senior loan officer survey on bank lending practices, August 2010.

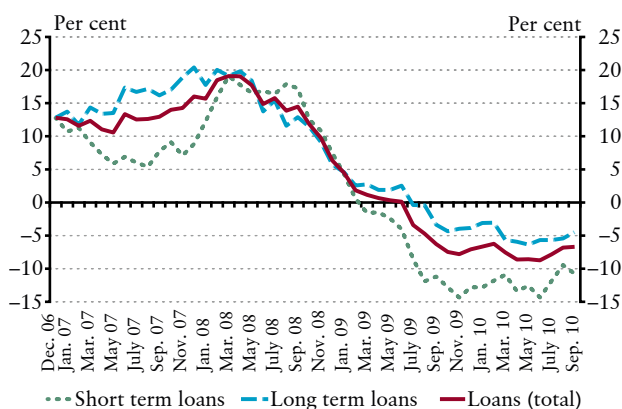
http://english.mnb.hu/Penzugyi_stabilitas/publications/hitelezesi_felmeres/mnben_hitelezesi_felmeres_201008.

⁵ The difference between the weighted average interest rate on new corporate loan volumes and the three-month interbank interest rate.

The contraction in corporate lending slowed in the third quarter. In Q1 and Q2 domestic corporate lending declined by HUF 188 billion and HUF 277 billion, while the contraction in Q3 only amounted to HUF 73 billion (Chart 7). The contraction continues to be faster for short-term bank loans than for long-term loans. While there is no need for substantial investment to increase ongoing corporate production as capacity utilisation is low, there is demand for working capital loans. Consequently, the significant decline in short-term loans suggests that credit supply constraints may also contribute to the contraction in corporate lending (Chart 8).

Chart 8

Annual (exchange rate adjusted) growth rate of banks' corporate loan portfolios by original maturity

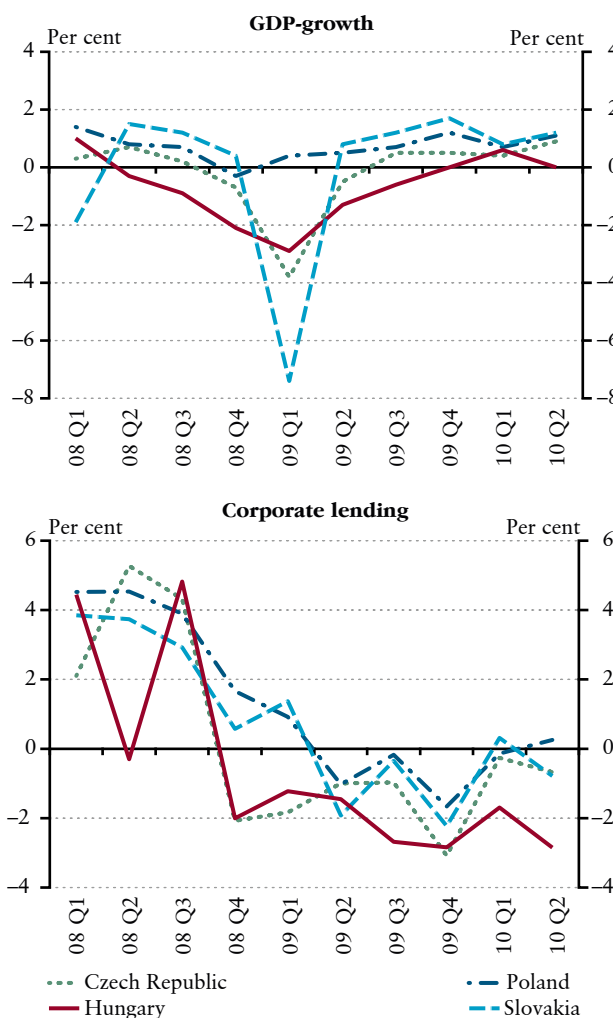


Source: MNB.

In a regional comparison, Hungary experienced the largest decline in corporate lending by banks. In line with previous crises, corporate loans tend to follow the real economic turnaround with a lag across the CEE region (Chart 9).⁶ The decline in lending, however, is greater in Hungary measured as a proportion of GDP. This can be partly attributed to the growth structure. Despite the upswing in export sales, domestic sales remain weak. At the

Chart 9

Output and corporate lending in the Visegrád countries



Note: Quarter-on-quarter percentage changes of real GDP; seasonally adjusted data. New loan volumes to non-financial corporations as a percentage of quarterly nominal GDP.

Source: Eurostat, national central banks.

same time, this trend may also reflect strong credit supply constraints.⁷

⁶ For more details about the relationship between lending to the private sector and banking crises, see: Felcser, D. and Körmendi, Gy. (2010): "International experiences of banking crises: management tools and macroeconomic consequences", *MNB Bulletin*, June 2010.

http://english.mnb.hu/Kiadvanyok/mnben_mnbszemle/mnben_mnb_bulletin_june_2010.

⁷ For more details, see Fábíán, G., Hudecz, A. and Szigel, G. (2010): "Decline in corporate lending in Hungary and across the Central and East European region during the crisis", *MNB Bulletin*, October 2010.

http://english.mnb.hu/Kiadvanyok/mnben_mnbszemle/mnben_mnb_bulletin_october_2010.

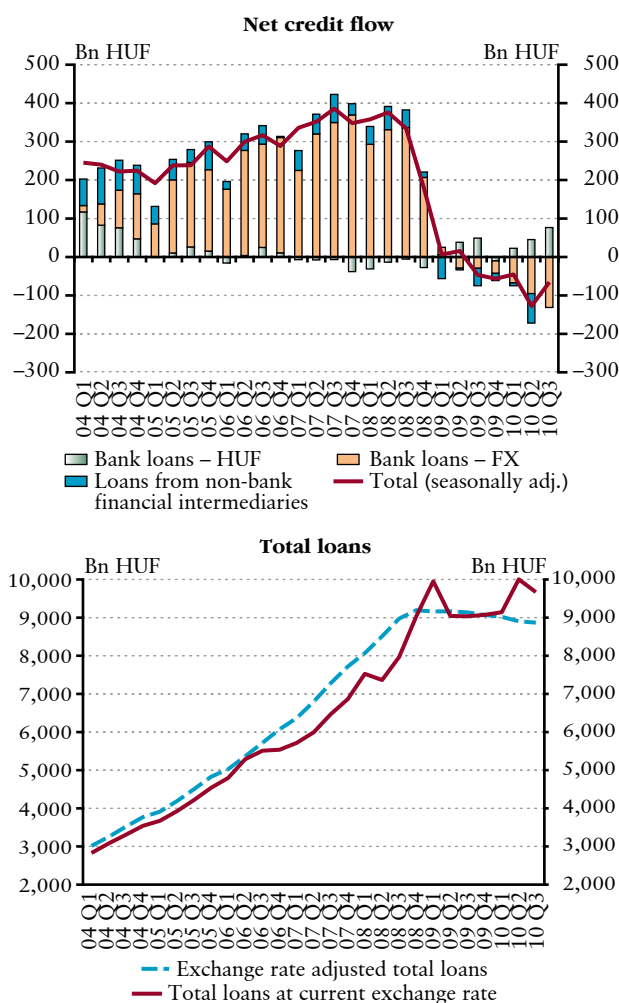
2.2 Foreign currency lending to households has faded but the high share of the foreign currency dominated loan portfolio remains a major source of vulnerability

Lending to households is continuously declining, but the slowly shrinking foreign currency loan portfolio remains a key risk. In the first three quarters, the net credit flow of domestic banks declined by a total of HUF 150 billion⁸ in the household segments (housing and consumer loans). Other financial intermediaries also continued to reduce lending to households as the decline recorded for the first three quarters amounted to approximately HUF 80 billion (Chart 10). As confirmed by the lending survey,⁹ banks' tightened their non-price conditions in 2010 H1 in line with the regulatory changes. On the demand side, aggregate demand for loans remains rather subdued, but there has been a pronounced shift in the structure of demand towards forint-denominated loans. Nonetheless, despite continuous net repayment the outstanding amount of household loans in banks' balance-sheets increased by around HUF 500 billion during the year, due to depreciation of the forint. In other words, regardless of the fact that households' repayments consistently exceed new borrowings, total debt is not only far from declining, but has soared to unprecedented heights.

In respect of new lending by banks, the share of forint-denominated loans increased gradually until September and by the end of the year foreign currency lending may virtually disappear. The share of forint-denominated loans in new loan volumes already started to increase in 2009. This tendency resulted mainly from a marked contraction in newly extended foreign currency loans, while new forint-denominated loans remained broadly unchanged. However, as banks started to introduce increasingly favourable forint loan products from the end of 2009, in 2010 the annual percentage rate (APR) of forint-denominated mortgage loans was only 2 percent higher on average than that of foreign currency loans. As a result – and encouraged further by the Decree on Prudent Lending–, 2010 saw an upswing in new loan volumes denominated in forint on its own (Chart 11).¹⁰ By August 2010 (even

Chart 10

Net credit flow and the outstanding amount of household loans extended by the domestic banking sector and other financial intermediaries



Note: Credit institutions and branches of foreign credit institutions in Hungary. Net credit flow adjusted for exchange rate effects; for Q3 2010 non-bank data are estimates. The exchange rate adjusted outstanding amount is calculated on the exchange rate prevailing at the end of December 2009.

Source: MNB.

⁸ In simple terms this means that the household sector spent around this much more on repayments than on taking out new loans.

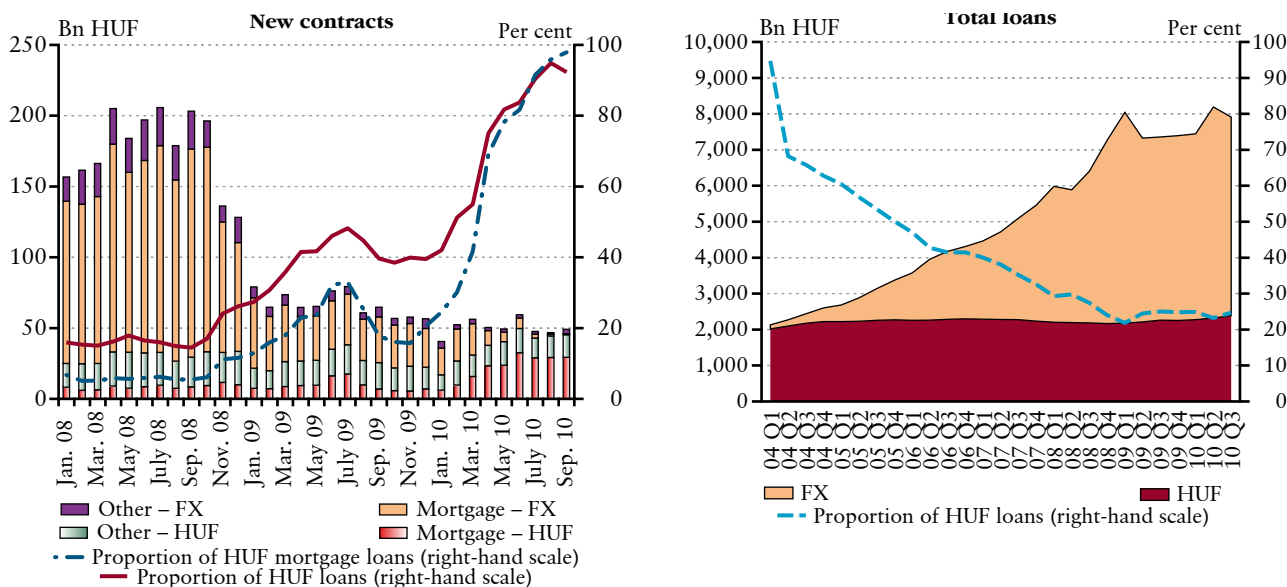
⁹ Senior loan officer survey on bank lending practices, August 2010.

http://english.mnb.hu/Penzugyi_stabilitas/publications/hitelezesi_felmeres/mnben_hitelezesi_felmeres_201008.

¹⁰ For more details, see Box 2.

Chart 11

Composition of new household loan agreements in the banking sector and the composition of total household loans



Source: MNB.

preceding the ban on mortgage lending denominated in foreign currency) forint-denominated loans essentially crowded out lending in foreign currency from the market. In addition, as the volatility of the exchange rate probably raised customers' awareness of exchange rate risks, growing risk aversion may have also contributed to the increased

demand for forint-denominated loans. Complying with the ban on foreign currency mortgage loans effective from August, banks withdrew foreign currency-denominated mortgage loans from the market, which may practically eliminate foreign currency lending by the end of the year (Box 2).

Box 2: Regulatory measures aimed at restraining household indebtedness

In 2010, two regulations came into effect for the purpose of restricting excessive household borrowing and indebtedness – especially in foreign currency.

1) The Government Decree on Prudent Lending¹¹ came into force on 1 March 2010, and in part on 11 June 2010, and its provisions cover household loan contracts extended thereafter. The definition of maximum loan-to-value ratios for retail mortgage loans and vehicle financing loans is among the most important measures of the decree. Accordingly, the maximum LTV ratio for forint loans is 75 per cent, while it is 60 per cent for euro-denominated loans and 45 per cent for loans denominated in other foreign currencies. The relevant loan-to-value limits are somewhat higher for vehicle financing loans and residential real estate leasing: 80, 65 and 50 per cent respectively for

forint, euro and other foreign currency loans.¹² Another important measure of the Decree, intended to limit the excessive indebtedness of households, effectively puts a ban on purely collateral-based lending. The regulation requires banks to set up creditworthiness limits for individual loan applicants based on proportion to monthly income. The limit for euro-denominated loans is 80 per cent, while at loans extended in other foreign currencies the limit is 60 per cent of the creditworthiness limits of HUF-denominated loans.

2) As of 13 August 2010, the Act banning foreign currency mortgage lending¹³ prohibited entering a lien upon a real estate in the Land Register if claiming such a right is a result of mortgage loan contract in foreign currency by natural persons. Although this measure practically eliminated foreign currency mortgage lending for households in

¹¹ Government Decree 361/2009. on the conditions of prudent retail lending and creditworthiness examination.

¹² In addition, the decree defined a maximum maturity for vehicle financing loans at 7 years.

¹³ Act XC. of 2010 on the creation and amendment of certain laws on economic and financial issues.

Hungary, it did not affect foreign currency-denominated lease structures. Foreign currency home leases remain a legal, albeit so far rarely used, market product.

As regards foreign currency loans, the LTV limitations on new mortgage loan disbursements prescribed by Government Decree on Prudent Lending were rendered redundant by the Act banning foreign currency mortgage lending. But LTV limits of the Decree remained effective for forint-denominated mortgage loans as well as vehicle financing loans and residential real estate leases granted in different foreign currencies.

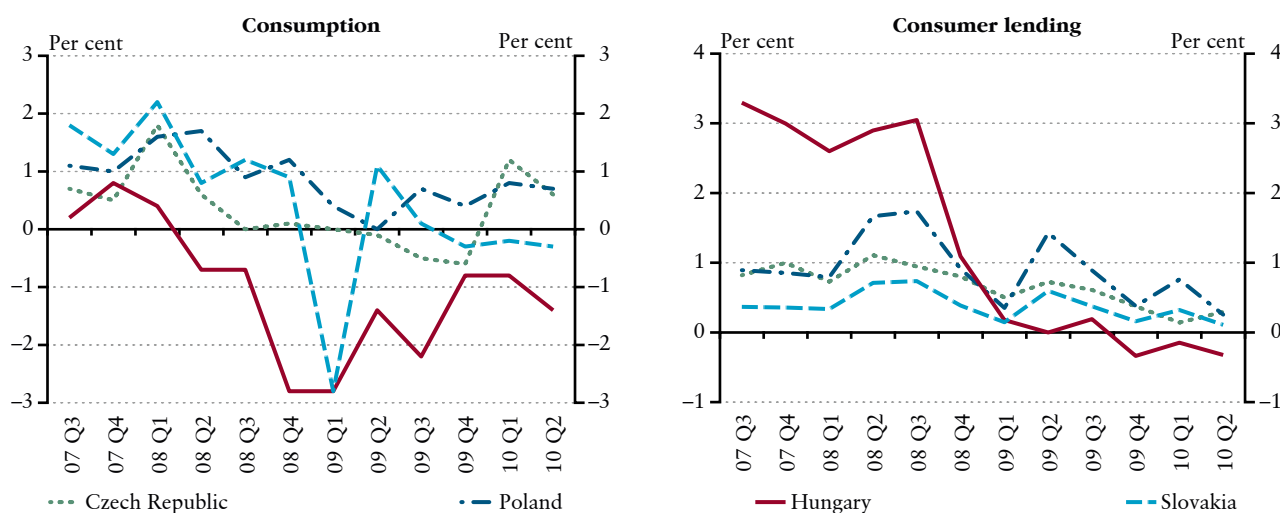
For the time being, the two legislative changes have had little impact on the dynamics of the household credit growth as both credit demand and credit supply have reached a trough in the wake of the crisis. The restrictive power of the measures may emerge when – in parallel with the economic recovery – the demand for loans picks up and banks begin to ease credit conditions. In this regard it is important to stress that, while the total ban adopted in August restricted foreign currency lending only, the Government Decree on Prudent Lending is an effective measure to safeguard against the build-up of excessive indebtedness even in the case of forint loans.

The decline in banks' household lending is significant in regional comparison. In times of economic crisis, household lending should play an important role in maintaining, to a certain degree, the consumption of households, thereby smoothing the consumption path, despite the temporary decline in their income. It was already clear during the first year of the crisis that household lending in Hungary could not play such a role. Chart 12 indicates that Hungary recorded the largest decline in

consumer lending among the Visegrád countries and accordingly, the fall in consumption is much more significant compared to the other countries. Owing to the depreciation of the forint against the Swiss franc, lending is not only far from supporting consumption smoothing but, by swelling debt servicing burdens, it further undermines the already subdued consumption (Box 3). This contributes strongly to the duality of domestic economy featuring strong growth in exports amid weak domestic demand.

Chart 12

Consumption and consumer lending in the Visegrád countries



Note: Quarter-on-quarter percentage changes in consumption; seasonally adjusted data. Consumer loans from banks to households as a percentage of quarterly nominal GDP.

Source: Eurostat, national central banks.

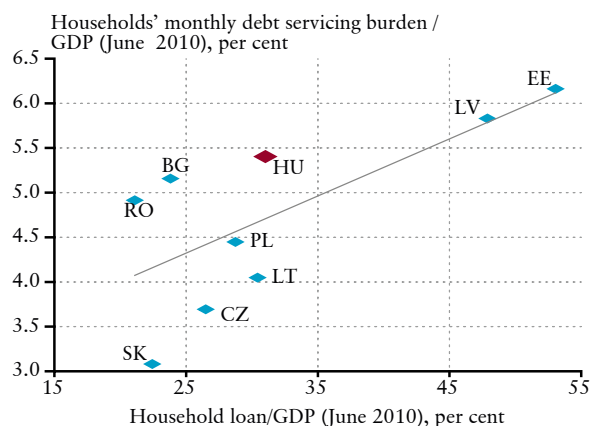
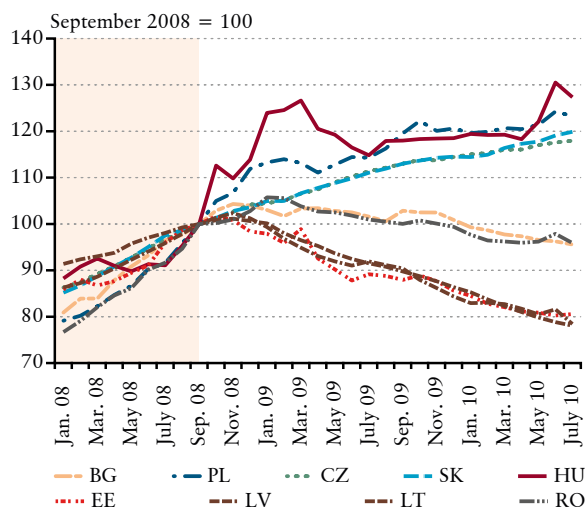
Box 3: Do we spend too much on monthly payments?

According to our estimate, households' aggregate debt burden¹⁴ has increased sharply in Hungary since the outbreak of the crisis, and this growth is considered remarkably high even in regional comparison (Chart 13). With respect to developments in aggregate debt servicing burdens since October 2008, three groups can be distinguished in the region. The sharply contracting outstanding amount of household lending coupled with record low interest rates perceivably reduced the monthly payment burden in the Baltic States. Payment burdens

also declined, albeit to a lesser degree, in the two new EU Member States, Bulgaria and Romania. However, these two countries experienced two opposing developments. In Romania the loan stock contracted with slightly rising interest rates, whereas Bulgaria recorded a modest increase in the loan stock with falling interest rates. The Visegrád countries have experienced the largest rise in the aggregate monthly debt servicing burden of households since the onset of the crisis. While the rise primarily reflected a spike in household lending in the Czech Republic, Slovakia and Poland, lending in fact declined in Hungary, and the increase in debt servicing burdens stemmed from rising interest rates and the appreciation of the Swiss franc. Examining the different debt burden levels we may conclude that the GDP-proportionate aggregate debt servicing burden of Hungarian households is high in regional comparison.

Chart 13

Changes in households' monthly debt servicing burden and households' debt-to-GDP ratio in regional comparison



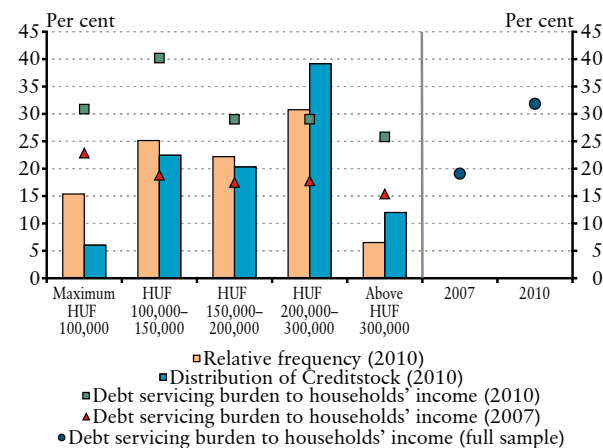
Note: The above data are based on estimates. The calculation of households' debt burden is based on solely banking loans. As APR indicators are not available for the majority of the countries, our calculations were based on interest and principal instead of APR for each country.

Source: Websites of national banks.

There is no regionally comparable information on debt servicing burden of households having loans related to their income. Based on the previously mentioned GfK customer research survey we may conclude that in Hungary the debt servicing to income of the households is relatively high, at 32 per cent (Chart 14). Based on an older survey this ratio stood at 19 per cent in 2007.¹⁵ The poorest households' debt servicing to income is around 30 and 40 per cent. Based on our examination, the number of poorer, presumably liquidity constrained households might be overrepresented in the survey. At the same time, wealthier households have a larger part of outstanding loans, whose debt servicing burden-to-income ratio is smaller than average.

Chart 14

Debt-service-burden to income ratio by households having loan



Note: On the horizontal axis quintiles by net income in 2010 of households are indicated.

Source: GfK, MNB.

¹⁴ For lack of relevant data, our calculations are solely based on the interest and principal portions, therefore, the published figures should be considered as broad estimates. Nevertheless, even though the results may be somewhat different when accounting for all burdens, our calculations should be fairly reliable as regards the relative position. For lack of available regional data, our calculation of the debt servicing burden was based on average maturities fixed in time and estimated for each product group.

¹⁵ See Chart 2-29. Report on Financial Stability April 2008. http://english.mnb.hu/Kiadvanyok/mnben_stabil/mnben_stab_jel_20080415.

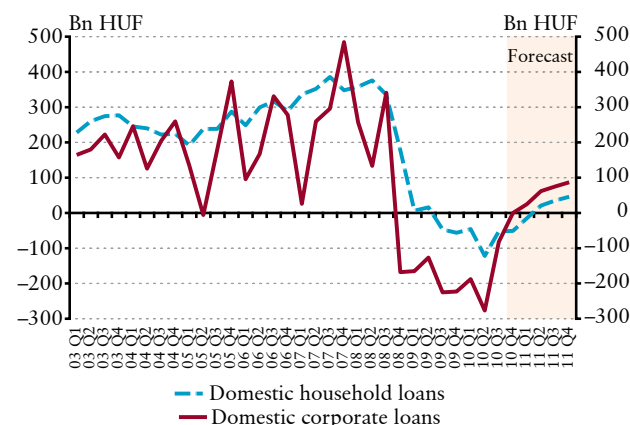
2.3 The domestic borrowing of the private sector may only start to pick up next year, but there are strong downside risks

Corporate lending may rebound as early as the beginning of 2011. As external demand picks up, export-oriented companies' demand for loans may increase. Improving sales figures and growing output may have a positive effect on firms' creditworthiness, thereby facilitating access to credit (even with unchanged credit conditions). Similarly, the corporate tax cuts scheduled for next year may also result in stronger demand for loans. In view of the expected upturn in demand for loans, on the whole, the corporate loan portfolio may start to grow as early as next year (Chart 15). At the same time, the economic recovery in the euro area is still fragile, which poses some risk to the rebound in lending in 2011. Governments have announced massive austerity plans, which could increase the risk of persistently slow economic growth in the euro area. Another source of risk is that tightening credit supply constraints might delay the turning point in corporate lending. Credit supply can be materially influenced by two risk factors. Preserving the levy imposed on banks could severely lower the regional competitiveness of the domestic banking sector and may trigger a reallocation of parent bank and market funds to other countries. This, in turn, would severely tighten the funding positions of domestic banks. Another important factor to consider is an unexpected deterioration in the money market environment. Through deteriorating portfolio quality, higher funding costs and the depreciation of the forint exchange rate would increase lending losses, which would reduce banks' capital adequacy. Diminished funding and capital adequacy may in turn lead to the worsening of banks' lending ability leading to deleveraging (Chapter 6).

Further balance sheet adjustments by the banking sector represent a potential risk, which may result in restrained corporate lending. Banks' balance sheet adjustment can take place through a reduction of liquid assets, loans and other assets. Within the loan portfolio banks are most likely to restrain lending to the private sector, which would mainly affect corporate loans. Firstly, as the average maturity of corporate loans is significantly shorter than that of household loans, restraining corporate lending is the best solution if the need arises for a quick adjustment. Secondly, corporate loans typically have smaller

Chart 15

Forecast for domestic lending



Note: Net flows adjusted for exchange rate effects.

Source: MNB.

average interest margins than household loans, which provide a justification for banks' restrained corporate lending activity from a profitability perspective as well. Thirdly, among the risk-weighted assets (i.e. the denominator of the capital adequacy ratio), a higher weighting is assigned to corporate loans; in other words, cutting corporate lending per unit creates a higher increase in the capital adequacy ratio than a reduction in household lending per unit.

Lending to households is not expected to rebound until mid-2011. Notwithstanding the expected increase in households' income in the wake of the personal income tax cuts next year, a recovery in household lending is considerably constrained, from the demand side, due to households' substantial indebtedness and the resulting protracted adjustment process. Considering the supply side, a recovery may be hindered by the lending regulations effective from this year (Box 2). Moreover, potentially the bank levy may have significant effects if banks pass on the associated costs to existing and new customers in the form of higher interest rates on loans. In view of the above, credit growth in the household segment is not likely to materialise until the middle of 2011, and only at a very moderate pace after that.

3 Maturity of external funds shortens

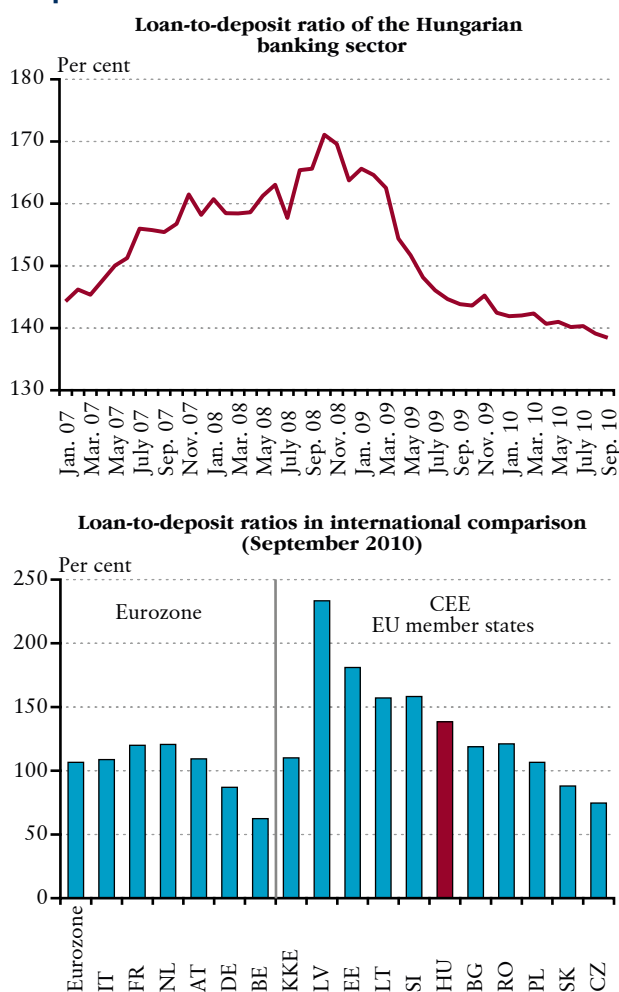




The loan-to-deposit ratio remained broadly unchanged at a steadily high value in 2010. In 2009, the loan-to-deposit ratio – a measure of the domestic banking sector’s reliance on wholesale funds – declined in line with on-balance sheet adjustments and the improvement in the private sector’s position vis-à-vis the banking sector. However, from the beginning of 2010 the pace of decline decelerated significantly. This deceleration is mainly due to the fact that the private sector’s position vis-à-vis the banking sector improved to a lesser degree in 2010 than in the previous year. Although households’ saving inclination improved, this was increasingly reflected mostly in the purchase of shares and mutual fund units. Overall, increasing disintermediation prevented the continued, significant improvement of the loan-to-deposit ratio, which remained high in international comparison (Chart 16).

Chart 16

Loan-to-deposit ratio of the domestic banking sector and loan-to-deposit ratios in international comparison

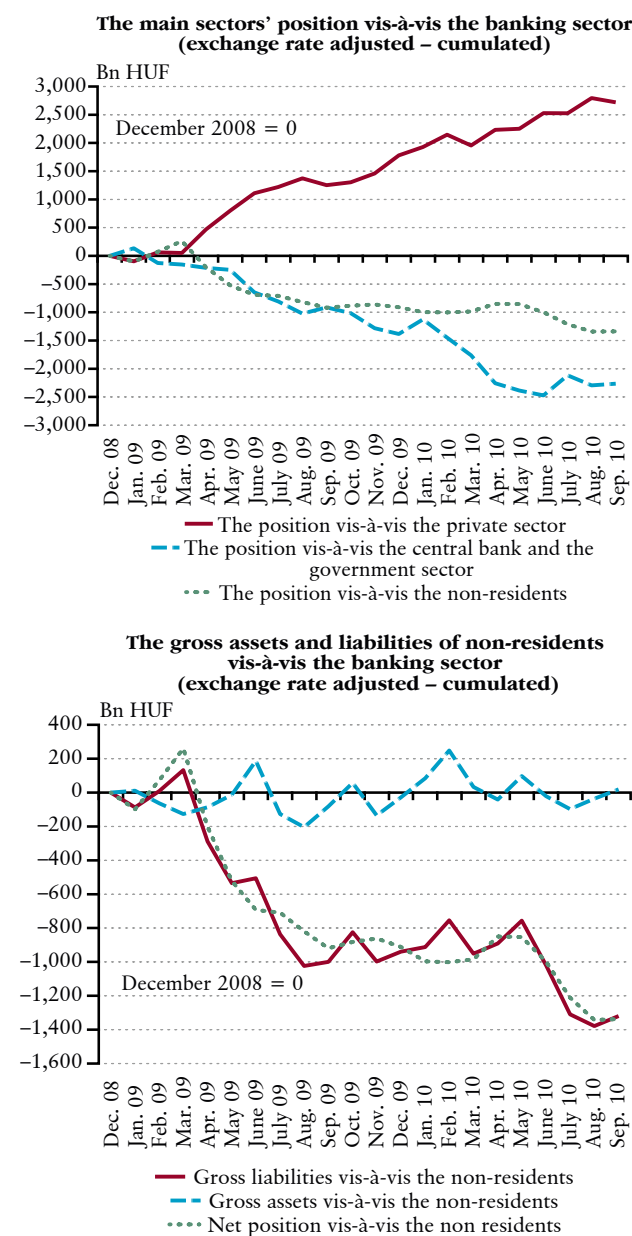


Source: ECB, MNB.

The reliance of the domestic banking sector on external funding remains high. Notwithstanding the significant improvement observed in the loan-to-deposit ratio in 2009 and the slight decrease in 2010, the reliance of the domestic banking sector on external funds remained broadly unchanged in the period under review. Indeed,

Chart 17

Changes in the net and gross external funds of domestic banking sector



Note: The positive value on the upper chart indicates that in net terms the specific sector increased its funding to banks. The remaining sum can be explained by other accounting items (accruals and deferrals, revaluations) and changes in equity. Position vis-à-vis non-residents on the lower chart indicate external liabilities minus external assets.

Source: MNB.

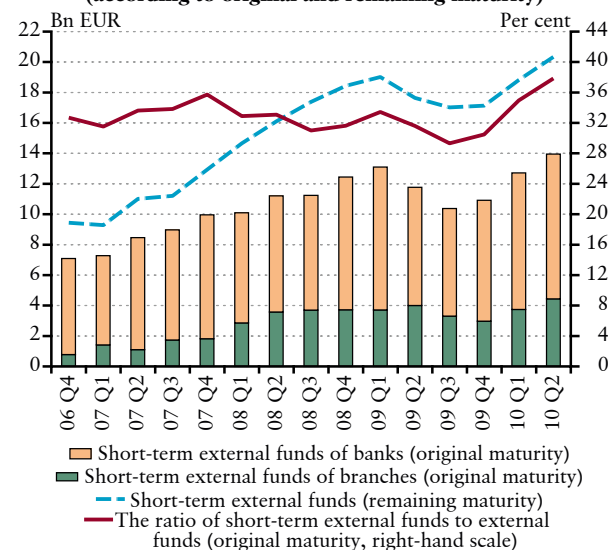
from 2009 H2 to May 2010 the financial position of the private sector improved roughly to the same extent as the position of the general government sector deteriorated vis-à-vis the banking sector. Accordingly, the magnitude of net external funds eventually stagnated. On the whole, the above process implies that indirectly, it was the non-resident sector that financed the increase in the outstanding amount of MNB bills, and hence the resulting deterioration in the general government position. Indeed, in principle, an improvement in the position of the private sector would have resulted in a steadily declining reliance on external funds.¹⁶ From May 2010, the banking sector's claims vis-à-vis the MNB (central bank deposits and MNB bills) started to decline and, parallel to a net outflow of external funds, they fell by HUF 400 billion in July (Chart 17). In part this reflects the fact that, by purchasing MNB bills directly – dodging the banking sector – from the central bank, the non-resident sector funded the (broad) general government instead of the domestic banking sector.

The high vulnerability arising from a strong reliance on external funding is exacerbated by the shortening of maturities. Despite the recently observed outflow of external funds, the banking sector's reliance on external funds remains strong. The resulting vulnerability may be exacerbated by shorter maturities. By original maturity, between the end of 2009 and 2010 H1 the share of short-term liabilities within external liabilities rose from 30 percent to 38 percent, while by remaining maturity, the ratio rose from 48.6 percent to 55 percent (Chart 18). Indeed, domestic banks either did not replace their maturing external funds or they replaced mainly with short-term funds.¹⁷ Inflows of short-term external funds between the end of 2009 and June 2010 were primarily related to foreign branches (EUR 1.3 billion) and a few large banks (EUR 1.4 billion). Since onset of the crisis in October 2008, the liquidity tensions in the European markets have increased the cost of long-term funds to a larger extent than that of short-term funds for the parent banks. Although some corrections have taken place in recent months, the term premium is still considerably higher than its pre-crisis levels. Shorter-term funding is also encouraged by the fact that euro-area parent banks can easily obtain short-term funds from the European Central Bank. As regards the short-term external borrowing of foreign branches, it might be the consequence of rising spread on implied yields of FX swaps, which has been observed since spring 2010: indeed, foreign branches can obtain on-balance sheet short-term external funds at favourable prices and, in case of a surge in implied

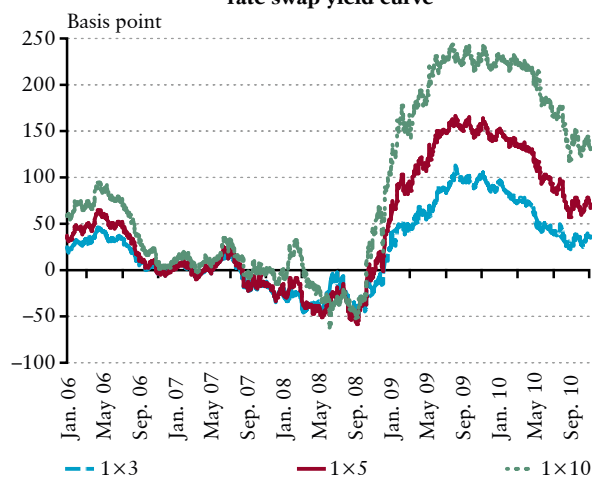
Chart 18

Changes in the short-term external liabilities of the banking sector and the term premia on long-term foreign currency liabilities

Short-term foreign funds of the domestic credit institutions (according to original and remaining maturity)



Term premia derived from the euro interest rate swap yield curve



Note: The time series associated with the specific maturities on the lower chart indicate the extent to which the longer-term euro interest rate swap yield exceeds the shorter-term euro interest rate swap yield.

Source: Bloomberg, Thomson Reuters, MNB.

yield spreads, they can forward the obtained foreign currency liquidity to domestic banks at higher prices.

Parallel to the decline in and shortening of external liabilities, the remaining maturity of swap contracts is also becoming shorter. In parallel with the on-balance

¹⁶ Another way to look at it is that, the general government was increasingly funded by the private sector through the banking sector.

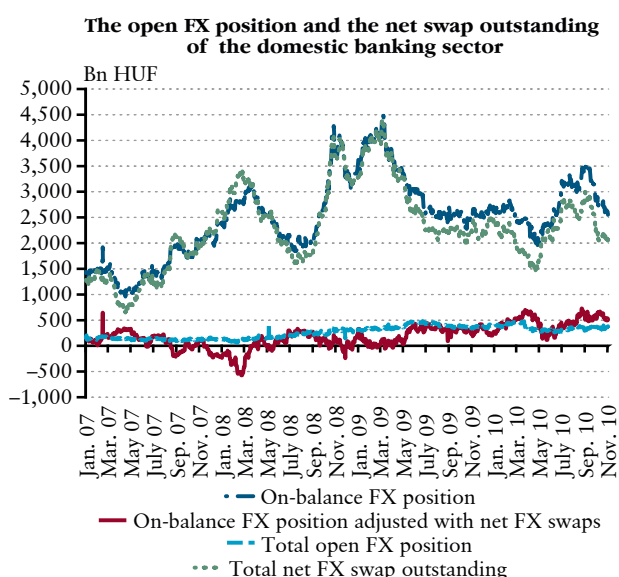
¹⁷ In 2010 H1 the renewal rate of long-term liabilities decreased, renewal rate for short-term liabilities is higher than for longer-term loans.

sheet adjustment, the open on-balance sheet FX position of the banking sector as well as the total net FX swap outstanding have declined since early 2009, and simultaneously, banks were able to lengthen the maturity of swap transactions. Nevertheless, from mid-2010 – essentially in parallel with the outflow of external liabilities – the net FX swap outstanding started to increase. Banks financed the redemption of external foreign currency denominated funds by using their forint liquidity to enter into swap

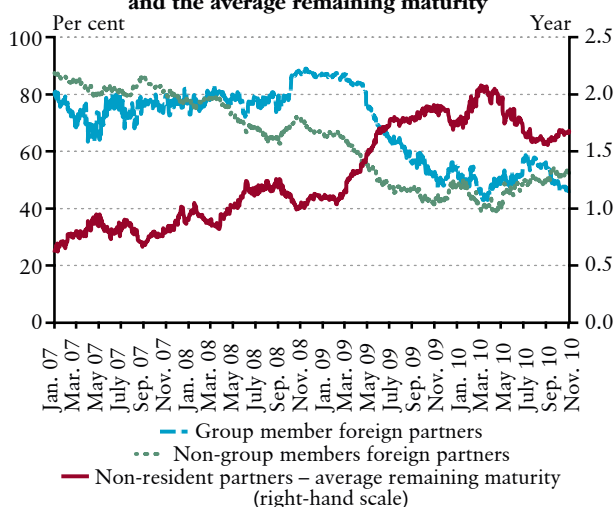
contracts and by obtaining foreign currency liquidity. In addition, the margin call requirements (CSAs, Credit Support Agreements) stemming from the depreciation of the forint exchange rate over the period under review may have also contributed to the expansion of the outstanding amount of swaps. In the context of increasing demand on swap markets and rising risk premia, foreign currency liquidity tensions re-emerged. Implied forint yields dropped below the corresponding maturity interbank forint yields initially along longer maturities, and subsequently at the overnight maturities as well. Given that the swap spreads were wider for the longer maturities relative to the shorter maturities, the average remaining maturity of the swap portfolio also began to shorten. The same trend was observed for all bank types (subsidiaries of non-resident banks, banks without foreign parent) and all partner types (transactions with domestic, non-resident group member or non-resident non-group member partners) (Chart 19). Rollover risks arising from the shorter term of the contracts could be mitigated by the steadily high ratio of transactions made with parent banks (around 40 percent). Moreover, the appreciation of the forint exchange rate has also contributed to a decline in demand for swaps since September 2010.

Chart 19

The banking sector’s net currency swap outstanding, the open FX position and remaining maturity of FX swap transactions



The ratio of swap outstanding within one-year remaining maturity by partner type and the average remaining maturity



Note: On the upper chart an increase in the net swap holdings of domestic banks indicates swap deals with a short forint spot leg. The swap stock is the sum of forward legs calculated at actual foreign exchange rates. On the lower chart, the average and within one-year maturity relates to the gross portfolio.

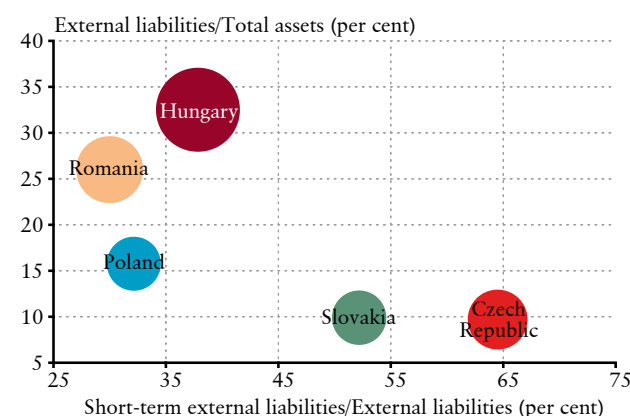
Source: MNB.

The ratio of short-term external liabilities to total assets remains high. The reliance of the domestic banking sector on foreign external funding is considered high (Chart 20). The associated risks may be mitigated by the high share of parent bank funding within external liabilities, which, has steadily grown to 64 percent by September 2010. By original maturity, the share of the

Chart 20

Role of external funding in the region

(June 2010)



Note: The chart indicates the share of short-term external liabilities by original maturity. The size of the bubbles indicates the ratio of short-term external liabilities to total assets.

Source: IMF, World Bank, ECB, websites of the central banks.

domestic banking sector's short-term external liabilities is not considered outstandingly high in regional comparison. Nevertheless, owing to a greater reliance on external funding, even a low share of short-term funds might create

a significant rollover risk. This is reflected in the ratio of short-term external liabilities to total assets, which is relatively high compared to the banking sectors of other countries.

4 Significantly deteriorating loan portfolio both for households and corporations

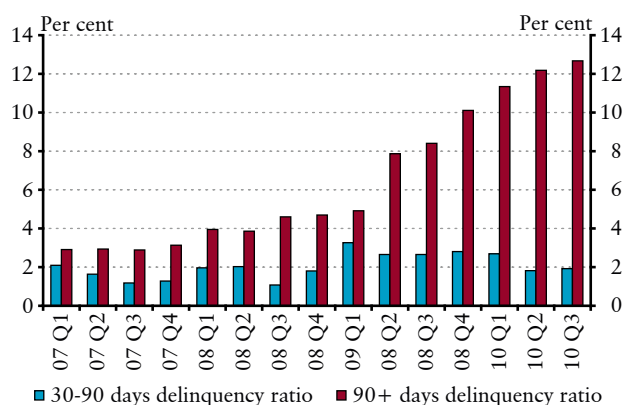




The share of corporate loans with a delinquency of over 90 days continued to increase. Slow economic growth, the weak forint exchange rates and the steady contraction in bank lending had a detrimental impact on the quality of the corporate loan portfolio. The slowdown of debt restructuring and increasing re-defaults within restructured loans also contributed to the continuing portfolio deterioration. Over the course of the first 9 months the ratio of loans 90+ days overdue to the total outstanding amount increased from around 10 per cent to above 12.6 per cent (Chart 21). On a positive note, however, loans 30-90 days overdue have declined perceptibly, leaving less room for a further increase of the share of non-performing loans.

Chart 21

Delinquent loans to the total outstanding amount of corporate loans

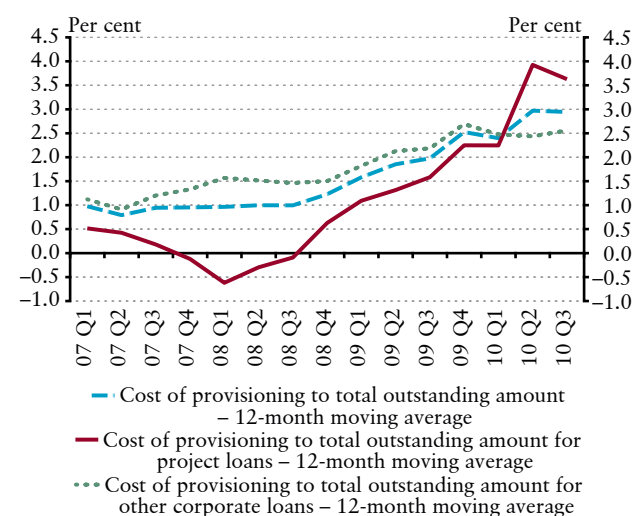


Source: MNB.

Loan losses in the corporate portfolio surged due to extremely poorly performance by project loans. As regards corporate loans, the cost of provisioning (to total outstanding amount for corporate loans) increased by 0.5 percentage points to 3 per cent by the end of June and remained at that level until the end of September (Chart 22). Within the corporate segment, the cost of provisioning on project loans increased by 1.7 percentage points to 4 per cent in the first half 2010, and was still at a very high 3.6 per cent at the end of September. At the same time, a mild decline was observed for all other corporate loans. There are significant differences among banks with respect to the losses suffered on corporate loans, as the cost of provisioning varies between 2 and 4.5 per cent at large banks (i.e. those with a market share of over 5 per cent based on the balance sheet total). This difference is even more pronounced for project loans: certain banks have recorded a figure of over 6 per cent in this sub-segment.

Chart 22

Cost of provisioning to total outstanding amount for corporate loans



Source: MNB.

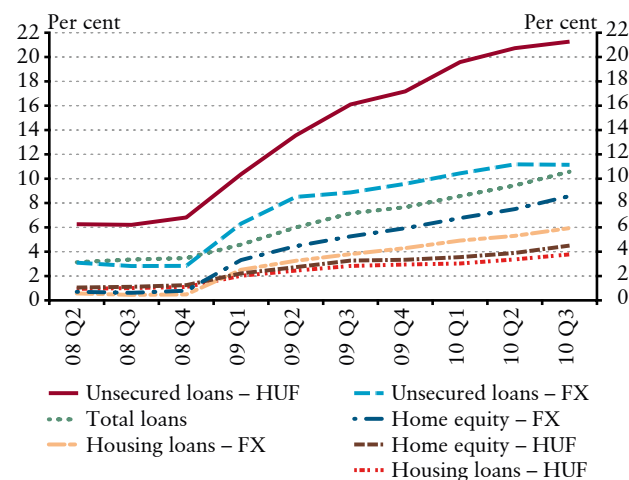
Portfolio quality has deteriorated further in the household segment as well. The depreciation of the forint against the Swiss franc (Box 4) combined with persistently high unemployment severely reduced households' debt servicing capacity. The growing re-default within restructured loans also contributed to the increase in non-performing loans. In the third quarter 25-30 per cent of the restructured mortgage loans was in more than 30 days overdue,¹⁸ while at the end of 2009 it was around 10 per cent for a half of the total outstanding restructured loans. By the end of September, the 90+ days delinquency ratio has increased by 3 percentage points to 10.5 per cent, exceeding the value recorded at the end of 2009. It should be emphasised, however, that the forint was weak against the Swiss franc for the whole summer, thus the 90+ days delinquency ratio may only reflect its full impact in December. Hence, pointing to the same direction, the grace period (lower debt servicing for a temporary period after restructuring) will expire for half of the total outstanding restructured loans over the next half-year.

Due to the fundamentally different risk profiles and product structures of forint and foreign currency denominated loans to households, their portfolio quality is not comparable. Within the portfolio, forint-denominated loans have a higher share of non-performing loans than foreign currency denominated loans. This can be attributed to the significantly different performance of specific secured and unsecured loan products. The smallest delinquency ratios were recorded for housing loans; in

¹⁸ Half of them are already in the 90+ days overdue category.

particular, for forint-denominated loans (Chart 23). This is partly due to the fact that a large portion of forint-denominated housing loans are state subsidised, and their interest rates have not changed notably since the beginning of the crisis. Delinquency ratios are higher for home equity loans, thus mortgage loans perform worse, overall, than housing loans. This is particularly apparent in the case of foreign currency denominated mortgage loans, given that home equity loans were typically granted in foreign currency. As regards unsecured loans, the majority of the poorest quality loan products (such as credit card debts, personal loans, and purchase loans) are forint-denominated. In the case of unsecured loans the poorer portfolio quality relative to mortgage loans can be attributed to a lower debt servicing inclination and smaller average loan sizes. Delinquency ratios of unsecured loans increased marginally in the third quarter (in the case of foreign currency denominated loans a slight decrease was observed), but the share of loans 90+ days overdue within mortgage loans increased further with at the same pace. It is possible that households' debt servicing inclination weakened due to the expected government support. Different initial level of delinquency rate and different characteristic of borrowers can result in contrary movement as well.

Chart 23
90+ delinquency ratio for certain retail product types



Note: Unsecured loans cover all loans not backed by mortgage, that is, personal loans, vehicle financing loans, overdrafts, purchase loans and other loans.

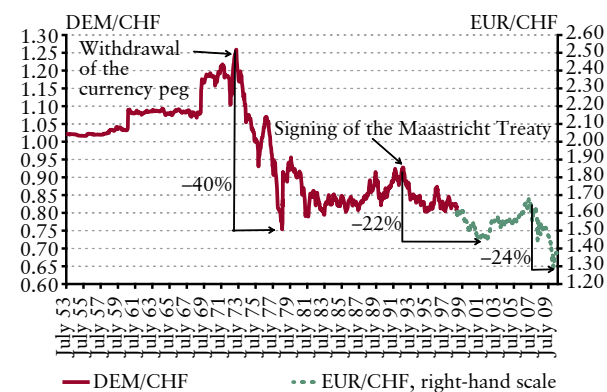
Source: MNB.

Box 4: Instalments of Swiss franc denominated mortgage loans

During the period under review, the Swiss franc exchange rate has appreciated on the whole, with considerable volatility. This can be largely attributed to the depreciation of the euro vis-à-vis the Swiss franc, which reflects – to a great extent – the sovereign debt crisis of several EMU Member States. In addition, in the context of deteriorating global investor sentiment, investors' interest increasingly turned to presumably stable Swiss franc denominated instruments. As it were, the Swiss currency serves as a safe haven for investors during crises (Chart 24), and even the massive interventions by the Swiss National Bank failed to prevent the appreciation of the Swiss franc.

Looking at a somewhat longer time horizon, albeit at a different pace and with slight interruptions, the Swiss franc appears to have appreciated continuously since the 1970s; initially against the Deutsche Mark, and later also against the euro. A paper published by the Swiss National Bank in 2008¹⁹ also came to the conclusion that, primarily driven by the notable productivity growth of the Swiss export sector relative to European trading partners, the Swiss franc has exhibited a continuous upward trend in real terms against European currencies. In summary, the appreciation of the Swiss franc against the

Chart 24
Changes in the Swiss franc exchange rate vis-à-vis the Deutsche Mark and the euro



Source: Reuters.

euro has two components. On the one hand, there is a fundamental real exchange rate appreciation trend driven by productivity growth, on the other hand, deteriorating investor sentiment increases the demand for Swiss franc assets perceived to be safe.

¹⁹ Reynard, Samuel: What drives Swiss Franc?, *Swiss National Bank Working Papers*, 2008-14, http://www.snb.ch/n/mmr/reference/working_paper_2008_14/source.

Table 1**Distribution of Swiss franc denominated mortgage loans according to initial exchange rate and APR**

%		Initial APR							Total	
		5.4–5.8	5.8–6.2	6.2–6.6	6.6–7	7–7.4	7.4–7.8	7.8–8.2		8.2–8.6
Initial exchange rate	135–145	0.0	0.0	0.0	0.0	1.7	0.0	1.7	0.0	3.4
	145–155	2.4	4.1	5.5	4.6	13.4	0.0	6.2	0.0	36.2
	155–165	3.8	8.3	2.1	7.8	7.1	2.0	1.7	0.0	32.8
	165–175	2.4	5.0	0.0	1.3	8.4	1.4	1.9	0.0	20.4
	175–185	1.1	0.1	0.3	0.5	2.4	0.0	1.1	0.0	5.5
	185–195	0.0	0.0	0.0	0.0	0.5	0.3	0.2	0.1	1.2
	195–205	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.3	0.6
	205–215	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total		9.6	17.4	8.0	14.3	33.5	4.0	12.8	0.4	100.0

Note: The reviewed sample covers mortgage loans disbursed since January 2005 weighted by the principal amount expressed in Hungarian forint at the initial exchange rate.

Source: MNB.

In Hungary, the bulk of Swiss franc denominated loans were borrowed at a relatively strong forint exchange rate. Since 2005, more than 70 per cent of loans have been extended at a CHF/HUF exchange rate below 165, while 90 per cent of them have been extended below CHF/HUF 175 (Table 1). Distribution by initial APR appears somewhat more balanced; in any case, APR is likely to have increased for 90 per cent of the loans.

Owing to the depreciating forint exchange rate and the interest rate increase, borrowers with Swiss franc denominated loans have encountered higher monthly instalments. According to our estimates (based on an exchange rate of CHF/HUF 200 and an average APR of 8 per cent), the average monthly instalment of Swiss franc denominated mortgage loans extended since 2005 has increased by 35.6 per cent (Table 2). Moreover, there are debtors who pay 50 per cent more today than initially. The largest part of the instalment increase (a 26 per cent

increase) is a result of principal revaluation, while the smaller part reflects higher interest rates (a 7.7 per cent increase), and the fact that the higher interest rates are paid at a weaker exchange rate (1.9 per cent increase).

It is clear that the debt servicing burdens in the last two years primarily has changed primarily as a result of exchange rate volatility. Although nominal interest rates increased only slightly, there was a significant spread effect (APR minus cost of funds) as banks passed on the declining cost of funds to interest rates only slowly and partly (Chapter 7.2). It is important to recognise that the Swiss interest rate cycle may reverse in the future. If the Swiss National Bank decides to raise its policy rate over time, depending on the extent to which banks pass it on to customers, this could lead to a nominal interest rate increase and an increase in the instalments of domestic borrowers with Swiss franc denominated loans.

Table 2**Estimated growth in the monthly instalments of Swiss franc denominated mortgage loans**

%		Initial APR							Total	
		5.4–5.8	5.8–6.2	6.2–6.6	6.6–7	7–7.4	7.4–7.8	7.8–8.2		8.2–8.6
Initial exchange rate	135–145	66.4	62.1	57.9	53.9	50.1	46.4	42.9	39.4	46.5
	145–155	55.3	51.3	47.4	43.7	40.1	36.7	33.3	30.1	42.8
	155–165	45.6	41.8	38.2	34.7	31.3	28.1	25.0	22.0	36.4
	165–175	37.1	33.5	30.1	26.8	23.6	20.6	17.6	14.8	27.1
	175–185	29.4	26.1	22.8	19.7	16.8	13.9	11.1	8.4	18.9
	185–195	22.6	19.4	16.4	13.4	10.6	7.9	5.3	2.7	8.6
	195–205	16.5	13.5	10.6	7.8	5.1	2.5	0.0	-2.4	0.7
	205–215	10.9	8.1	5.3	2.6	0.1	-2.4	-4.8	-7.0	4.8
Total		44.0	41.5	43.8	36.3	32.5	21.8	28.8	-1.1	35.6

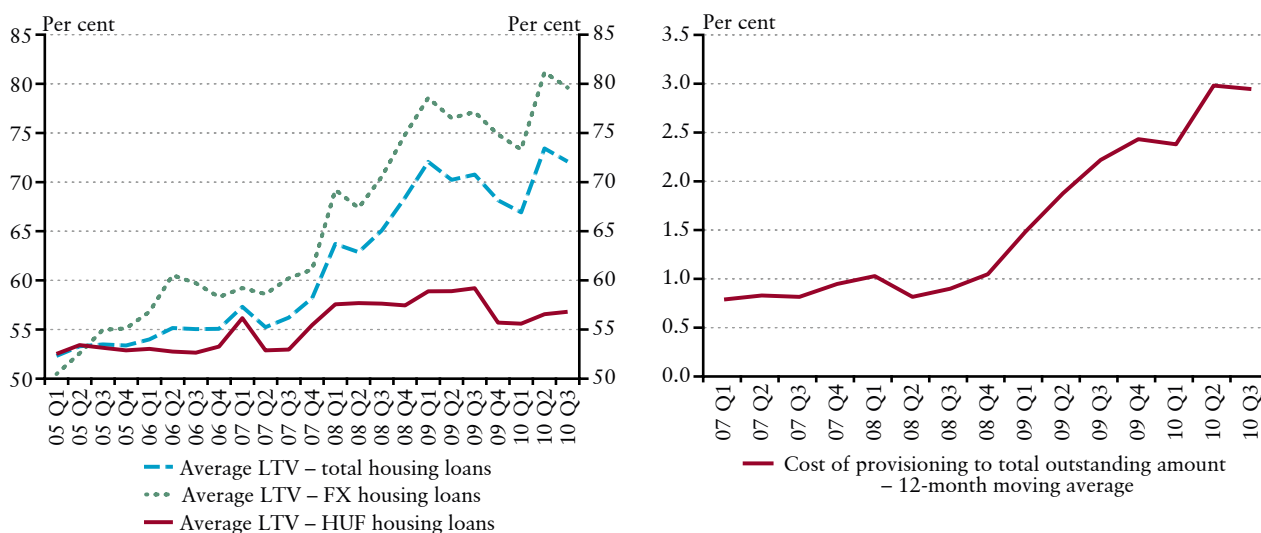
Source: MNB.

Loan-loss provisioning for the household loan portfolio increased sharply. The rapid appreciation of the Swiss franc had a detrimental impact on banks' loan losses from two aspects. On the one hand, due to surging monthly instalments it deteriorated households' debt servicing capacity (Box 4) and thus in other words increased the probability of default (PD). On the other hand, it raised the loan-to-value ratio (LTV), and consequently the value of loss-given-default (LGD) increased. In addition, persistently falling residential property prices also increase the value of expected losses due to the declining collateral value. In September 2010, the average LTV of the total household loan portfolio was above 70 per cent, and even reached 80 per cent in the case of foreign currency denominated loans (Box 5). The increase in LTVs from 2007 to early 2008

could be attributed to the loosening credit conditions of the banks. After that period, banks started to tighten credit conditions, but the depreciating exchange rate continued to put upward pressure on LTV levels. By the end of June 2010 the cost of provisioning jumped to 3 per cent as a percentage of total outstanding amount of household loans, and it remained that high in September. It is more than a 0.5 percentage points increase compared to the end of 2009 (Chart 25). The significant deterioration in the cost of provisioning can be attributed to the fact that banks had provisioned also in advance due to the strong Swiss franc. Looking at individual banks, loan-loss provisioning varies extremely widely. The worst ratio recorded for large banks²⁰ (5.8 per cent) is more than four times higher than the best one (1.3 per cent).

Chart 25

Changes in the LTV values of housing loans by currency and cost of provisioning to total household loans



Source: MNB.

Box 5: Loan-loss coverage for the non-performing portfolio of household and corporate loans

In addition to non-performing loans (more than 90 days overdue) and provisioning, the third most important indicator measuring credit risk is the loan-loss coverage ratio of non-performing loans. This is a reliable indicator of whether banks are sufficiently prudent in provisioning and thus, in fact, prepared to cover potential losses.

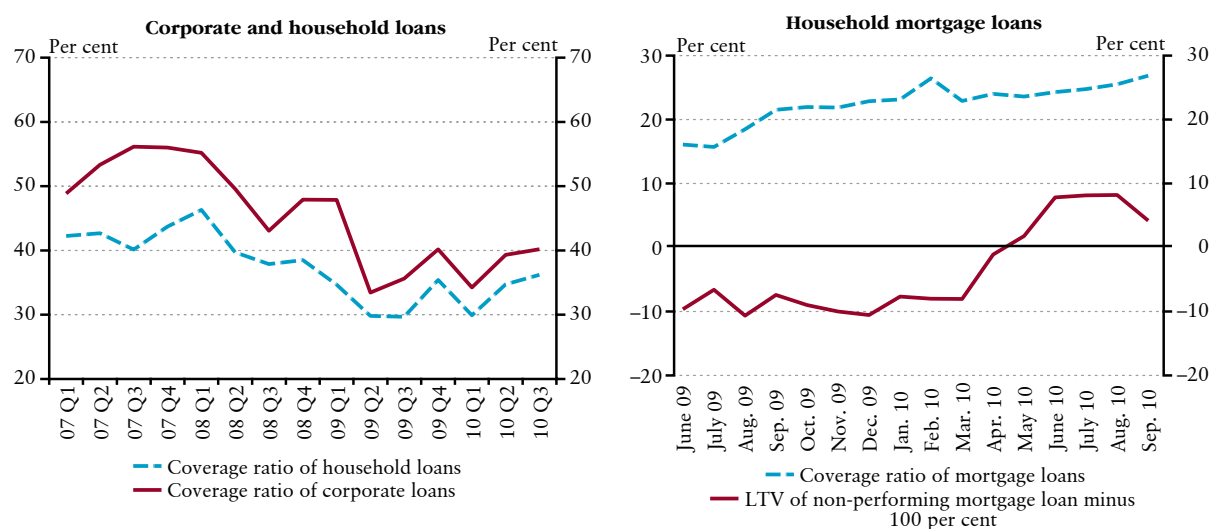
As regards corporate loans, the loan-loss coverage ratio of non-performing loans shows a declining long-term trend; however, its

level is higher than in the case of households (mainly because the majority of household loans are backed by mortgages). The downward trend has stopped this year and at the third quarter, the coverage ratio was above 40 per cent. Turning to the household portfolio, at the end of September 2010 the coverage ratio of non-performing loans stood at 36 per cent (Chart 26). The decreasing loan-loss coverage ratio poses a risk as it possible that banks may not be acting prudently enough in provisioning. This risk is mitigated by the fact that the

²⁰ With a market share of over 5 per cent based on the balance sheet total.

Chart 26

Loan-loss coverage ratio for non-performing corporate and household loans



Source: MNB.

earlier downward trend came to an end this year and a mild increase has been observed.

In respect of mortgage loans, in September 2010 the ratio of non-performing loans to the total mortgage loan portfolio was 7.6 per cent. Loan-loss coverage ratio for this non-performing portfolio is 26 per cent. One positive development is that this indicator has been rising steadily over the last year. However, the indicator may not be interpreted without examining the LTV levels of non-performing mortgage loans. The LTV of non-performing mortgage loans is currently 104 per cent on average, which means that a 4 per cent loss would be suffered on the non-performing mortgage loan portfolio if it was possible to sell the residential property at collateral value. As the current coverage ratio is 26 per cent, it would be more than sufficient to cover these losses. However, there are two major risks involved. The first risk is that the appreciation of the Swiss franc may quickly elevate the level of the LTV. The second risk concerns the value of the residential property serving as collateral. Although there was no

significant house price bubble in Hungary, once the foreclosure moratorium is abandoned (Box 6), it may well be possible that banks fail to sell residential property at collateral value. This assumption may be backed up by the 13 per cent drop in residential property prices since the outbreak of the crisis.

The loan-loss coverage for loans not backed by mortgages is significantly higher, standing at around 65 per cent. This may be attributed to several factors. On the one hand, not being threatened by the possibility of losing their property, debtors are less inclined to service their debt. On the other hand, in the lack of collateral, these loans involve more substantial potential losses.²¹

The banking sector's average loan-loss coverage shows substantial dispersion, both for household and corporate loans. As it relates to individual banks, the ratio varies extremely broadly, which may partly reflect the different composition of loan portfolios, but may also call into question the prudence of provisioning practices in certain cases.

²¹ This statement is also true for vehicle financing loans – which are also classified as loans not covered by mortgage but they do have collateral –, since the amortisation of the collateral value is much faster than in the case of such loans.

Box 6: Impacts of the foreclosure and eviction moratorium

Although in public discourse the terms ‘foreclosure moratorium’ and ‘eviction moratorium’ sound interchangeable, they in fact refer to two parallel measures which are in force. On the one hand, in its Decree²² dated 10 June 2010 the Government declared a ban until 31 December 2010 on foreclosures held – outside judicial enforcement – according to the procedure specified in Sections 257-258 of the Civil Code.²³ On the other hand, the Parliament amended the Act on judicial enforcement²⁴, based on which evictions from residential property may not be initiated from 11 August 2010 to 15 April 2011. Consequently, this measure temporarily extends the eviction moratorium (in legal terms: eviction from a residential property) for winter months, effective since 2003.²⁵ According to reasoning of the amendment, this intervention in the enforcement of claims is temporary. During the moratorium, measures aiming at debt management should be established to assist debtors in starting a new life, promote the enforcement of claims over the long term and at the same time, prevent citizens from becoming homeless. The concept of National Asset Management Agency would serve also this aim.

The extension of either the foreclosure or the eviction moratorium would pose a serious risk to the stability of the domestic financial system and potentially affect customers’ access to loans, and hence economic growth. On the one hand, the moratoriums entail a moral hazard. If the creditor cannot claim the collateral when debtors regularly default on the payment of their monthly instalments, debtors will have less incentive to meet their payment obligation. If missed payments have no material consequences, it will motivate more and more debtors to default. This may substantially increase the share of

defaulted household debts in the banking sector. Expectations in relation to the National Asset Management Agency may additionally amplify this effect.

In addition, the foreclosure moratorium may significantly increase the losses of credit institutions on defaulted mortgage loans, as sale of the property collateral will not contribute to offset incurred losses. Altogether, these factors may significantly undermine the profitability and capital position of credit institutions.

Finally, the foreclosure and eviction moratorium eliminates the difference between secured and unsecured lending and paralyses the covered mortgage bond market, one of most stable forms of funding for credit institutions. Indeed, interest rates on mortgage loans are low and the price of the mortgage bonds financing those loans are cheap because the property collateral reduces the maximum amount of losses that can be suffered on these loans. If enforcement of the collateral becomes impossible or cumbersome, the risks of mortgage loans will significantly increase or become identical with those surrounding unsecured loans, with all the relevant consequences.

According to international experience, other countries²⁶ have also adopted temporary foreclosure moratoriums during the crisis. However, these measures were ultimately quickly withdrawn. We may conclude that neither the foreclosure moratorium, nor the eviction moratorium are sufficient to tackle social problems in the long run. Moreover, by weakening the lending ability of the banking sector and by reducing economic participants’ access to funding, they may even become counterproductive.

²² The prevailing foreclosure moratorium is prescribed by Government Decree 194/2010 (VI.10.), modifying Government Decree 12/2003 (I. 30.) on the rules of foreclosure outside of judicial enforcement (the provision of the moratorium is set forth by paragraph 8/G of the latter Government Decree).

²³ In essence, this foreclosure moratorium applies exclusively to the cases where the creditor reserved the right in the loan contract to sell the residential property either with or without the consent of the defaulting debtor (in this case eviction is the responsibility of the new owner). This foreclosure moratorium does not cover foreclosures under judicial enforcement or cases in which the bank exercises its option under the loan contract to purchase the residential property serving as collateral for the mortgage loan.

²⁴ Act LXXXI of 2010 amended Act LIII of 1994 on judicial enforcement.

²⁵ It should be noted that a failure to evict shall not prevent the new owner from acquiring or selling the occupied residential property.

²⁶ Following the outbreak of the crisis a foreclosure moratorium was adopted in Iceland until August 2009. The United States introduced a similar measure in autumn 2008 for a duration of six months (which was later temporarily extended in certain states, such as California). In Ireland legislation was passed with the effect that banks may not foreclose on residential property unless the debtor is delinquent by at least six months.

5 Profitability deteriorates further, while the system-wide capital position remains sound





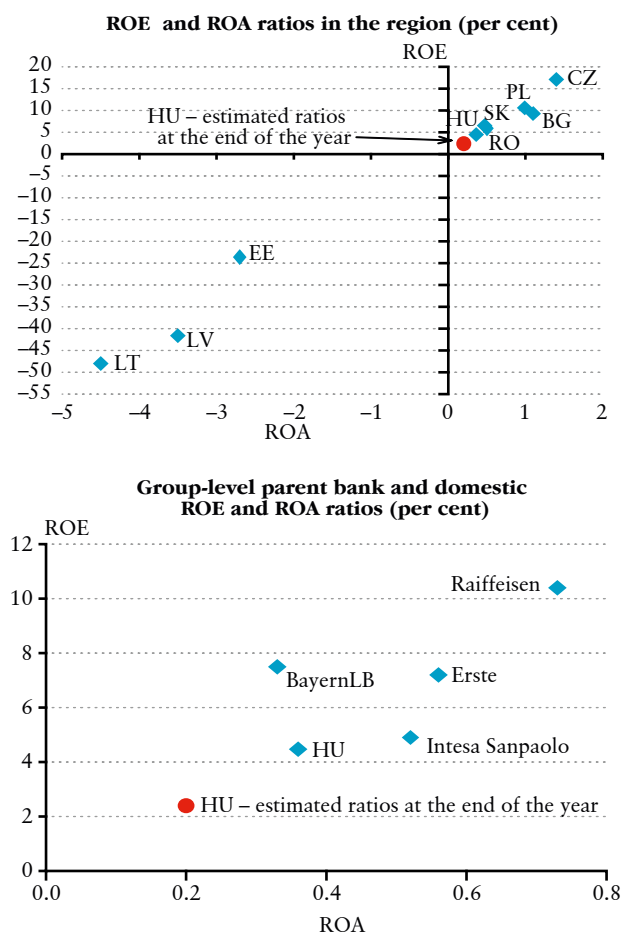
The profitability of the Hungarian banking sector in 2010 falls significantly short of the previous year's level.

By September, earnings before taxes for the banking sector as a whole amounted to HUF 116 billion, about 40 per cent of the figure for the same period in 2009, which was HUF 297 billion. The 12-month year-on-year pre-tax ROA (return on assets) and ROE (return on equity) indicators of 0.4 and 4.5 per cent, respectively, have shown notable declines in the recent period. The banking sector paid the first instalment of the bank levy in September. Upon payment of the second instalment, and based on the estimated profitability developments, ROA and ROE might be around 0.2 and 2.5 per cent at the end of the year (Box

7). In a regional comparison, current figures and year-end estimates prove to be less competitive and are also low compared to the group-level data of parent banks (Chart 27). Taking into consideration that the profit of the bank-owned financial enterprises due to the significantly deteriorating portfolio quality and the bank levy may be negative, at the consolidated bank-group level the consolidated profit may even disappear entirely. In this case, the comparison with regional peers would be more unfavourable.

The deviation between the profitability of various banks remains elevated. Based on total assets, the market share of banks with negative profits rose from 5 percent at

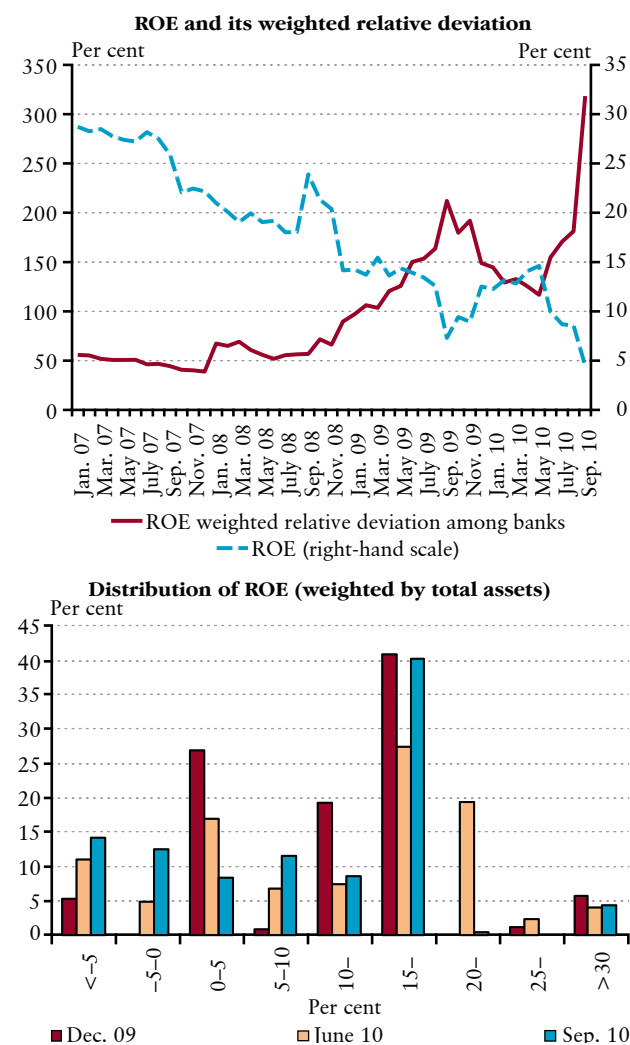
Chart 27
Profitability of the domestic banking sector in regional and parent banking group comparison



Note: LV: Latvia, LT: Lithuania, RO: Romania, SK: Slovakia, PL: Poland, EE: Estonia, HU: Hungary, BG: Bulgaria, CZ: Czech Republic. Figures for the end of 2009. In the case of HU September 2010 12-month rolling values, and estimate for the end of 2010. Group-level parent bank data are annualised values for 2010 Q2.

Source: MNB, Report on Financial Stability (LV, LT, EE, PL), Analysis of the Slovak Financial Sector (SK), Banks in Bulgaria, October-December 2009 (BG), EU banking sector stability (CZ, RO), bank websites, MNB estimates.

Chart 28
ROE ratio of the banking sector 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)]. Weighted relative deviation was calculated using total assets.

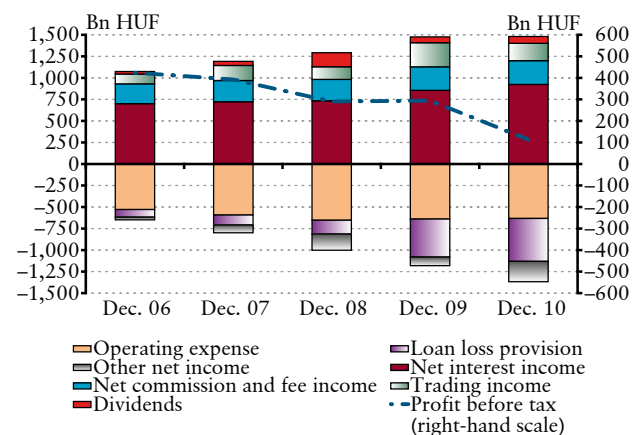
Source: MNB.

the end of 2009 to over 25 percent (17 banks posting losses) at the end of September 2010, and the posted loss amounted to HUF 94 billion, up from HUF 20 billion at the end of last year. The overall picture is nuanced by the fact that, while there was a general decline in profitability, only a few banks incurred substantial losses. In parallel, the positive results within the banking sector were also concentrated at a handful of banks, leading to a considerable asymmetry in profitability among banks (Chart 28).

The decline in pre-tax profit was caused by rising loan losses and one-off factors. In line with our expectations, higher provisioning decreased the profit before taxes. On a similar note, trading income fell significantly short of last year's figures as well. The volume of other impairments in 2010 increased primarily due to the increasing provisioning of foreign receivables. Other unexpected factors – primarily goodwill write-offs, provisions for litigation and payment of the first instalment of the bank levy – also deteriorated the result. The increase in net interest income exerted a positive influence on the profitability of banks, which were able to

Chart 29

Major income statement items of the banking sector



Note: 12-month rolling data.

Source: MNB.

pass on the increase in the cost of risk to outstanding loans, demonstrating their pricing power on the market (Chart 29).

Box 7: Effects of the bank levy on the banking system

Pursuant to Act XC of 2010,²⁷ effective since 13 August 2010, the Hungarian Government levied extraordinary windfall tax amounting to HUF 187 billion on financial institutions. The major share of the levy applies to credit institutions, calculated based on their modified total assets for 2009. The levy is determined as 0.15 per cent of the tax base under HUF 50 billion and 0.5 per cent of the tax base above that. The levy does not take into account the profitability of individual banks, meaning that loss-making institutions must comply as well. The Act also projects an additional HUF 187 billion to be levied on financial institutions for 2011 (with details to be defined later in new legislation). For the period 2012-2014, the medium-term projection submitted with the 2011 budget still envisages HUF 93.5 billion in bank levy revenues.

Examples of such windfall tax can be found in other European countries as well (Table 3), with certain other governments currently considering this option. Moreover, the Hungarian bank levy is not unique in the sense that its clear objective is to increase the scope of action in relation to the budget: the United Kingdom and France intend to introduce the tax on credit institutions from 2011 for similar reasons as well. The extent of the Hungarian bank tax, however, far exceeds the levies applied in other countries, whether compared to GDP or, in particular, to the total assets of the financial sector. Although the Hungarian banking sector posted higher profitability in

2009 than other countries listed in the table, the proportion of the bank levy to the banks' profits (the HUF 120 billion levied on credit institutions amounts to over 40 percent of the sector's earnings before taxes for 2009) is by far the highest within the reference group.

The Magyar Nemzeti Bank's Monetary Council highlighted the macroeconomic risks of the bank levy, while simultaneously acknowledging the Government's efforts to restore fiscal balance in its release on 5 June 2010²⁸. At the same time, however, the Monetary Council found it cause for concern that – by maintaining the windfall tax levied on Hungarian financial institutions over the long run – the Government could undermine the banking system's funding and lending capacity, which could result in substantial losses in growth over both the short and long run. It could also weaken the Hungarian banking system's external funding capacity, and thereby the stability of the Hungarian economy.

Numerous studies demonstrate that cross-border capital flows are driven by higher profitability that may be achievable abroad; for example, a study²⁹ by the EBRD has established an empirical relationship between banking-group funding allocation and the profitability of subsidiary banks. Less profitable subsidiary banks can therefore attract less capital and less funding from their parent banks, consequently lend

²⁷ Act XC. of 2010 on the creation and amendment of certain laws on economic and financial issues.

²⁸ http://english.mnb.hu/Monetaris_politika/decision-making/mnben_monet_kozlem/mtkozl_20100705_change_hosszu.

²⁹ De Haas and Van Lelyveld: Internal capital markets and lending by multinational bank subsidiaries, *Working Paper*, No. 105, EBRD, 2008: <http://ideas.repec.org/p/ebd/wpaper/105.html>.

Table 3
Measures and plans in relation to the bank levy

Where?	What is the basis?	Status	Extent of the new levy		Utilisation
			(as percent of GDP)	(as percent of total assets)	
Hungary	Modified end-of-2009 balance sheet total	Already effective	HUF 120 Bn per year		Revenue generation for the budget
			0.5	0.4	
United Kingdom	Modified actual liabilities total	Under consultation	GBP 2.5 Bn per year		Revenue generation for the budget
			0.2	0.03	
France	Not yet decided	Under consultation	EUR 0.5 Bn per year		Revenue generation for the budget
			0.02	0.01	
Germany	Not yet decided	Under consultation	EUR 1 Bn per year		Stability fund
			0.03	0.01	
Sweden	Modified actual liabilities total	Effective since 2008	2.5 per cent of GDP during 15 years (0.8 per cent of total assets)		Stability fund

less. The announced Hungarian bank levy is a lump sum tax, which therefore theoretically does not affect banks' profitability over the long run.³⁰ If foreign owners nevertheless incorporate the repeated imposition of such a bank levy into their expectations, their dedication to funding activity in Hungary could be undermined.

The impacts of the bank levy on lending and economic growth remain adverse even if banks, at least to a certain degree, pass the tax on to the customers: in this case, the tax would increase the costs of financial intermediation, and the more expensive banking products would thus hamper growth.

At the systemic level, banks³¹ capital position is adequate. The capital adequacy ratio³² (CAR) for the banking sector as a whole stood at 13.2 per cent at the end of September 2010. Losses accumulated during the year and the depreciation of the HUF exchange rate led to a higher

market share of banks with a ratio less than 9 per cent (Chart 30). Also taking into account mid-year unaudited profit – i.e. assuming that positive earnings posted by banks will be used entirely to strengthen their capital position – the capital adequacy ratio would be 13.6 per cent.

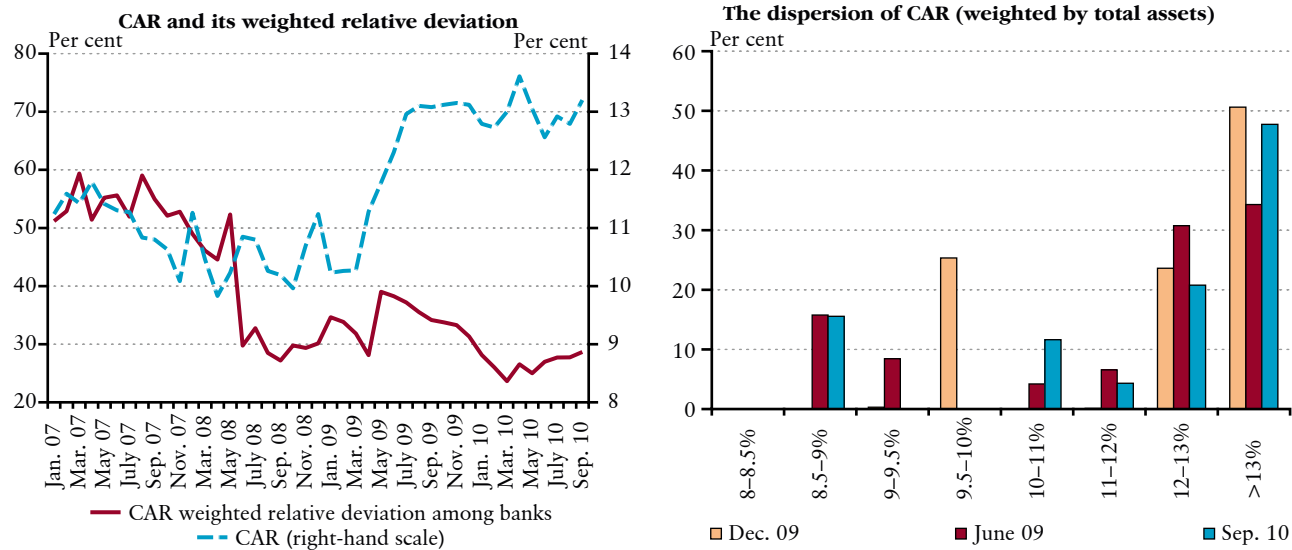
³⁰ Pursuant to the legislation (Act XC of 2010), in 2010 the tax base for credit institutions and financial enterprises is defined as the modified total assets determined based on the 2009 annual report's figures. Put simply, the modified balance sheet total is total assets adjusted by the credit intuition, investment enterprise and financial enterprise exposure. Under the Act, the extent of the windfall tax to be levied on the entire financial sector will also be HUF 187 billion in 2011, with the tax base once again being determined on the basis of the 2009 end-of-year annual report. The draft, currently in the process of being adopted, differs from this year's statute in that in 2011, the tax will be due in four equal instalments. The Act already includes the bank levy of financial organisations for 2012, however detailed conditions have not yet been specified. A separate statute will define such details. The Act does not dispose of the bank levy for 2013-14.

³¹ Excluding credit institution branches and Eximbank, KELER and MFB.

³² Capital adequacy ratio (CAR) = (total own funds for solvency purposes/minimum capital requirement) * 8 per cent. By definition mid-year audited profit is included in the own funds.

Chart 30

Capital adequacy ratio of the banking sector and dispersion by total assets



Note: Weighted relative deviation was calculated using total assets.

Source: MNB.

6 The credit risk stress test suggests that additional capital need remains at manageable levels and capital adequacy is still satisfactory





The stress scenario assumes a significant decline in GDP, a substantially weaker HUF exchange rate and a rise in risk premia. A number of international institutions and market analysts seem to agree that the likelihood of a double-dip recession in the global economy has increased over the past months. Conducted this past July, the European Union's stress test also presented a scenario in which – in response to bleaker-than-expected employment and profit outlooks – another global confidence crisis evolves. Our stress test considered this scenario as its initial basis under which the weakening in Hungary's export markets reaches the magnitude typical of an average, globally synchronised recession.³³ A slowdown in global economic growth may also reduce the risk tolerance of foreign-owned domestic banks. Simultaneously, corporate investments may fall short of expectations and corporate adjustment may increase, manifesting itself in further layoffs. Through the deterioration of households' income position, the latter could further weaken domestic demand. A weaker global economic outlook may lead to a rise in risk premia again, which may in turn result in a weaker exchange rate and higher interest rates (Table 4).

We used estimates of PD (probability of default) to calculate corporate and household loan losses expected in the baseline and the stress scenarios. In our stress test we calculated expected loan losses by estimating probabilities of default. We used an aggregate bankruptcy model to establish the PD of banks' corporate loan portfolios in various macro-economic scenarios. In order to forecast the proportion of bankrupt companies in the baseline and the stress scenarios, we applied a vector autoregression (VAR) model. In addition to the bankruptcy

rate, a number of macro-economic and financial variables were used as endogenous variables in the model, and we also controlled for foreign nominal interest rates. In the case of households, the Cox proportional hazards model³⁴ is applied to assess, on the basis of transactional data, PD's in the baseline and the stress scenarios in a breakdown by HUF- and foreign currency-denominated housing, home equity and personal loans. Explanatory variables included data on client profile (age, gender, marital status, education and date of data recording), supplemented by macro-economic variables.

The pace of portfolio consolidation greatly affects the time when the rate of non-performing loans will start to decrease. We applied the PDs from the stress test to calculate future developments in non-performing loans as a proportion of total loans. Accordingly, we augmented the category of non-performing loans with those that have recently become 90 days overdue, while resolved (written off or sold) receivables were removed. During the simulation exercise we assumed that banks' portfolio consolidation practices remain unchanged relative to what has been observed this year. Calculations show that the rate of non-performing loans will increase over the entire forecast horizon. In the baseline scenario, the ratio of non-performing loans will likely stand at around 15 per cent in both the corporate and the household segment over the forecast horizon. In the stress scenario, the rate of non-performing household loans will increase by an additional one percentage point; while the rate of the non-performing corporate loans will increase by 0.2 percentage points. However, it is important to note that, relative to pre-crisis levels, the removal of unsound portfolios from the balance sheet has

Table 4**Macro-economic indicators in the baseline and stress scenarios**

	Baseline scenario		Stress scenario		The difference between the two scenarios (basispoint)	
	2010	2011	2010	2011	2010	2011
GDP*	0.9	2.8	0.8	-0.5	-0.1	-3.3
Private sector employment*	-0.3	0.3	-0.3	-0.5	0.0	-0.9
CPI*	4.6	3.4	4.7	4.8	0.1	1.3
EUR/HUF exchange rate	277	277	319	319		
CHF/HUF exchange rate	203	203	234	234		
CDS premium	320	320	520	520		

Note: The variables marked with * indicate annual percentage changes. In the baseline scenario we used the figures forecasted in the Report on Inflation, August 2010.

Source: MNB.

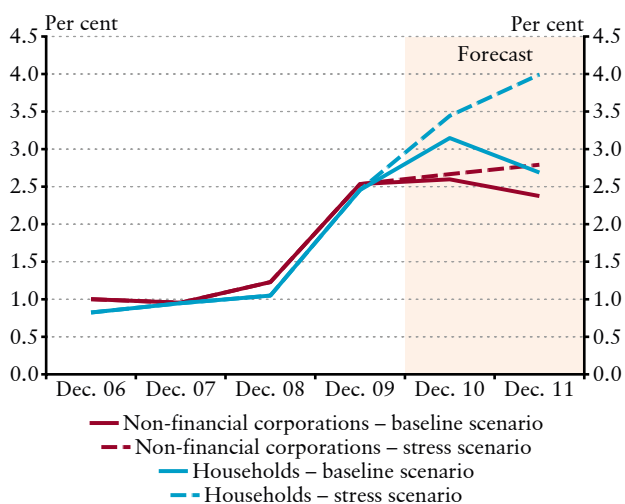
³³ See From Recession to Recovery: How Soon and How Strong? In: *IMF World Economic Outlook*, April 2009, Chapter 3.

³⁴ When applying the Cox model to credit risks, we analyse the effect of the special characteristics of individuals and the macroeconomic environment on the lifetime 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.

slowed down markedly, which increases the rate of non-performing loans to a notable extent. If banks accelerate portfolio cleaning in the near future, the rate of non-performing loans would be significantly lower than projected.

Loan loss provisions remain 2.5 to 3 times higher than the pre-crisis level; however, in the baseline scenario they may start decreasing next year. Our calculations show that recognised impairment losses on corporate and household loans will reduce the pre-tax earnings of the banking system by slightly over HUF 350-375 billion in 2010. Although our projections in the baseline scenario indicate lower loan-loss provisions for 2011, they will still hover at around HUF 300-325 billion. As for the stress scenario, additional loan-loss provisions in 2010 would be HUF 30-50 billion higher, whereas total loan-loss provisions for 2011 would be close to HUF 480-520 billion. Loan-loss rates would peak in 2010 in the baseline scenario in both segments and start decreasing from 2011 onwards. By contrast, in the stress scenario, loan-loss rates would continue to increase even in 2011. (Chart 31)

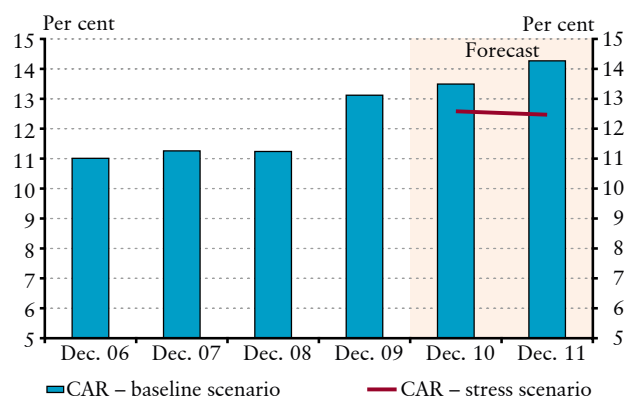
Chart 31
Projected loan loss rates in the baseline and stress scenarios by sectors



Source: MNB.

The capital adequacy of the banking sector is adequate in both the baseline and the stress scenarios. Banks have continued to adjust their balance sheets in 2010. Although balance sheet adjustment has been significantly less robust than last year, both corporate and household loan portfolios have shrunk markedly. This alone increased capitalisation by reducing the denominator of the capital adequacy ratio, and was not neutralised by the significant appreciation of the Swiss franc. Due to the mid-year capital injections and the ones planned to take place this year, capital adequacy is improving further. Based on the above, overall, we expect

Chart 32
The aggregate capital adequacy ratio of the banking system in the baseline and stress scenarios



Note: CAR means capital adequacy ratio.

Source: MNB.

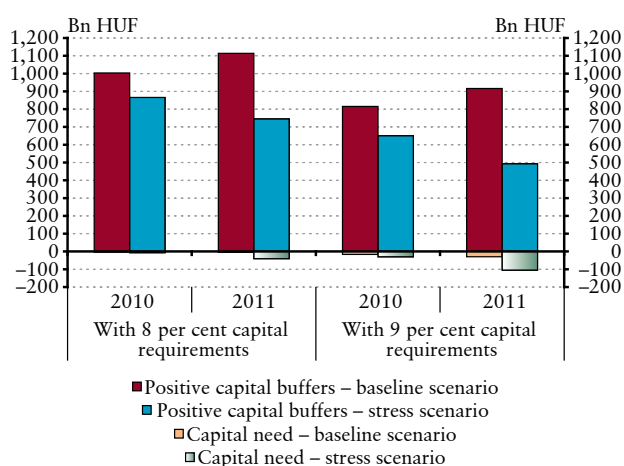
that capital adequacy ratio of the aggregate banking sector will exceed 13 per cent at the end of this year and we expect further improvements excluding dividend payments by the end of 2011. In the stress scenario, even though the capital adequacy ratio would decrease in both 2010 and 2011, it may still exceed 12 per cent (Chart 32).

The banking sector's need for capital injection is minimal in the baseline scenario, and remains manageable in the stress scenario. Additional capital is required when a bank cannot offset its loan losses by its business profit and excess capital, thereby causing its capital adequacy to fall below the 8 per cent minimum regulatory capital level. As capitalisation is generally high in the banking system, practically no capital injection is needed in the baseline scenario. In the stress scenario, a total capital injection of HUF 40 billion is necessary, which, given the size and the commitment of the parent banks, we consider as low (Chart 33). If the lowest required capital adequacy ratio were 9 per cent, the capital need – related to several banks – would be HUF 100 billion which is regarded as manageable.

The banking system's balance sheet adjustment may emerge in the stress scenario aiming partial substitution of capital injection. Since we do not expect any need for capital injection in the macro-economic baseline scenario, we consider the risk of the banking system's balance sheet adjustment to be low. At the same time, the balance sheet adjustment of the banking system and hence the threat of restricting corporate lending remain high in the stress scenario. In determining additional capital need in the stress tests, we relied on the implicit assumption that owners resolve banks' solvency problems by capital injections. The capital adequacy ratio can also be

Chart 33

Capital buffer and additional capital need in the baseline and stress scenarios



Note: The additional capital need is the sum of the capital needs of individual banks. Data for 2011 also contain the required capital increase in 2010.

Source: MNB.

improved through a wider interest margin. In this case, according to our calculations, the increase in interest

income exceeds the losses arising from deterioration in the quality of banks' loan portfolios caused by higher interest rates; thus, overall, profits increase capital. A further tool for tackling capital problems may be the downsizing of assets. If, in addition to a capital injection, interest margin adjustment and/or deleveraging also occur, this will have an adverse impact on net credit flows and, therefore, on economic output as well.

In the stress scenario, a balance sheet adjustment as a substitute for capital injection may reduce economic growth by 0.5 to 0.6 percentage points. By applying the SVAR model, we estimated the impact of balance sheet adjustment on GDP growth in the stress scenario (Box 8). Estimates only quantify the initial effects (we did not account for further feedback effects). Given the current low level of capital need, deleveraging would only affect the corporate lending; this impact would translate into a total of HUF 300 billion, which accounts for 3.3 per cent of the existing portfolio. Balance sheet adjustment would materialise in the coming 5 quarters. Based on our model estimates, contraction in lending flows would hit economic growth adversely: it would double the original 0.5 per cent recession forecasted for 2011 in the stress scenario.

Box 8: Assumptions applied by estimation of the impact of balance sheet adjustment on GDP

Depending on banks' initial capital adequacy and profitability, under the stress scenario, loan losses may cause banks' capital to fall below regulatory minimum or the level expected by the market, thereby forcing banks to adjust: they must raise capital (e.g. from their parent bank) or reduce their risk-weighted assets.³⁵ As there are an endless number of solutions regarding the proportion of adjustment in capital and assets, given the absence of accurate empirical evidence, when making our calculations, we assumed that banks adjusted by increasing their capital and deleveraging equally. This assumption could be interpreted for instance, as follows: parent banks provide the entire amount of capital required, and within one year they withdraw part of the amount and instruct their subsidiaries to perform the asset-side deleveraging needed for such withdrawal. Our assumption is that deleveraging only affects loans to the private sector and within the private sector, banks will first scale back corporate loans rather than household loans.

As the capital position remains adequate at many banks in the stress scenario, we must bear in mind that aggregate loan portfolios will not necessarily shrink by the same extent, as banks coping with capital

problems scale back their own loan portfolios. The underlying reason for this is that sufficiently capitalised banks may take over part of the loan portfolio. A valid argument against the idea of taking over the entire portfolio is that, in the simulated scenarios, the uncertainty surrounding the economic environment may prompt even otherwise solvent banks to exercise caution. Therefore, we assumed that only half of the downsized portfolio would be taken over by other banks; as a result, aggregate loan portfolios would only diminish by half of the adjustment.

We applied a SVAR model to assess the effect of negative net credit flow on economic growth. In the model seven endogenous variables are used: domestic short-term interest rates, the nominal effective exchange rate, the corporate loan portfolio, the spread on corporate loans above interbank interest rates, aggregate bankruptcy rate of the corporates, GDP and CPI. We controlled for the global environment using short-term EUR interest rates and imports-based external demand. In the econometric model, we applied sign restrictions to identify credit supply shocks. Using these shocks, calculations were made for the feedback impact of banks' capital constraints on economic growth.

³⁵ The method we applied is similar to the approaches adopted in the following studies: *The Credit Cycle and its Impact on EU Banking Stability*, ESCB – BSC WGMA Task force on Credit Cycles, mimeo; *An assessment of the long-term economic impact of stronger capital and liquidity requirements*, August 2010, Basel Committee on Banking Supervision; *Interim Report on the Cumulative Impact on the Global Economy of Proposed Changes in the Banking Regulatory Framework*, June 2010, IIF; A. Geršl and P. Jakubik: Pro-cyclicality of the Financial System and Simulation of the Feedback Effect, *Financial Stability Report*, 2009/2010, Czech National Bank, pp. 110–119.

7 Regulatory proposals





On 8 February 2010, the Magyar Nemzeti Bank announced a programme³⁶ to support the HUF mortgage loan and the HUF mortgage bond market. Within the framework of this programme, the MNB has been purchasing mortgage covered bonds denominated in HUF and made further steps so as to facilitate the development of HUF mortgage lending. These steps were aimed at rendering mortgage loan products more transparent and reviewing the scope of institutions authorised to issue mortgage covered bonds.

The development of the market of long-term (HUF) funds is indispensable for a new post-crisis growth path relying predominantly on domestic funding. One key segment of long-term funding is the market of covered mortgage bonds, the development of which MNB considers as one of its responsibilities. The impact study of the central bank concludes that a new structure of covered bond issuers based on universal bank principle may contribute to the evolution of a more efficient covered bond market. However, only if there is sufficient potential and willingness to issue can the advantages stemming from a change to the current model make a difference. According to our projection, banks' potential to issue covered bonds based on a future HUF mortgage loan portfolio does not reach a marketable level. Although the existing foreign currency denominated loan portfolio represents an adequate issuance potential, the banking system's willingness to issue covered bonds is

low, mainly because alternative short-term foreign funds are more beneficial from cost perspective. Thus, the potential advantages that may arise from a new model could be exploited only if banks had incentives to improve maturity matching, which could be facilitated by covered bond issues.

Regarding household lending, the MNB has raised the issue of banks abusing their dominant position and pointed out the need to address this issue on a number of occasions. As banks' dominance manifests itself mainly in the pricing of loan products, it stands to reason that the bank-client relationship calls for intervention at this juncture. Therefore, the MNB proposed³⁷ that the government responsible for legislation pass a law under which two types of loan products will be allowed to be offered to consumers in the future: one is a product with a fixed premium and an interest rate pegged to a reference interest rate and another with an interest rate fixed for a long interest period (i.e. one that usually spans several years). Furthermore, the central bank has also drawn the attention of legislators/regulators to the importance of laying down statutory regulations under which banks may not expand the buy/sell exchange rate spread applied to loan repayment in a manner that is prejudicial to the client, under which the spread may vary only within a specific range and under which the loan repayment can also take place in foreign currencies.

³⁶ http://english.mnb.hu/Monetaris_politika/decision-making/mnben_monet_kozlem/mnben_mtkozl_20100208_program.

³⁷ http://english.mnb.hu/Sajtoszoba/online/mnben_pressreleases/mnben_pressreleases_2010/mnben_kozlemany_20100920.

7.1 Issues in developing covered bond financing in Hungary

The financial and economic crisis since 2007 has provided ample evidence that excessive maturity mismatches in banks' balance sheets may have serious consequences in a stress situation. Although it follows from the very nature of the modern banking system and financial intermediation that, on average, the maturity of liabilities is shorter than that of assets and, therefore, perfect maturity matching can never be achieved, from the financial stability point of view, efforts must be made to keep maturity mismatches at a healthy level. One tool that can be efficiently used to achieve the above goal is when credit institutions raise funds to finance typically long-term mortgage loans by issuing medium-term or long-term securities. At a global level, the covered bond market is an important segment of the capital markets, accounting for approximately 15 per cent of the long-term debt securities issued by financial institutions and 29 per cent of EUR-denominated debt securities.³⁸ In Hungary, however, covered mortgage bonds have not become a truly important segment in funding. As, in our opinion, the development of covered bond funding would be highly desirable from a financial stability perspective, we analysed the possible advantages and disadvantages of a change in the institutional model. Such a change would

remove the privilege of specialised mortgage banks to issue covered bonds, and universal banks would also be entitled to issue covered bonds. Of course, a necessary condition for this is that the current strict criteria and guarantees pertaining to the coverage of covered bonds and the current risk profile (good rating and relevant pricing) shall remain unchanged under the new model as well.

INTERNATIONAL MODELS OF MORTGAGE COVERED BONDS

Fundamentally, there are two formalised types of financing mortgages through securities: the US-type securitisation model on the one hand and the so called Pfandbrief-model on the other in Europe, which is a covered bond facility with a centuries-long tradition³⁹. Hungary has adopted the latter model. Although there are several types of institutional forms to issue covered bonds in Europe, each is based on the same two fundamental principles, i.e. those of coverage and specialisation. Under the principle of coverage, covered bonds must be secured on mortgage loans fully backed by mortgage or on loans to the public sector (administrative or municipal bodies).⁴⁰ Thus, investors are repaid even if the

Table 5

Institutional forms of covered bond issuers in Europe

	1. Specialised bank principle	2. SPV scheme	3. Universal bank principle with special license	4. Universal bank principle without special license	5. Structural scheme based solely on civil law
Regulated institutions with limited activities	X	X			
Structural separation of cover assets		X			X
Supervisory license			X		
Issuance governed by special legal framework	X	X	X	X	
Issuance based on general civil law					X
Countries using the institutional form	Luxembourg, Hungary	France, Ireland	Denmark, Germany	Czech Republic, Spain	UK, Netherlands

Note: Under the SPV scheme, the originator bank establishes a controlled subsidiary whose activity is confined to collateral management and covered bond issue. The non-regulated scheme under which a subsidiary, uses the collateral under its management and undertakes to guarantee the bonds issued by the originator parent bank operates along similar principles, but within the general framework of civil law.

Source: European Covered Bond Council.

³⁸ Data as at end-June 2010, based on the weights of the Barclay Global Aggregate Index reflecting bond markets.

³⁹ Issuing covered bonds goes back as far as 1769 in Europe, and the first statutory regulations laid down to govern them entered into force in 1900. Currently, covered bond regulations are in place in 31 European countries. Some of these countries have established a separate special legal framework, others have set up criteria for bonds and issuers within the general framework of the civil law and the commercial law and on the basis of the individual contractual terms pertaining to the given instrument.

⁴⁰ These qualify as primary collateral; besides them, high-grade additional collateral (typically government bonds) can also secure covered bonds.

issuer itself becomes insolvent. Under the principle of specialisation, limitations are imposed on the range of activities covered bond issuers are allowed to pursue (imposed specialisation). The objective of such limitations is to discourage issuers from riskier activities, thereby ensuring that they are engaged in low-risk operations. There are significant differences between the individual European countries as to what extent issuers' range of activities is limited and the form in which it is regulated. Table 5 provides a brief overview of institutional models used in Europe. In short, under the specialised model, only specialised institutions (mortgage banks) are allowed to issue mortgage bonds. Under the universal model, commercial banks are also entitled to issue mortgage bonds.

The models adopted by individual countries can be categorised according to the extent to which the principle of coverage or that of specialisation prevails. The two principles together ensure that the expected loss on covered bonds as investment is low, i.e. it provides a low risk profile for the investor and a related low risk premium for the issuer. The two principles complement each other: broadly speaking, if one is weakened, the other has to be strengthened, otherwise the risk implied in the covered bond will increase. In Hungary, the operational framework of covered bond issues and mortgage banks is based on an earlier German model, i.e. along the specialised bank principle. Under the relevant legislation, only mortgage banks may issue covered bonds, and their activities are subject to strict limitations. They may only grant loans against mortgages on property located within EEA member states, and may engage in derivative transactions only for risk management and liquidity purposes. In terms of limitations on activities and collateral management, the Hungarian system is one of the strictest in Europe.

CHARACTERISTICS OF THE HUNGARIAN COVERED BOND MARKET

Initial development of the Hungarian mortgage loan market and covered bond market dates back to the early 2000s. Although the law laying down its operational framework was passed in 1997 already, and the first two mortgage banks were established a year later, business only picked up after the housing subsidy scheme was changed. In February 2000, interest subsidy related to covered bond issue was also extended to the purchase of existing homes, and supplementary interest subsidy was granted for the purpose

of the purchase and the construction of new homes. In 2001 the subsidy scheme was expanded to include a new component, i.e. liability-side refinancing. State subsidies boosted mortgage lending as well as issues of covered bonds. However, this surge was almost entirely the result of state subsidies on covered bond issues, and the main reason why most banks decided to offer this facility was to secure this subsidy entirely.⁴¹ In 2004, a high percentage (nearly 70 per cent) of mortgage lending was financed through issues of covered bonds by mortgage banks. Following the tightening of the housing subsidy scheme first at the end of 2003 and then in 2005, demand for subsidised loans diminished, and CHF-denominated loans took over the leading role in mortgage lending. Due to the availability of parent bank funding, the issue of covered bonds no longer played an important a role in the financing of foreign currency-denominated loans. As a result, only a mere 30 per cent of the total mortgage loan portfolio was secured on mortgage bonds by 2007. The main underlying reason for covered bond issues losing ground in refinancing of banks having foreign parents was price-driven: covered bond issue was more expensive than intra-group funding.

WHAT IS THE POTENTIAL EXTENT FOR FUTURE ISSUES?

The advantages and disadvantages arising from a possible change in scope of institutions authorised to issue mortgage covered bonds make a difference only if issuance potential is satisfactory and is coupled with willingness to issue. In the Hungarian banking system, the issuance potential of newly disbursed loans is significantly lower than that of the existing portfolio. If we consider the rise in the loan portfolio forecasted by the MNB as a starting point and, thanks to the regulatory changes that have entered into force, the entire portfolio of newly originated loans can be collateralised (that is, they are eligible for funding by covered bonds), a total volume of HUF 724 billion may materialise in the next five years as issuance potential. If, however, we want an issue volume with a certain degree of market liquidity, an issue size ranging between HUF 50 and 60 billion for each issuer seems feasible. Thus, for the period until 2015, a viable volume of newly originated loans would be possible only if issues were handled by not more than three or four banks. As, based on the current market structure, this is hardly feasible, the current structure of covered bond issues based on portfolio refinancing by purchasing independent liens is likely to prevail. As the

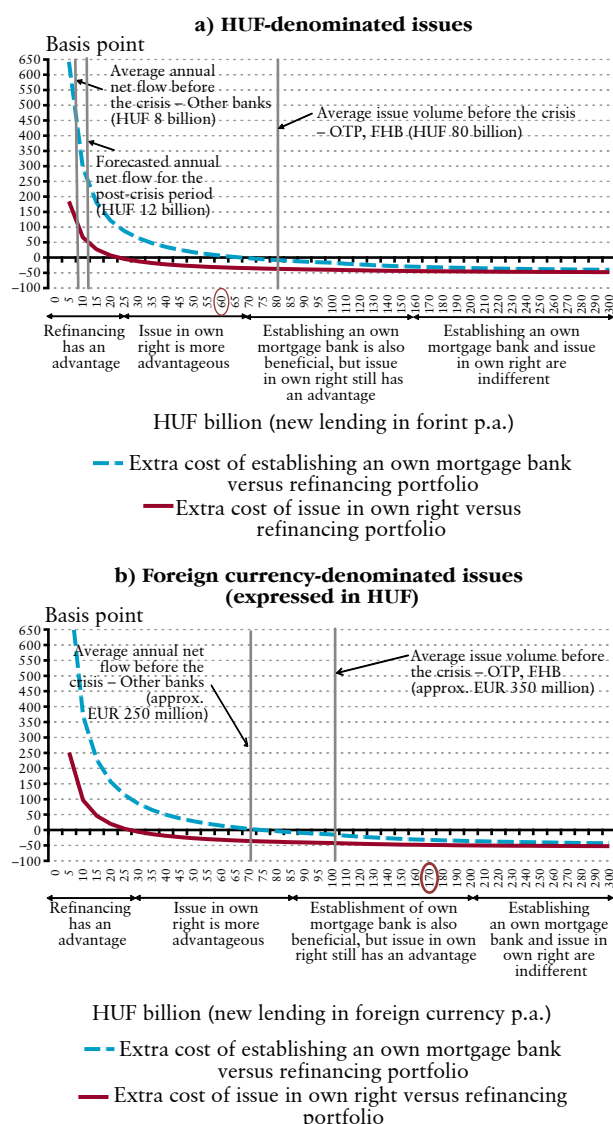
⁴¹ A typical example of this is that covered bonds issued by OTP Bank's own OTP Mortgage Bank were at this time subscribed by the parent bank itself (i.e. cash flows through the mortgage bank meant technical transactions; in fact, covered bonds were not intended to raise funds). From 2006 onwards, in keeping with the prevailing market trends, the situation started to change: the banking group, due to its expansions abroad, had to raise foreign funds, the financially most reasonable way of which was the issue of covered bonds. As a result, OTP Mortgage Bank has arranged a number of major covered bond issues abroad since 2006.

volume of the newly originated mortgage loans is expected to remain moderate, it is the existing mortgage loan portfolio that represents a truly significant potential for banks to base their covered bond issues on. Our estimates show that domestic banks and foreign branches can include a total of HUF 276 billion in HUF-denominated mortgage loans and a total of HUF 3,141 billion in foreign currency denominated loans (together amounting to over EUR 12 billion) in new covered bond issues based on the already existing loan portfolio, the volume of which could reach satisfactory levels even if only 5 to 7 banks are involved.⁴²

HOW MUCH IS LIKELY TO BE SAVED IN THE NEW MODEL?

The most important argument for the suggested change in the scope of institutions authorised to issue mortgage covered bonds is that the funding costs of mortgage lending would be reduced if refinancing mortgage banks could be circumvented from funding. Our impact study compared the extra costs that would be incurred through refinancing based on purchasing of independent liens,⁴³ funding by own established mortgage banks and financing through covered bonds issued by the individual banks themselves (in their own right). In each case we made calculations for two scenarios depending on whether we were quantifying HUF- or foreign currency-denominated covered bond issues.⁴⁴ Results reveal that, relative to the costs incurred by establishing a subsidiary mortgage bank, 40 and 15-20 basis points can be saved in the case of HUF- and foreign currency-denominated mortgage bonds, respectively, if bonds are issued by the individual banks themselves (in their own right). Similarly, if bonds are issued by the individual banks themselves (in their own right), roughly 50 to 80 basis points can be saved in the case of both HUF- and foreign currency-denominated mortgage bonds, respectively, relative to refinancing through the currently available institutions. Roughly, it is how much could be saved through a lower margin and the lower cost of funding upon a model change (Chart 34). In addition to more competitive costs, the maturity structure could be improved and investor's limits could be increased. Disadvantages include the risk of low volume and infrequent issues, fluctuations in rating agencies' confidence – on which investors rely heavily – as well as new counterparty risks arising from separation of mortgage loans that materialise on other liabilities (deposits

Chart 34
Extra costs of each structure versus the current refinancing facilities at various issue volumes



Note: The vertical lines denote the average annual volume of the mortgage bond series calculated for the period between December 2004 and June 2008. The scenarios analysed in the impact study is an annual HUF 60 billion (Chart a.) and EUR 600 million (i.e. HUF 170 billion, Chart b.) issue volume. The relevant curve is in the positive domain along a certain section, which means that the operations of a subsidiary mortgage bank/issue by the individual banks themselves in their own right is a more expensive solution than financing through an external mortgage bank. Conversely, the negative domain denotes that the operation of a subsidiary mortgage bank/issue by the individual banks themselves in their own right is a more beneficial solution.

⁴² However, it should be borne in mind that the method of estimation we adopted assesses the maximum extent of the issuance potential. Unfavourable HUF/CHF exchange rate and/or property values that are lower than their book value may reduce that part of the loan receivables that can be securitised.

⁴³ A mortgage bank refinances mortgage loans originated by a commercial bank; however, it only purchases the independent lien related to the original mortgage loans. The original loans remain on the commercial bank's books, and it is the commercial bank that services them.

⁴⁴ Under the scenario pertaining to the issue of HUF-denominated mortgage bonds we assumed that the total amount issued was an annual HUF 60 billion. The corresponding annual figure for foreign currency-denominated bonds is EUR 600 million. In each case, fixed and variable costs, thus costs related to foundation, issues and business operation as well as the cost of capital were taken into account for a 5-year period.

and unsecured bonds). These risks are, however, also inherent in the current model. Moreover, market confidence could be bolstered and even increased through meticulous, timely and well-communicated regulations.

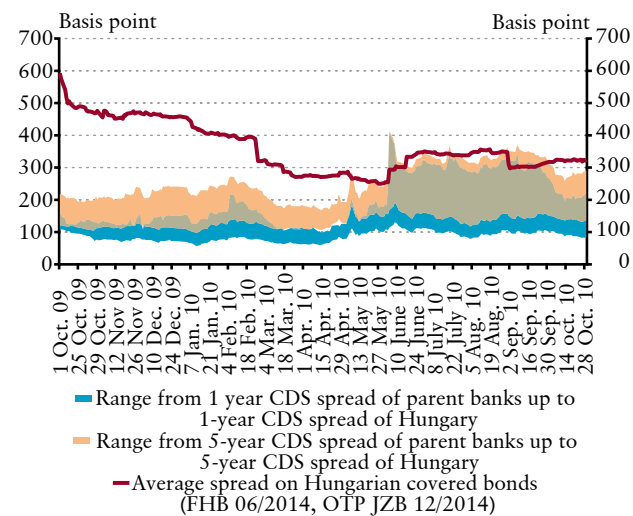
WHAT IS THE EXTENT OF WILLINGNESS TO ISSUE?

In addition to issuance potential, willingness to issue is another important factor. The inclination to issue depends on the differences between the pricing of funding alternatives and on efforts to improve maturity matching. Unless banks are willing to exploit the advantages offered by the universal model, it is unreasonable to allocate any resources to the change of regulations. In our opinion, incentives to refinance the current mortgage loan portfolio through the issuance of covered bonds are weak: although the need for improving maturity matching does feature among banks' strategic objectives, relying on long-term funding is uncommon due to price considerations. Currently, banks prefer short-term, less expensive external funding. Our estimates show that, over the past year, spreads on short-term (one-year) parent bank funding have been consistently 70 – 100-basis point lower than spreads on longer-term (five-year) parent bank funding. Compared even with relatively liquid covered mortgage bonds issued by domestic mortgage banks, spreads on short-term parent bank funding have been consistently lower, by approximately 100-200 basis points (Chart 35).

Although funding via covered bonds could improve the matching of maturities of assets and liabilities, this would be feasible only if banks had incentives to improve their practice for maturity matching and hence rely on covered

Chart 35

Comparison of parent banks' estimated cost of funding in the case of intra-group funding and covered bond issue



Note: For covered bonds, an estimated EURIBOR spread has been used. For the lower boundary of pricing foreign funds we used the 1- and the 5-year average CDS spreads of the parents, while for upper bound the 1- and 5-year sovereign CDS spreads of Hungary, respectively. Thus, the plotted bands indicate the possible ranges of foreign funding.

Source: Thomson Datastream.

bond funding more heavily. Incentives towards this end could include market mechanisms through the changes in the yield curve or new regulations aimed at promoting maturity matching. As regards the above factors and the current economic and regulatory environment, we do not think that the change of the current system of covered bond issuance is topical or imminent; nevertheless, this issue shall be revisited at a later date.

7.2 MNB's recommendations for transparent pricing of household loans⁴⁵

The pricing of household loan products has not been transparent for clients so far, raising competition-related problems, ensuring considerable market power for banks in household lending, and making loans expensive. Furthermore, it has also resulted in an excessive increase in the debt servicing burdens of households since the onset of the crisis. Having pointed out this problem on a number of occasions⁴⁶, the central bank put forward an actual proposal in August 2010. The objective of the proposal was to initiate regulatory changes that help render the pricing of household loan products more transparent, enhance competition and encourage more sound loan pricing.⁴⁷

MNB put forward the following five recommendations:

1. Contrary to the current practice, in which banks can change the prices of household loan products unilaterally, under an envisaged new practice the pricing of household loan products should be as following: fixed premium with interest linked to a reference interest rate (tracker loan) or interest rate fixed for several years ahead (fixed rate).
2. Regular service fees on loans should be abandoned (or be incorporated in the interest rate).
3. Prohibition on the unilateral widening of the foreign currency margin and/or a cap on the foreign currency margin and/or making loan disbursement and loan redemption in the given foreign currency possible (relevant for foreign currency denominated loans).
4. Correction of Government Decree no. 361/2009 which currently hinders the remortgaging of CHF-denominated loans.
5. Compulsory credit register recording every household borrower.

Banks' dominant position vis-à-vis household borrowers should be addressed primarily through the regulation of

pricing. The MNB proposes a solution that could protect consumers and is also feasible from the perspective of banking operation. According to our proposal banks should peg their loans to a reference interest with a fixed premium (tracker loan), or charge fixed interest (for a longer period of time). Clients would thus be able to choose between a transparent change or safety. Either way, they would be better off than they are now with interest rates that banks can currently change arbitrarily. This new regulations should be also applied to the existing portfolio.

Another recommendation also aimed at transparency is that banks should not impose regular service fees on loans, rather, they should incorporate them in their interest rates. Although some banks no longer apply any service fee to mortgage loans (as a favourable change), others still impose sizeable fees often amounting to as much as 1 or 2 per cent of the outstanding principal. Although the service fee is included in the annual percentage rate (APR), this is only a snapshot. The fact that the service fees and interest are separately charged influences APR dynamics, which makes the comparability of products even more difficult.

In the case of foreign currency denominated loans, a revised regulation of exchange rate margins that banks currently establish arbitrarily would also promote transparency and facilitate the remortgaging of foreign currency denominated loans. Since arbitrary changes of exchange rate margins by banks have the same effect on borrowers' monthly instalment amount as changes in interest rates, these two issues are to be addressed together. Besides transparency, exchange rate margins also matter when foreign currency-denominated loans are remortgaged. Given that in the case of a large number of foreign currency denominated loans, debtors' loan accounts are managed in HUF (while loans are recorded in a foreign currency), when a loan is remortgaged, debtors incur losses on exchange rate margins twice (first when the new loan is converted into HUF, and second, when it is converted back into the relevant foreign currency during the pre-payment of the old loan). This makes remortgaging, i.e.

⁴⁵ This chapter is based on information available until end September 2010.

⁴⁶ According to the Monetary Council's communication on 8 February 2010, the MNB "will initiate further steps in order to improve HUF-denominated mortgage lending; (...) these steps are aimed at making mortgage loan products more transparent". A key message of the April 2010 Report on Financial Stability was that interest on both HUF- and FX-denominated loans and interest margins are high in a regional comparison. In its related statement, the Monetary Council stressed that in order to maintain their profitability, banks had, through their pricing policies, been reducing interest on their existing household loans only gradually and only partially, despite the increasingly lower funding costs. The MNB pointed out that, although such pricing behaviour did strengthen the banks' balance sheet, it reduced households' disposable income and household consumption.

⁴⁷ http://english.mnb.hu/Sajtoszoba/online/mnben_pressreleases/mnben_pressreleases_2010/mnben_kozlemany_20100920.

switching to other service providers, significantly more expensive, which, in turn, reduces competition.

The MNB proposed that the stipulations that currently prevent the remortgaging of Swiss franc-denominated mortgage loans should be modified. A modification of Government Decree 361/2009 this May has made the remortgaging of the overwhelming majority of these loans practically impossible. The referenced statutory regulations only allow CHF-denominated mortgage loans to be remortgaged with another CHF-denominated loan under a 45-per cent loan-to-value (LTV) ratio; however, taking into account the current rates of exchange, this LTV ratio is exceeded in the case of over 85 per cent of all CHF-denominated mortgage loans. As a result, clients with such high LTV-loans would only be able to remortgage their existing loans (and switch to another service provider) with a HUF- or EUR-denominated product. However, in this case, borrowers should close their HUF/CHF or EUR/CHF position, and realise substantial exchange rate losses. Experience shows that clients are unwilling to do this (whether such unwillingness is reasonable or not). Thus, the *de facto* exclusion of a large part of CHF-denominated products from remortgaging does not help reduce the current CHF-denominated outstanding amount; but it chains debtors into bondage to their current lenders. Although currently, there are no CHF-denominated products available in the market, as remortgaging is not possible, because new debtors are subject to the provisions of Act XC of 2010 on the prohibition of foreign currency-denominated mortgage lending.⁴⁸ If, however, Government Decree no. 361/2009 were modified in the direction proposed by the MNB, quite a few institutions could enter the market and try to attract remortgaging CHF-borrowers with competitive offers. As a result, borrowers could remortgage their existing loans with ones with a more favourable interest rate (and their current lenders would be exposed to some competitive pressure).

The compulsory credit register of household debtors would further develop banks' risk management quality, and thus protect the banking system from loan loss shocks more effectively. Limitations on the unilateral modification of contracts could prompt banks to charge higher risk premiums on new loans due the uncertainty surrounding the size of future loan losses and the limitations on the extent to which they can be passed on consumers. Lest the introduction of more transparent pricing lead to higher risk premiums, a toolkit is needed that helps gauge risks more accurately, achieve differentiated pricing and, in the case of new loan originations, reduce interest rates charged to more creditworthy debtors. One of the tools could be the

compulsory credit register, which the MNB has been urging for years now. Most EU countries have managed to find a solution that meets both data protection and risk management criteria, so Hungary, too, will likely to be able to achieve a compromise in this respect.

WHY INTERVENE? – LACK OF PRICING TRANSPARENCY AND ITS IMPLICATIONS

Over the past years, a pricing practice prevailed in the Hungarian household lending market, in which banks have been able to change the interest rates of household borrowers unilaterally. Under this practice the lender bank discloses arbitrarily the interest rate that it will charge to its customers from the next interest period onwards by a declaration at the end of each (usually short, 3 to 12-month) interest period. In some cases there is no repricing period at all, and banks set the applicable interest rate anytime at will. Banks decide on interest rates on the basis of their internal business policy decisions arbitrarily, in a manner that it is unpredictable for consumers.

As a result, a rational and conscious choice between different banks' household loan products has not been possible in Hungary (in a manner that selection is based on the comparison of the various products). Borrowers do not know for certain how the terms on their loan (often with a maturity of 15 to 25 years) will change, even substantially, from the next interest period, i.e. in 3 to 12 months at the latest. This holds true for not only borrowing, but also the remortgaging of existing ones, as borrowers do not know for sure how long the possibly more favourable terms offered by the new lender will remain truly so, and whether it is financially reasonable to switch to another service provider. Consequently, given that product comparability is practically impossible, the concept of competition between service providers faces challenges.

Due to imperfect competition, nothing prevents banks from charging to their clients interest that is higher than what would be the competitive price. This is aggravated further by the fact that since 2009, due to the above changes in business terms and the regulatory environment, a large number of consumers have been in bondage to their current bank, which has further increased their predicament. If loan prices are higher than the competitive level, i.e. banks can earn extra profit, this will reduce indebted consumers' disposable income and, through this, consumption and its contribution to economic growth. Therefore, competition obstacles in lending to households bear relevance not only to consumer protection, but also hit general business activity.

⁴⁸ The act permits remortgaging, thus, it does not impose any restrictions.

The practice of unilateral contract modifications impairs – in the case of HUF-denominated loans – the efficiency of the interest rate channel of monetary policy. Furthermore, it provides not enough incentives to financial institutions to develop their risk management practices, as they can pass on increased funding costs and losses to performing borrowers.

REGULATIONS TO DATE HAVE NOT PROVIDED A SOLUTION TO THE PROBLEM

Although a number of regulation-related attempts were made in 2009 to change the above situation, they all failed. Even though the Hungarian Parliament did amend the Credit Institution Act in March 2009⁴⁹, according to which banks may change loan prices only in justified cases, credit institutions have, in fact, circumvented the new regulations by making wide “cause lists” about rather general explanations and causes. Under pressure from the government and with the co-ordination of HFSZ, in September 2009 credit institutions finally worked out a Code of Conduct, pursuant to which they undertook, with effect from 1 January 2010, to exercise moderation regarding their room for manoeuvre for pricing. But in essence, this was tantamount to a moderate reduction in the number of the justifications/reasons for unilateral modification of loan contracts. The MNB participated in the initial phase of the discussions related to the Code of Conduct, and proposed that interest rates should be pegged to reference interest rates, because self-regulations would only keep up the vague “cause lists” and therefore, the transparency of pricing would not improve, relative to the earlier practice. Nevertheless, the government approved the Code of Conduct and even incorporated it – by way of a legal modification – into the legislation. Thus, currently, this and the Credit Institution Act modified somewhat in autumn 2009 together provide the currently effective regulatory framework in loan pricing, which does not, in effect, constrain the freedom that banks enjoy in pricing.

Lack of transparency also prevails in the case of the mortgage products that have recently entered the market since the compilation of the Code of Conduct. The central bank studied the parameters of these new products. A favourable development is that HUF-denominated mortgage products pegged to reference interest rates have been gaining ground to an increasingly large extent. However, currently, roughly half of the major retail banks (or those that are the most active in the origination of new loans) offer loan products where changes in interest rates are pegged, in whole or in part, to a reference

interest rate or where interest is fixed for a longer interest period). Even so, we must not lose sight of the fact that even these products fail to end consumers’ vulnerability because many banks can still change premiums above the reference rate arbitrarily, and re-pricing is frequent: several banks establish one-month interest rate repricing periods⁵⁰. In the case of loans with one-month interest rate repricing periods and premiums over their reference rates, which can be modified unilaterally by the lender we cannot speak of genuine tracker loans.

HOW CAN BANKS’ ABILITY TO RESTRICT COMPETITION BE QUANTIFIED?

It is difficult to conclusively prove that banks restrict competition in pricing because funds are not earmarked to loans. As we cannot say which funds finance which loans, the exact cost of funding of a given mortgage loan cannot be determined. Thus we should take into account the average funding cost on which, however, we do not have any data.⁵¹ Thus, we confined ourselves to providing only estimates for banks’ profit margins. We made calculations for CHF-denominated mortgage loans, which account for the overwhelming majority of the household loan portfolio.

Estimates suggest that since the onset of the crisis, the credit institutions have passed on burdens to borrowers with CHF-denominated debt to an extent that has exceeded the increase of their funding costs and loan losses. Between September 2008 and June 2009, the average interest rate on these products rose from 7.1 per cent to 8.1-8.2 per cent, and it seems to have been stuck there ever since (approx. +100-110 basis points). During the same period the reference interest rate of the Swiss franc (3-month CHF-LIBOR) has dropped from 2.8-2.9 per cent to below 0.2 per cent, and has stayed there (-260 to -270 basis point). Thus, overall, the gap between the discount rate of the Swiss franc and interest on CHF-denominated mortgage loans has widened by approximately 360 to 380 basis points. Neither the cost of funding, nor the cost of risk justified an increase of this proportion during most of the period:

- *Sovereign risk costs*: CDS premia reflecting sovereign risks have indeed risen relative to the average 135 basis point value in the third quarter of 2008, i.e. the last quarter before the onset of the crisis; since October 2008 it has averaged at 320 basis points (+ 185 basis points). It should be borne in mind, however, that CDS’ only provide a crude upper estimate of the increase in the funding cost, because they only represent marginal costs and affect the bank’s assets currently being re-priced or prolonged.

⁴⁹ Act XIII of 2009 on the modification of certain laws affecting the supervision of the system of financial intermediation

⁵⁰ Pursuant to Section 3 of Act CLXII of 2009 on loans to consumers, during interest periods lenders may not modify contracts unilaterally.

⁵¹ Except mortgage bond-based financing, but this type of financing is used only in approximately 30 per cent of the total mortgage loan portfolio.

• *Deposit margins and swap costs:* One of the methods of financing foreign currency denominated loans is when banks raise funds in foreign currencies; meanwhile Hungarian banks can also fund their foreign currency denominated loans by converting their HUF deposits into foreign currency through swap transactions. In this case both changes in deposit margins and swap costs may influence the funding costs. It is important to emphasise, however, that this impact cannot be added to changes in sovereign risk premiums because banks use either direct external funding or forint funding converted into foreign currency through swaps (i.e. in the latter case, changes in sovereign risk premiums are only reflected in swap costs). Domestic banks' margin on household deposits had declined from a pre-crisis level of 2.8 to 3.0 per cent to 0.9 to 1.2 per cent by the end of 2009. In addition, swap costs (related to the total volume of swaps) were approx. 100 to 200 basis points higher between October 2008 and May 2009 than their pre-crisis level; since then, they have returned to their pre-crisis level. This temporary rise in swap costs materialised at a time when the erosion of deposit margins was not significant (in fact, the base rate rise by 300 basis points in October 2008 increased deposit margins temporarily to a significant extent). Overall, the increase in the funding costs based on deposit margins and swap costs cannot have reached 200 basis points; and in fact, it was much lower than this last spring and last summer. Moreover, it is still a moot question whether it is justified to pass on higher deposit rates to borrowers; if banks had not been able to increase the interest rates so easily, they would have exercised more caution in raising deposit rates.

• *Changes in loan losses:* 12-month moving average losses as a proportion of the total outstanding amount of CHF-denominated loans⁵² had risen from their pre-crisis level of 0.5-0.7 per cent to 1.8 per cent by the end of 2009 (110 to 130 basis points) and 2.1 per cent by June 2010 (140 to 160 basis points). However, here the question arises too whether it is acceptable that banks pass on the entire amount of their loan losses to performing debtors. Under the principle of prudent operation, banks have to incorporate their loan losses into loan prices in a manner that they are spread over the entire economic cycle; therefore, increase in loan losses should not increase interest rates because this is a pro-cyclical behaviour leading to a rise in the number of defaulting debtors (as their burdens increase in a stress situation).

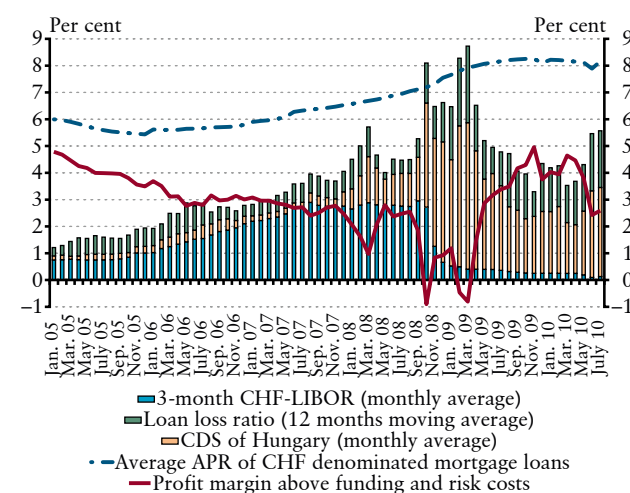
For most of the post-crisis period, even if the rising funding costs and risks are taken into consideration, banks earned

higher profits on CHF-denominated mortgage loans than before October 2008. Although credit institutions seem to have suffered temporary losses on these products between October 2008 and April 2009, the magnitude of such losses was probably much lower than presented here, as CDS premiums grossly overestimate increase in the average funding costs (particularly so, as markets froze completely when CDS premiums broke records) (Chart 36). Chart 37 shows the interconnection between the HUF deposit, margin + swap costs-based calculation of the funding costs and the CDS-based calculation of the funding costs: the CDS-based approach detached itself from HUF deposit + swap cost-based calculations (i.e. average cost-based calculations) during the very period when CDS premiums peaked (i.e. between October 2008 and May 2009, and since June 2010). This confirms the fact that a seemingly large drop in profit margins caused by higher CDS premiums did not actually materialise to such a degree in the case of CHF-denominated products.

In other countries in the CEE-region burdens on households indebted in foreign currencies have not increased to the extent that they have in Hungary. In CEE countries with a floating exchange rate regime and sizeable foreign currency lending (Poland and Romania), the lowering of the base

Chart 36

Decomposition of profit margin of domestic CHF-denominated loans



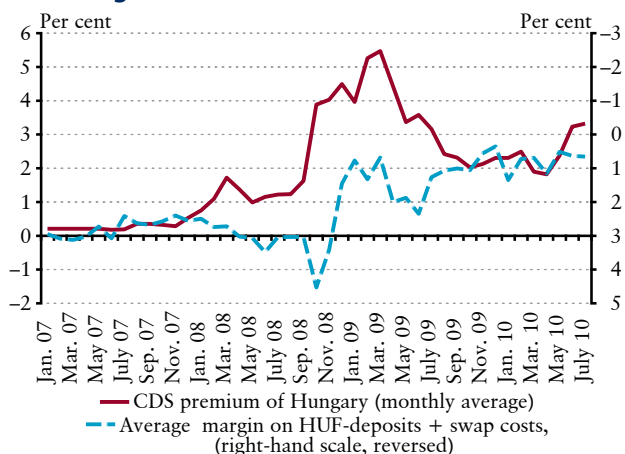
Note: The portfolio loan rate is a calculated value because only data on interest are available in the MNB's interest statistics. To this was added approximately 1.5 per cent in service fees because our experience shows that banks charge an average 1 to 2 per cent service fee to their clients. Since in the case of the unilateral modification of contracts banks basically change interest rates, it can be assumed that service charges have not changed since the crisis.

Source: MNB.

⁵² These loan loss rates pertain to the total portfolio of CHF-denominated loans; thus, besides losses on mortgage loans, they also include those on vehicle financing loans; as a result, they probably overestimate the actual loan loss rate on CHF-denominated mortgage loans (in connection with which no separate data are available).

Chart 37

Comparison of the CDS-based and the HUF deposit-margin + swap costs-based calculations of funding costs



Note: The right axis of the chart shows developments in the average funding costs based on HUF-denominated household deposits, margins + swap margins. The scale is inverse because the lower deposit margins (the difference between average household deposits and 1-month BUBOR) are, the more funds cost to banks. Swap costs are the difference between yields on swaps less differences between reference interest rates.

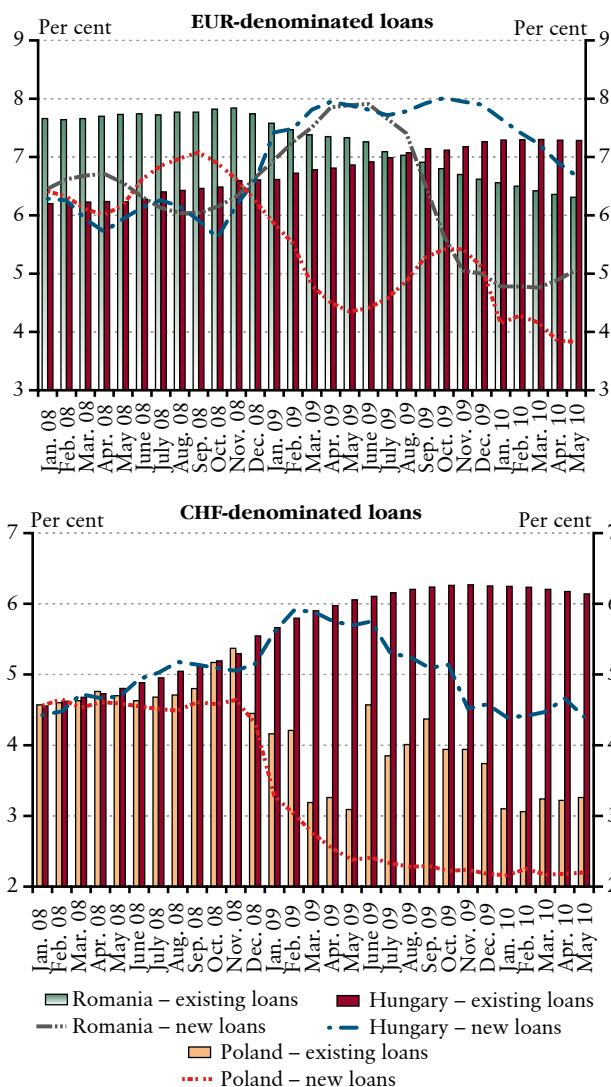
Source: Datastream, MNB.

rates in the euro area and in Switzerland has fed through into lending more tangibly than in Hungary. (Chart 38). While the prices of CHF-denominated housing loans moved in conjunction in Poland and Hungary before the crisis, difference in interest rates in the two countries has since grown to 3 percentage points, which is not justified by differences in sovereign risks (in the first half of 2010 the corresponding value was hardly half of the current one). Similar to Lithuania and Latvia, the price of foreign currency-denominated loans is typically pegged to reference interest rates in Poland. Average interest rates on euro-denominated loans were lower even in Romania despite the fact that CDS premia on Romania exceeded those on Hungary for most of the period. Interest rates similar to those in Hungary were only charged only in Bulgaria, where banks can adjust their interest rates freely as in Hungary.

Since domestic banks' profit margins were not low before the crisis either, the rise after the crisis cannot be considered as compensation for earlier under-pricing. Interest rates were the same as in Poland, and there were no significant differences in terms of costs either between the two banking sectors prior to the crisis (from 2008 on, there was a 50-basis point difference in the case of CDS spreads; loan losses were, however, practically identical). When compared

Chart 38

Developments in average interest rates on new and existing residential mortgage loans in Poland, Hungary and Romania



Source: Websites of respective national central banks.

with their West European peers, Hungarian mortgage loans do not look reasonably priced, either. According to a study on European mortgage markets by Mercer–Oliver–Wyman⁵³ the estimated annual post-tax profit margin on mortgage lending amounts to 0.16-0.46 per cent in West European countries. Adjusted for a 20-per cent corporate tax rate and including operating costs accounting for 0.35-0.72 per cent of the outstanding amount as disclosed in the study, the individual countries' profit margin as a percentage of the outstanding amount accounts for 0.63-1.13 per cent. This is substantially lower than Hungarian lenders' profit margin amounting to 2-4 per cent of their portfolio.

⁵³ Mercer, Oliver and Wyman: Study on the Financial Integration of European Mortgage Markets, October 2003, <http://www.nykredit.dk/investorcom/ressourcer/dokumenter/pdf/Wymanreport.pdf>.

Appendix: Macro-prudential indicators

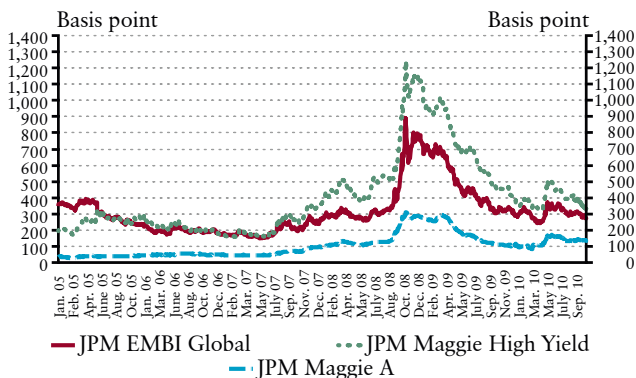




1 Risk appetite

Chart 1

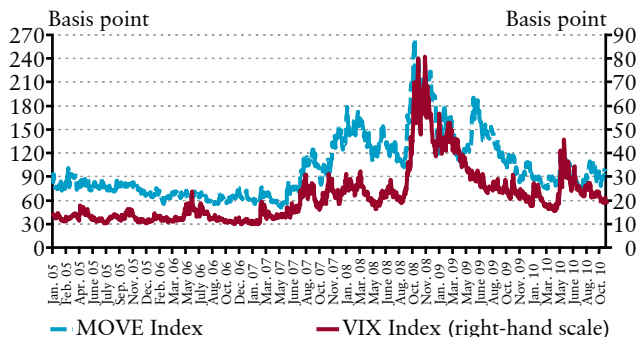
Primary risk indicators



Source: Datastream, JP Morgan.

Chart 2

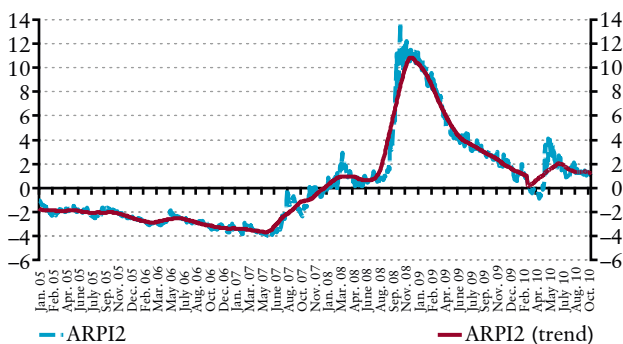
Implied volatility of the primary markets



Source: Datastream, Bloomberg.

Chart 3

Dresdner Kleinwort indicator



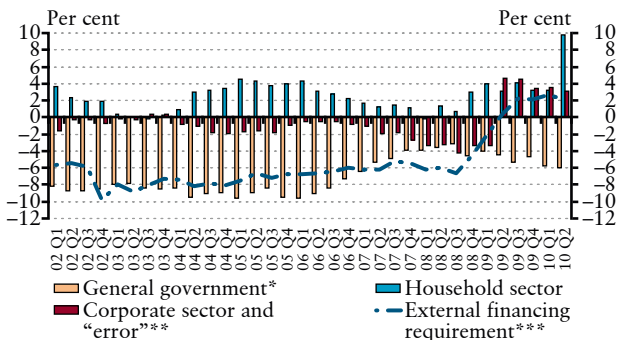
Source: DrKW.

2 External balance and vulnerability

Chart 4

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

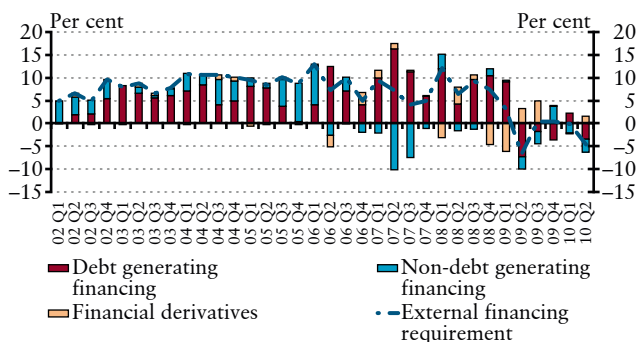
(seasonally adjusted)



Source: MNB.

Chart 5

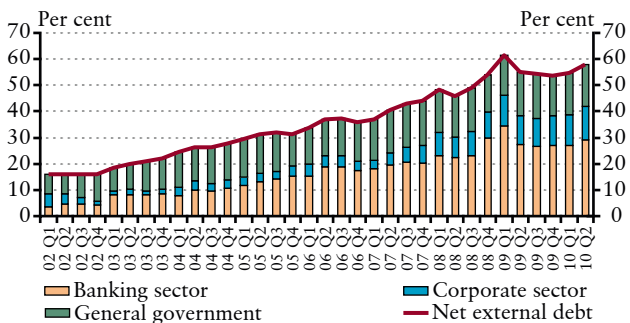
External financing requirement and its financing as percentage of GDP



Source: MNB.

Chart 6

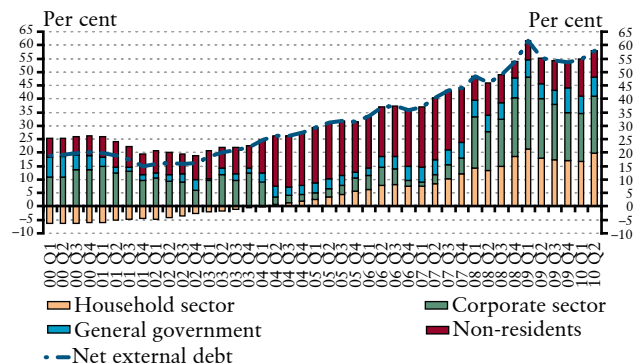
Net external debt as percentage of GDP



Source: MNB.

Chart 7

Open FX position of the main sectors as percentage of GDP



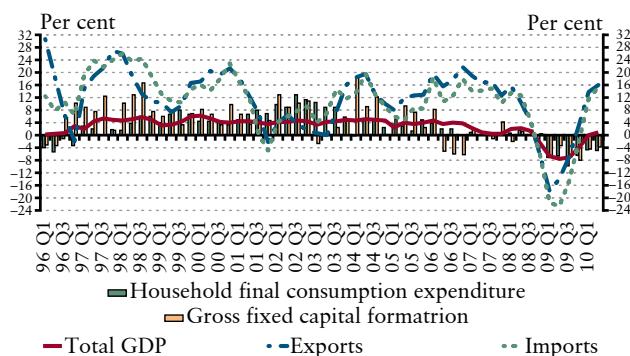
Source: MNB.

3 Macroeconomic performance

Chart 8

GDP growth and its main components

(annual growth rate)

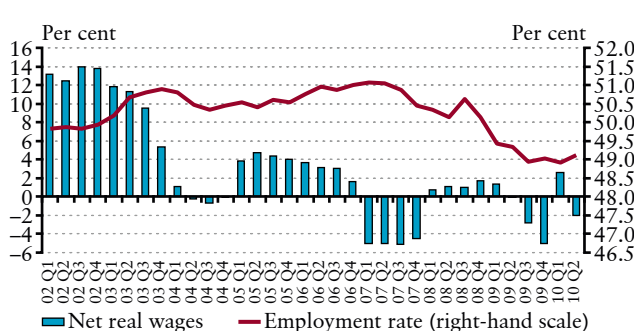


Source: HCSO.

Chart 9

Employment rate and net wage developments

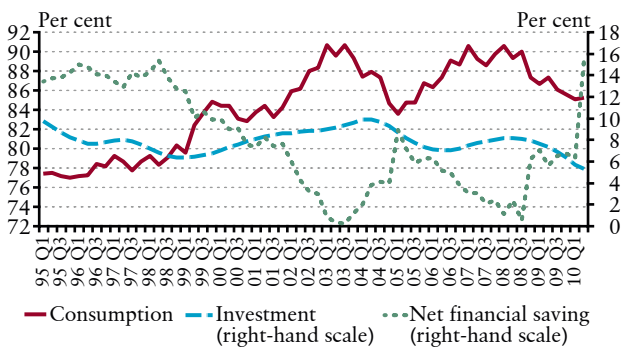
(annual growth rate)



Source: HCSO.

Chart 10

Use of household income as a ratio of disposable income

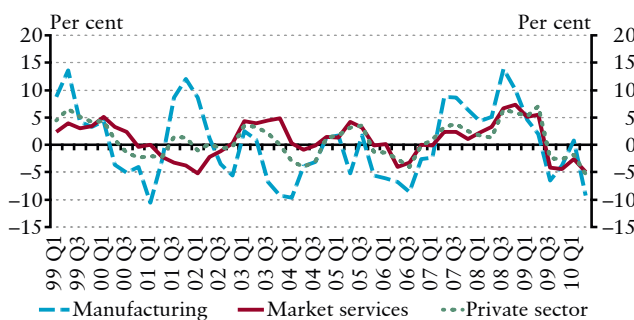


Source: HCSO, MNB.

Chart 11

Corporate real unit labour cost in the private sector

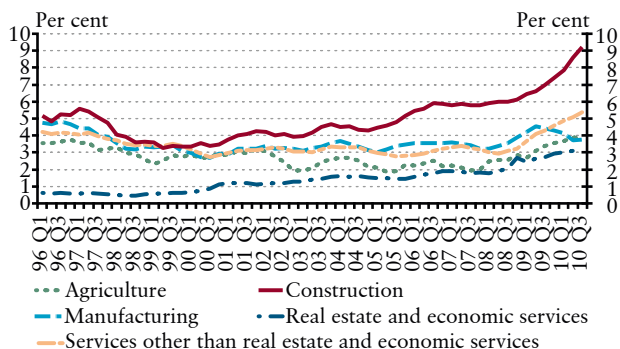
(annual growth rate)



Source: HCSO, MNB.

Chart 12

Sectoral bankruptcy rates

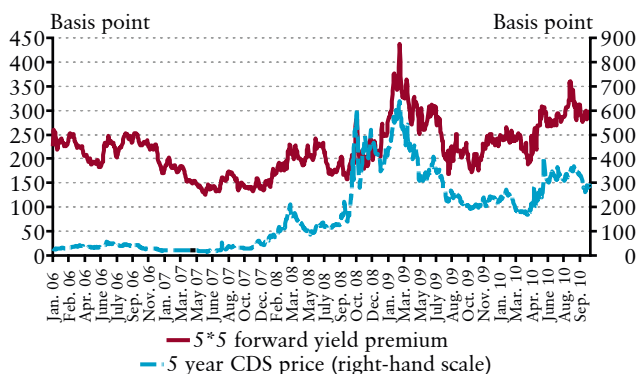


Source: Opten, HCSO, MNB.

4 Monetary and financial conditions

Chart 13

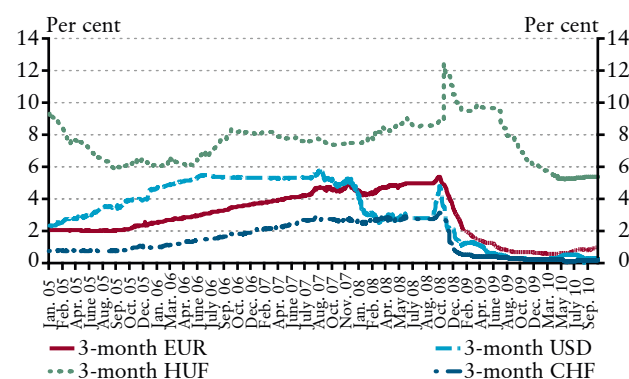
Long-term default risk and forward premium of Hungary



Source: Datastream, Reuters.

Chart 14

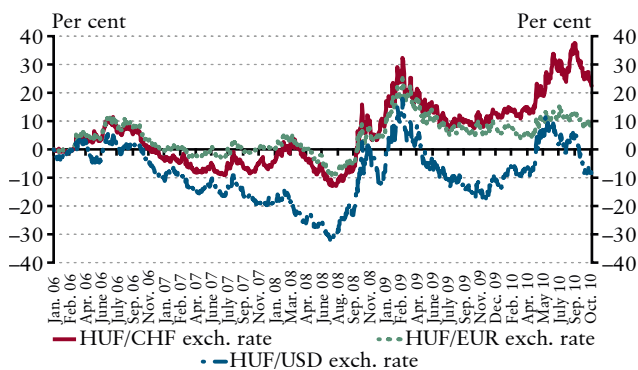
Three-month EUR, USD, CHF and HUF money market interest rates (LIBOR and BUBOR fixing)



Source: Reuters.

Chart 15

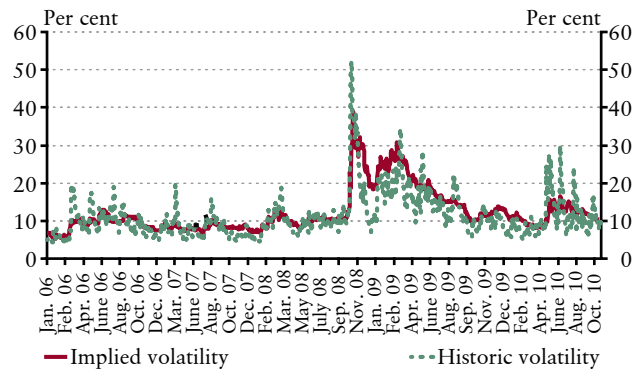
HUF/EUR, HUF/USD and HUF/CHF exchange rates compared to January 3, 2005



Source: Reuters.

Chart 16

Volatility of the HUF/EUR exchange rate

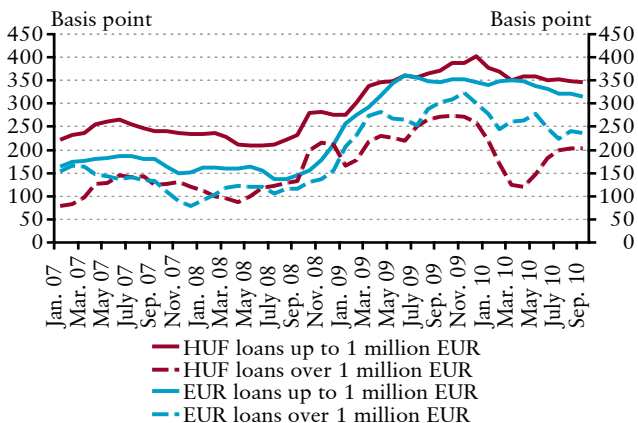


Source: Reuters, MNB.

Chart 17

Interest rate premium of new loans to non-financial enterprises

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

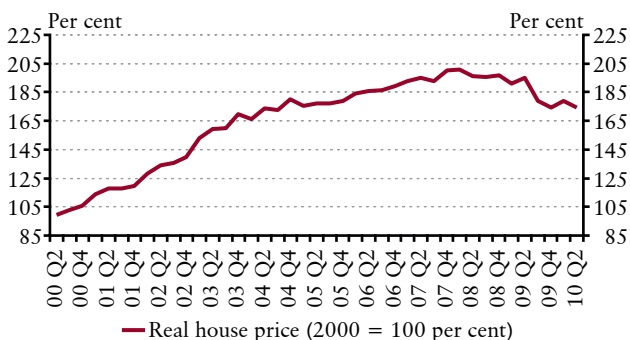


Source: MNB, Euribor.

5 Prices of instruments

Chart 19

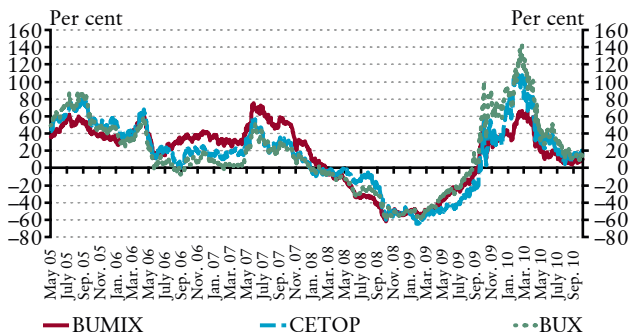
Real home prices



Source: FHB.

Chart 21

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

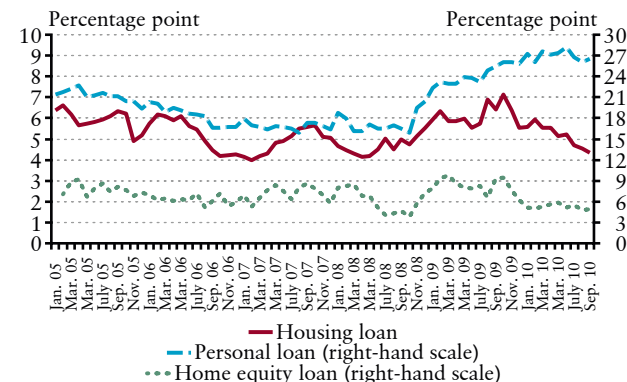


Source: BSE, portfolio.hu.

Chart 18

Interest rate premium of new HUF loans to households

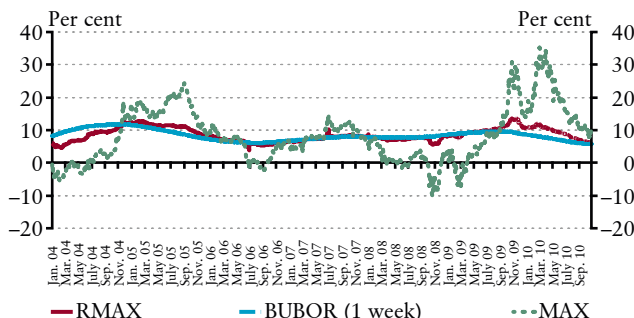
(over 3-month BUBOR)



Source: MNB.

Chart 20

Annualised yields on government securities' indices and money markets

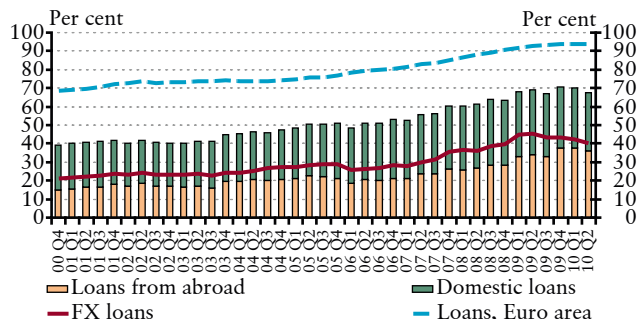


Source: ÁKK, portfolio.hu, MNB.

6 Risks of the financial intermediary system

Chart 22

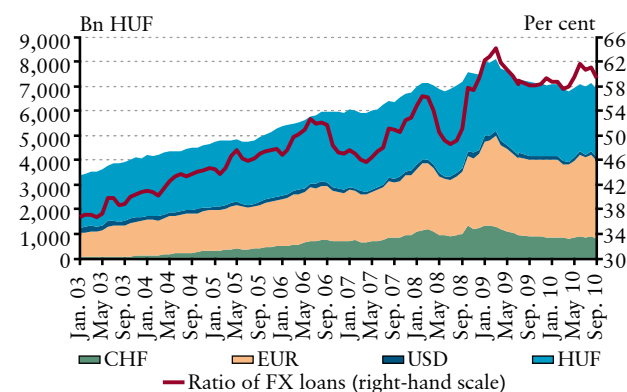
Indebtedness of non-financial enterprises as a percentage of GDP



Source: MNB, Eurostat.

Chart 23

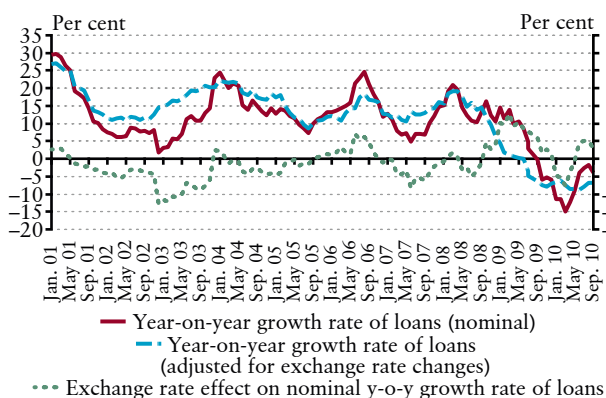
Denomination structure of domestic bank loans of non-financial enterprises



Source: MNB.

Chart 24

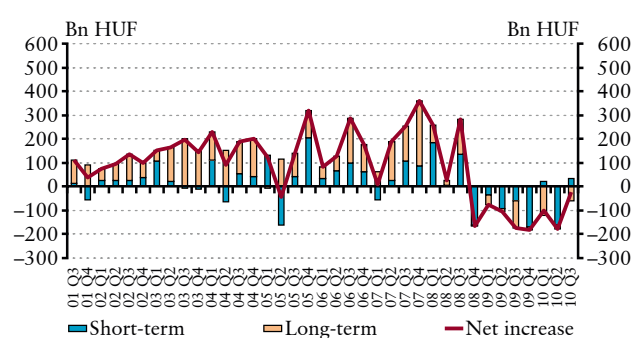
Annual growth rate of loans provided to non-financial corporations by domestic banks



Source: MNB.

Chart 25

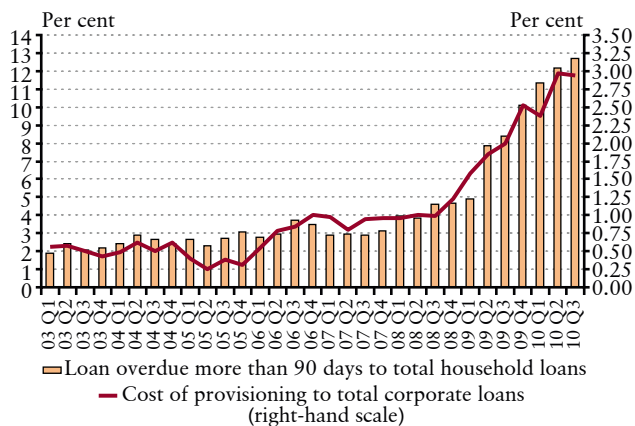
Net quarterly change of bank loan volumes of non-financial enterprises



Source: MNB.

Chart 26

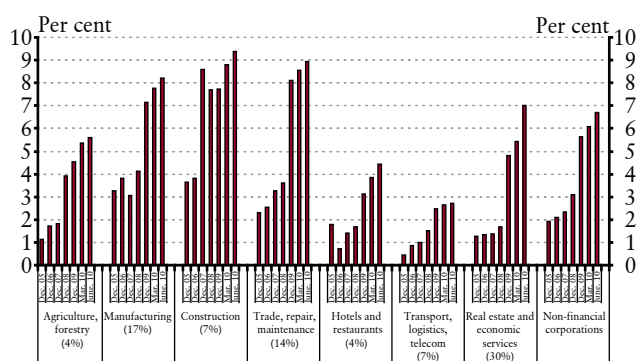
Quality of the corporate loan portfolio



Source: MNB.

Chart 27

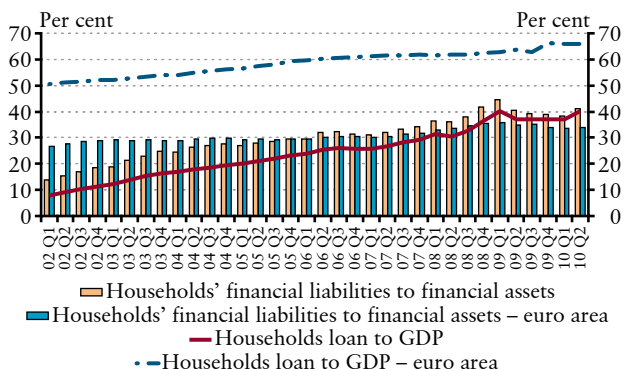
Provisioning on loans of non-financial corporations by industry



Source: MNB.

Chart 28

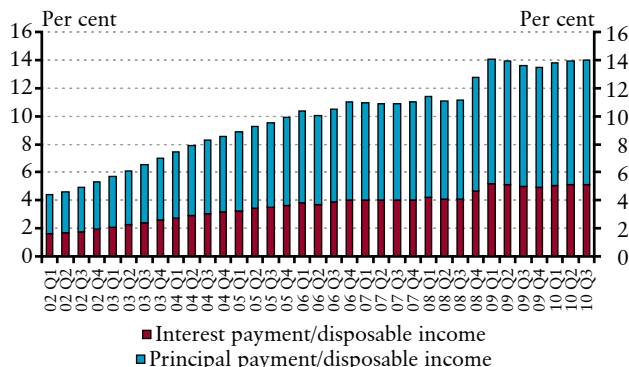
Indebtedness of households in international comparison



Source: ECB, MNB.

Chart 29

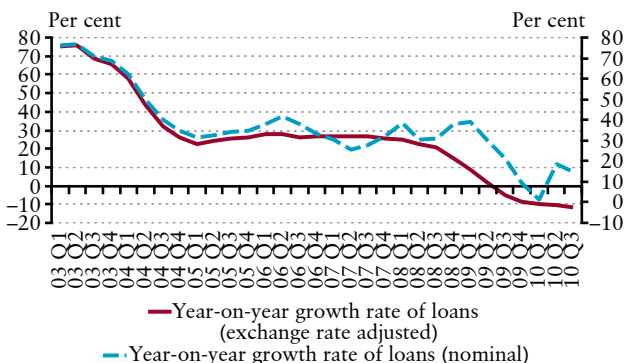
Debt service burden of the household sector



Source: MNB.

Chart 30

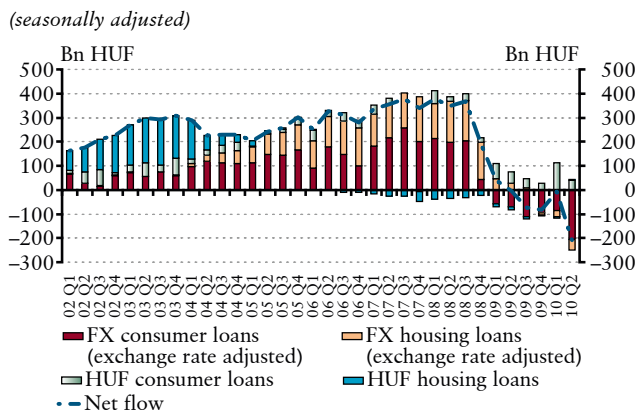
Annual growth rate of total household loans from banks



Source: MNB.

Chart 31

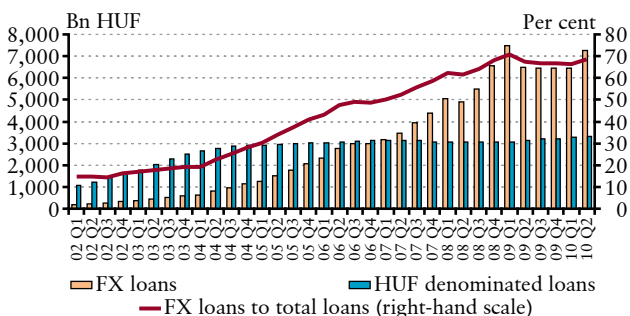
Net quarterly change of bank loan volumes of households by main products and currencies, adjusted for exchange rate changes



Source: MNB.

Chart 32

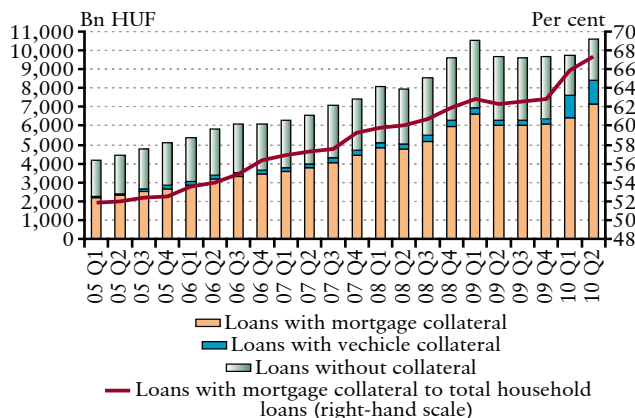
Household loans distribution by denomination



Source: MNB.

Chart 33

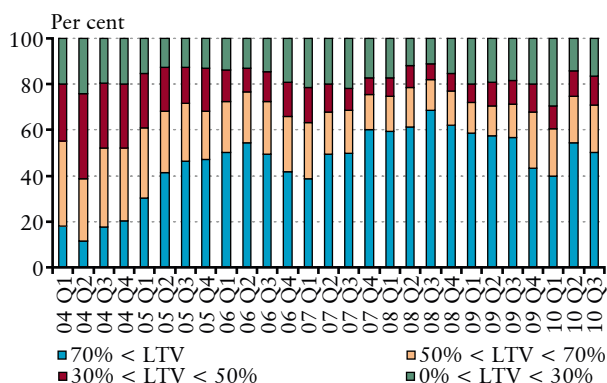
Household loans distribution by collateral



Source: MNB.

Chart 34

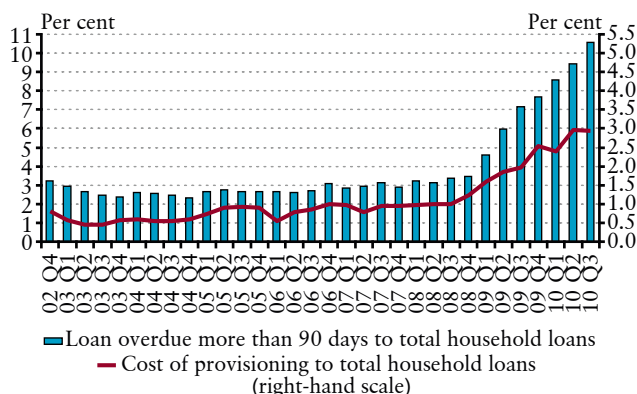
Distribution of new housing loans by LTV



Source: MNB.

Chart 35

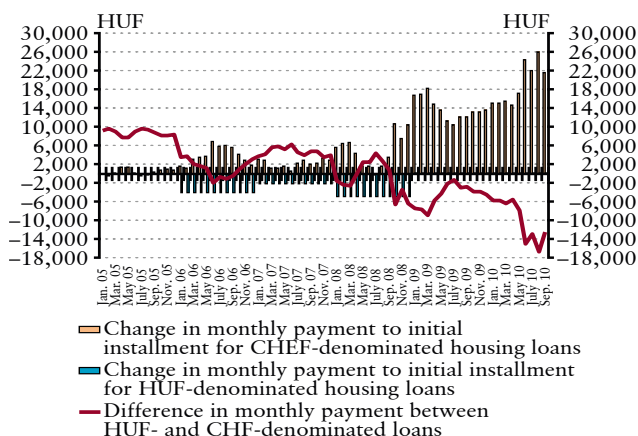
Quality of the household loan portfolio



Source: MNB.

Chart 36

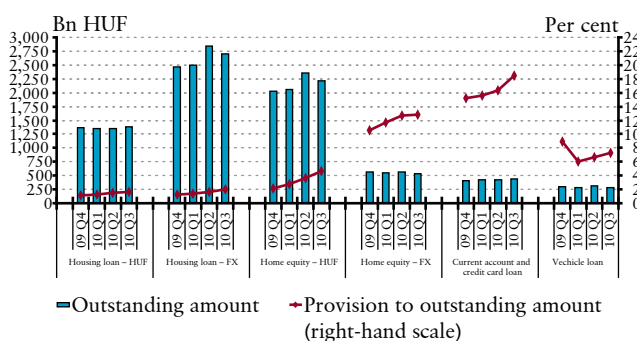
Comparison of instalment payments of CHF- and HUF-denominated housing loans



Source: MNB.

Chart 37

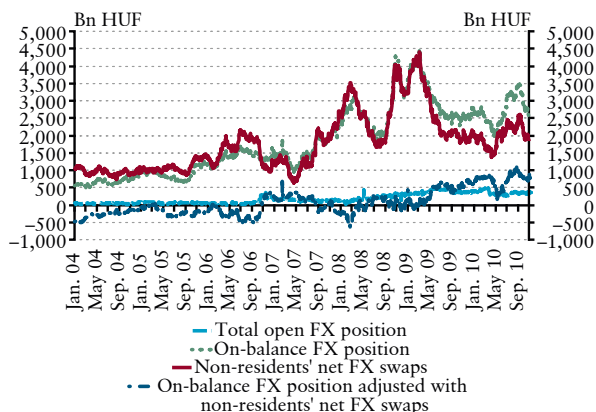
Provisioning on household loans



Source: MNB.

Chart 38

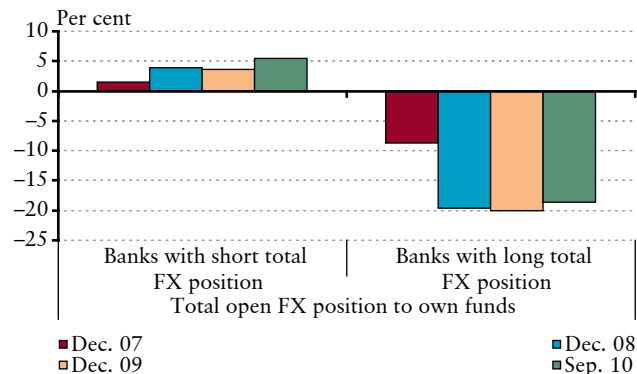
Open FX position of the domestic banking system



Source: MNB.

Chart 39

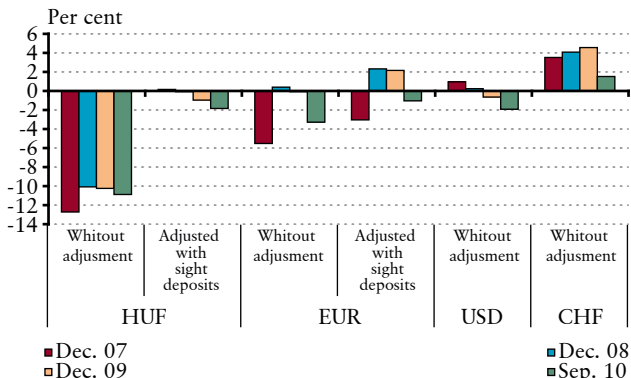
Banking sector's exchange rate exposure



Source: MNB.

Chart 40

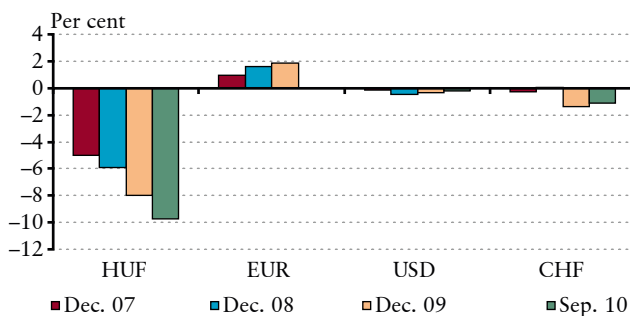
90-day re-pricing gap of the banking sector



Source: MNB.

Chart 41

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

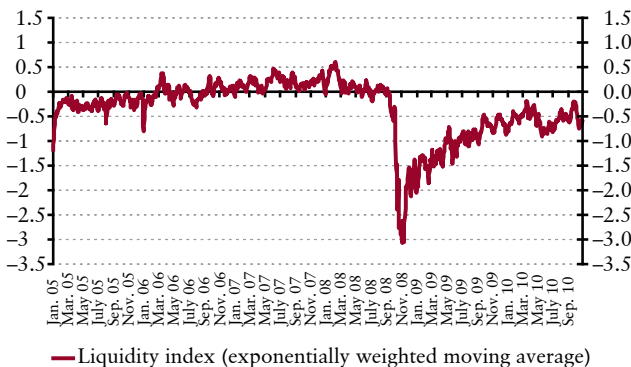


Source: MNB.

Chart 42

Liquidity index

(exponentially weighted moving average)

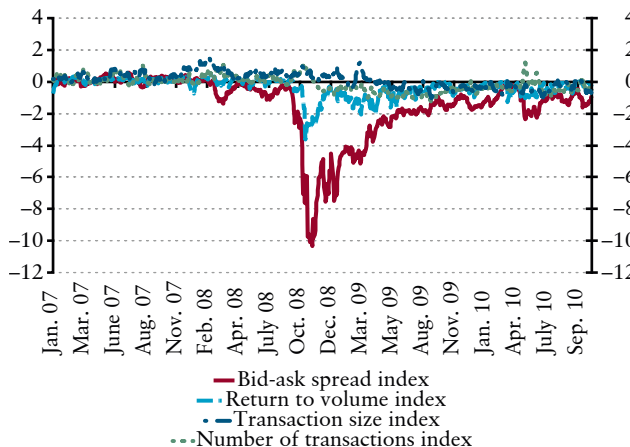


Source: MNB, Keler, Reuters, DrKW.

Chart 43

Liquidity sub-indices

(exponentially weighted moving average)

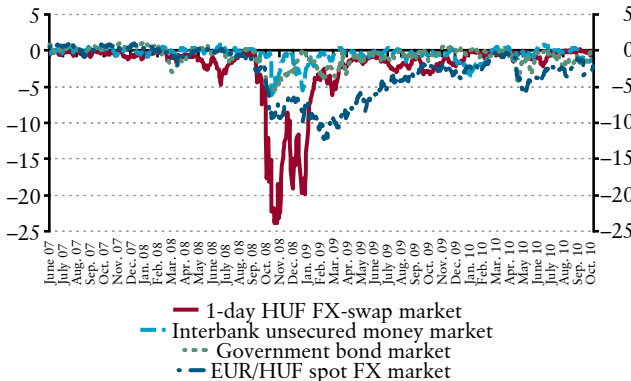


Source: MNB, Keler, Reuters, DrKW.

Chart 44

Bid-ask spread indices of the major domestic financial markets

(exponentially weighted moving average)

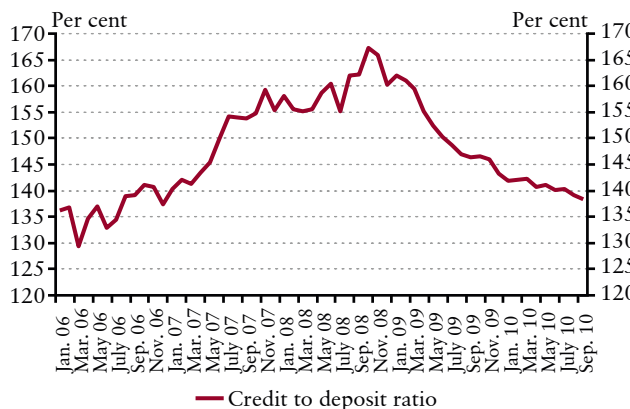


Source: MNB, Keler, Reuters, DrKW.

Chart 45

Credit to deposit ratio of the banking sector

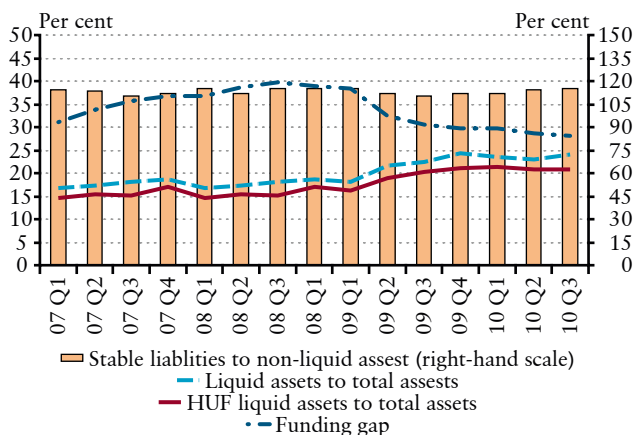
(adjusted for exchange rate changes)



Source: MNB.

Chart 46

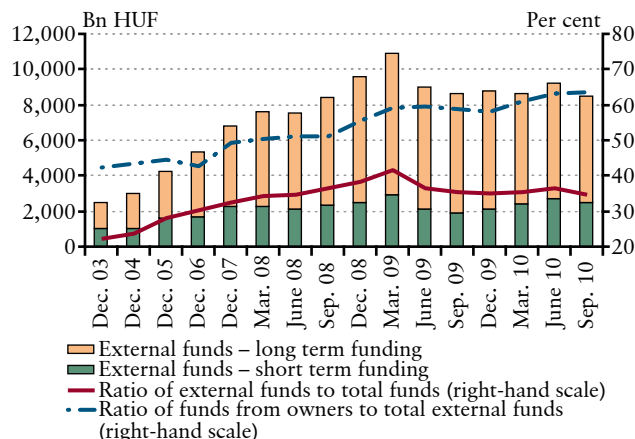
Liquidity ratios of the banking sector



Source: MNB.

Chart 47

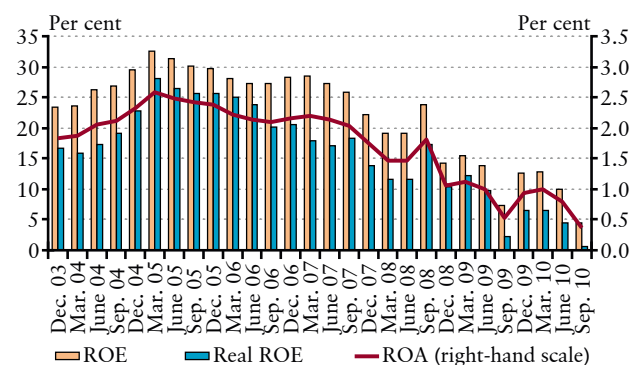
External funds of the banking sector



Source: MNB.

Chart 48

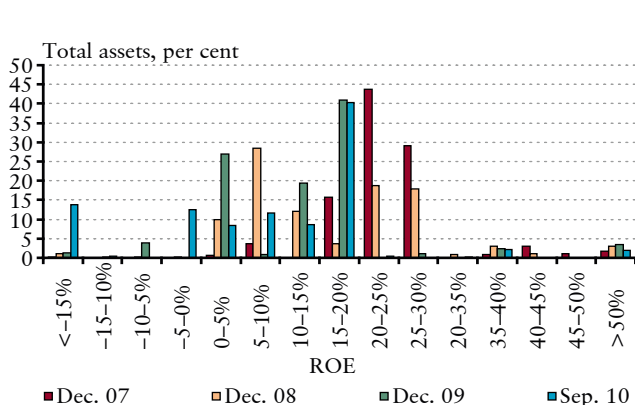
ROA, ROE and real ROE of the banking sector



Source: MNB.

Chart 49

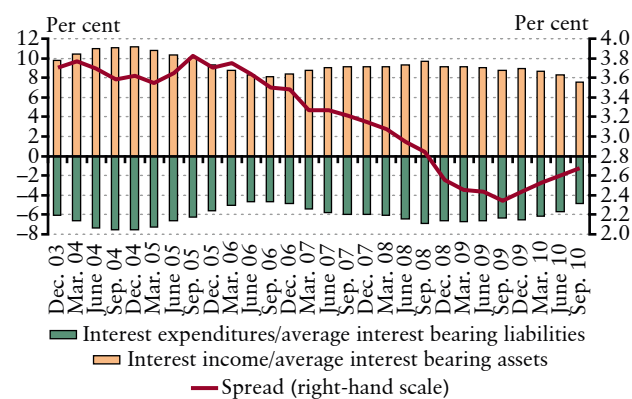
Dispersion of banks' total assets by ROE



Source: MNB.

Chart 50

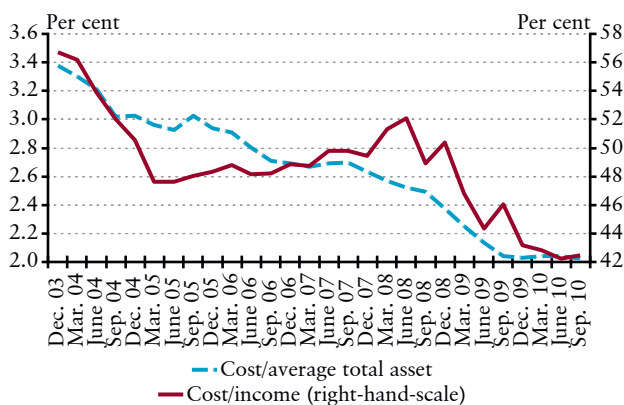
Banking sector spread and its components



Source: MNB.

Chart 51

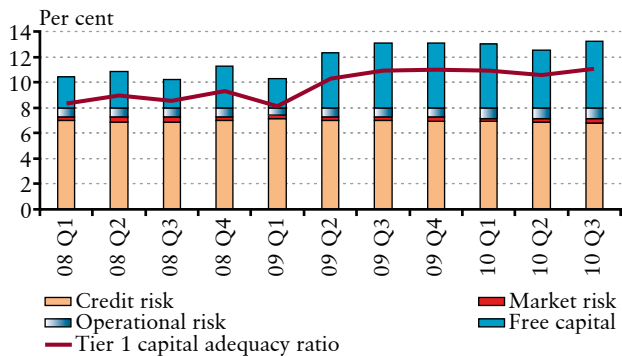
Operating efficiency indicators of the banking sector



Source: MNB.

Chart 52

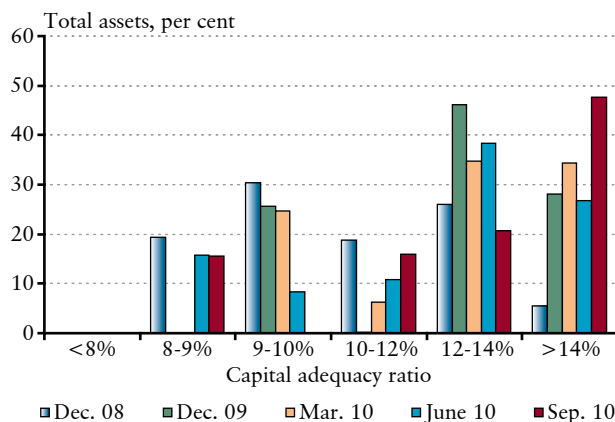
Banks' capital adequacy ratios



Source: MNB.

Chart 53

Dispersion of banking sector's total assets by capital adequacy ratio

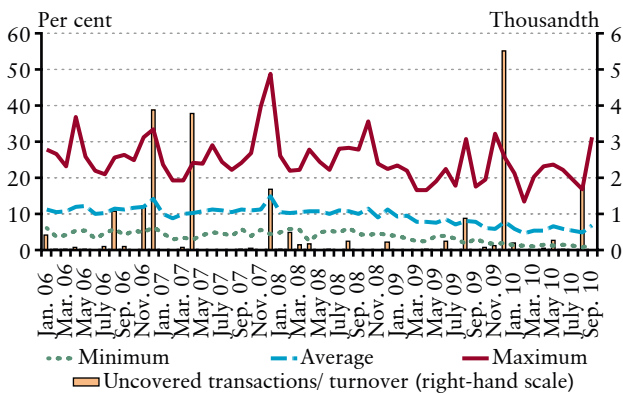


Source: MNB.

7 Risks of the payment systems

Chart 54

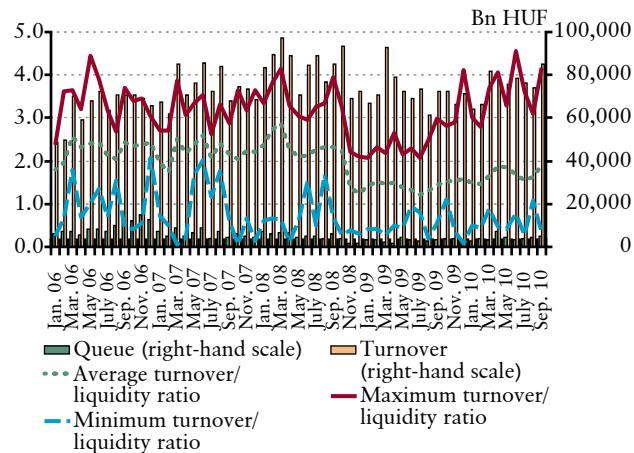
Liquidity needed for settling IBC-turnover as a percentage of available liquidity and uncovered transactions as a percentage of the turnover



Source: MNB.

Chart 55

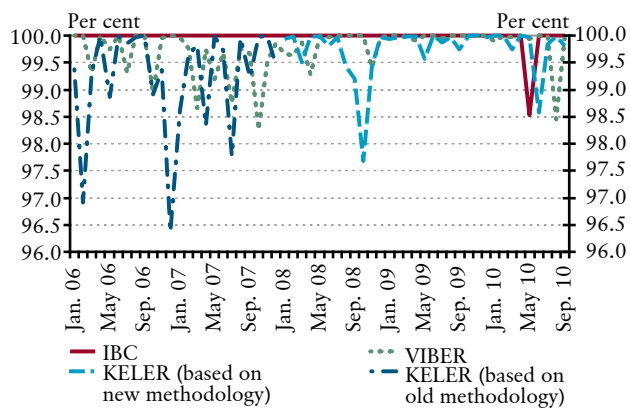
Monthly turnover/liquidity ratio (VIBER) and monthly turnover and queue statistics



Source: MNB.

Chart 56

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 (31 December) unless 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, and thus 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 19:

FHB House Price Index.

Chart 24:

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

Chart 25:

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

Chart 27:

In brackets below the names of sectors the weights within corporate credit portfolio are indicated for end-of-observation period.

Chart 38:

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 to reporting errors and non-standard transactions can lead to significant subsequent modifications of the data series. The data series does not include swap transactions between branches, specialised credit institutions, cooperative credit institutions and non-resident investors. The swap stock is the sum of termin legs calculated at actual foreign exchange rates.

Chart 41:

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 42:

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

Chart 43:

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

Chart 44:

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 45:

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 46:

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

Chart 48:

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 (per cent).

Chart 49:

Pre-tax profit.

Chart 50:

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 51:

Cost: previous 12 months

Income: previous 12 months

Average total asset: mean of previous 12 months

Chart 52:

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

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

Chart 55:

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

Chart 56:

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.

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