

REPORT ON FINANCIAL STABILITY

May 2013



MAGYAR NEMZETI BANK

REPORT ON FINANCIAL STABILITY
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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 about 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 System Analysis and the Macroprudential Policy and Lending directorates, under the general direction of Márton Nagy, Director. The *Report* was approved for publication by Dr. Ádám Balog, Deputy Governor.

The *Report* incorporates the Monetary Council's valuable comments and suggestions following its meetings on 23 April and 14 May 2012. 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 26 April 2013.

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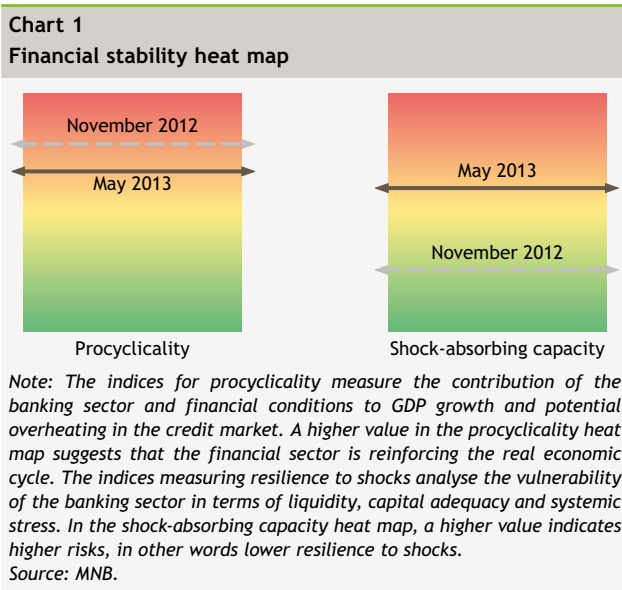
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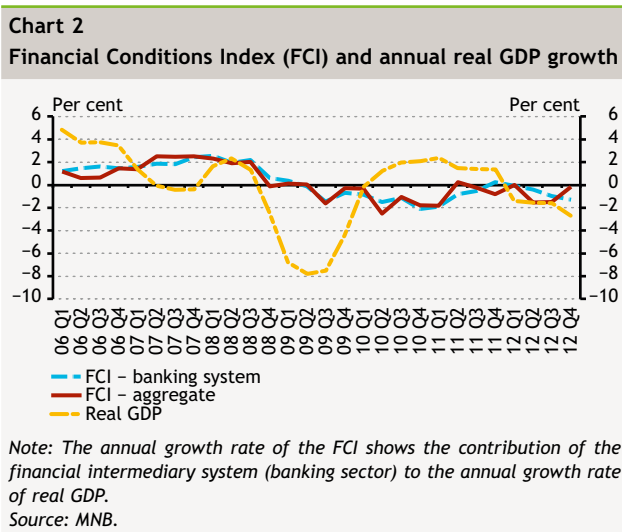
1 Overall assessment

1.1 Overall assessment of the financial intermediary system



The financial intermediary system functions properly when it supports sustainable economic growth and is resilient to shocks. The procyclicality of the financial system has declined in the past six months, mainly due to the policy rate cuts of the MNB. The MNB's Funding for Growth Scheme (FGS) may result in further material improvement in lending, particularly in the SME segment. Due to the weaker capitalisation of banks, however, the sector's resilience to shocks has deteriorated recently, although its current level does not appear to be a threat (Chart 1).

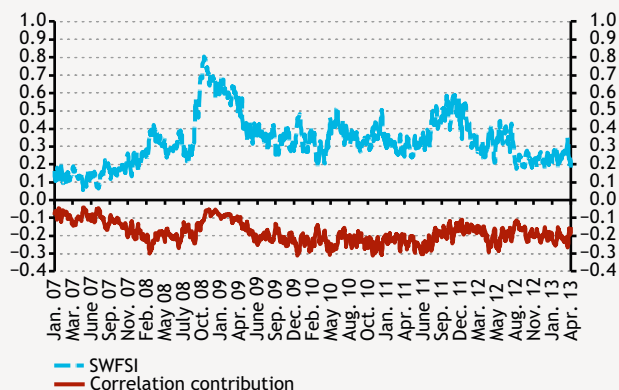
Based on the index gauging the impact of the banking sector on the real economy, the procyclicality of the financial system declined slightly, but this basically stemmed from the easing in monetary conditions. The Financial Conditions Index (FCI)¹ measures the aggregate impact of the financial sector on annual GDP growth, using indicators gauging bank credit and monetary conditions. The Index rose from -2 per cent to 0 per cent in the second half of 2012, suggesting that financial conditions were neutral in terms of economic growth at the end of the year. This was attributable entirely to more favourable monetary conditions. By contrast, the component for bank credit indicates an increasingly contractionary impact (Chart 2).



Still no signs of strain in the most important financial sub-markets. The System-Wide Financial Stress Index (SWFSI) measures the level of stress in the spot foreign exchange market, the FX swap market, the secondary government securities market, the interbank unsecured forint market, the capital market as well as the banking sector, all of which are of key importance for financial stability. The Index is still at a historically low level with regard to the past four years. The steadily low level of

¹ The model underlying the calculation of the FCI has been modified since the last Report. That methodological change has altered the historical values of the index, while leaving the major trends unaffected.

Chart 3
System-Wide Financial Stress Index (SWFSI)

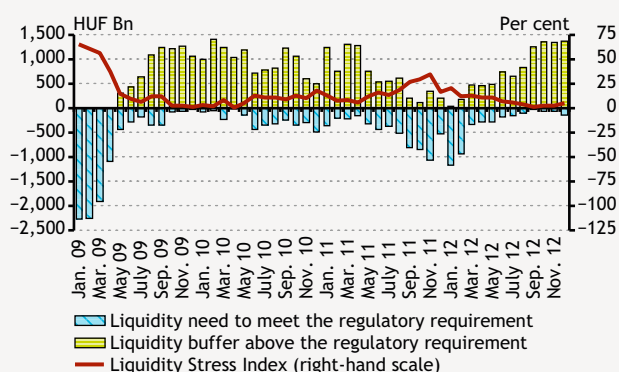


Note: As regards SWFSI, higher levels denote higher stress. The correlation indicator of the SWFSI measures co-movements among markets.
Source: MNB.

correlation contribution is particularly favourable in light of the fact that, whereas earlier exchange rate depreciation had caused tensions on other markets as well, such an impact has not been seen in recent months (Chart 3).

Banks' liquidity position is adequate and has not changed significantly over the past six months. The vast majority of banks would have sufficient liquidity buffers even in the event of the extreme shocks simulated in our stress tests. The Liquidity Stress Index (LSI), which gauges the 30-day liquidity position following the shocks, is close to zero, meaning that the liquidity of the banking sector would be close to the 10 per cent regulatory minimum level even if such shocks occurred (Chart 4).

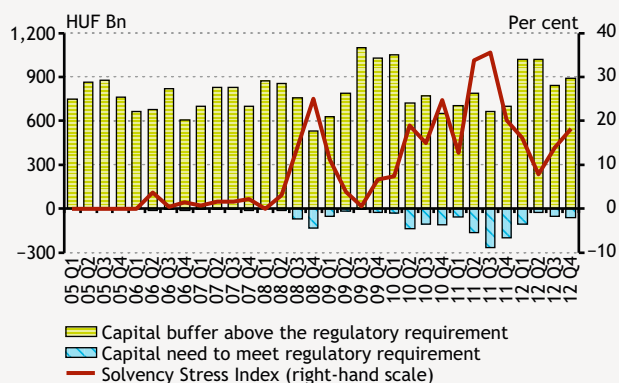
Chart 4
Liquidity Stress Index (LSI), and banks' liquidity buffer or deficit relative to the regulatory level in the stress scenario



Note: The LSI is the sum of normalised liquidity deficits relative to the 10 per cent level, weighted by the balance sheet total. The higher the value of the index, the higher the liquidity risk in the stress scenario.
Source: MNB.

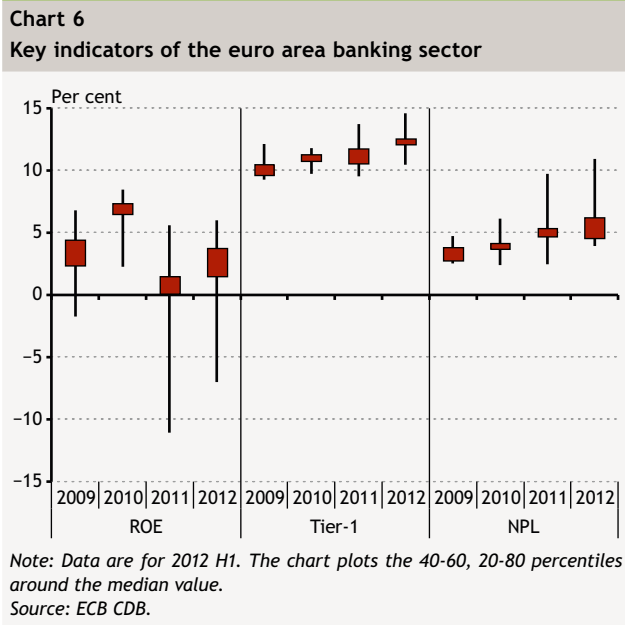
The capital position of the banking sector remains adequate, but some banks may face a mild shortage of capital in a stress situation. The Solvency Stress Index (SSI), calculated for a two-year horizon in the stress scenario, has deteriorated significantly since the last Report, mainly reflecting the worse initial capital position at some banks and the weaker earnings outlook (Chart 5). In addition to the increase in the indicator, it is also worth noting that capital buffers are highly concentrated. However, in assessing the HUF 62 billion capital injection need within the banking sector, it should also be taken into account that this requirement appears simultaneously at a number of large banks and that the owners of those banks have already proven their commitment to their Hungarian subsidiaries through capital injections to offset losses.

Chart 5
Solvency Stress Index, and banks' liquidity surplus or deficit relative to the regulatory level in the stress scenario



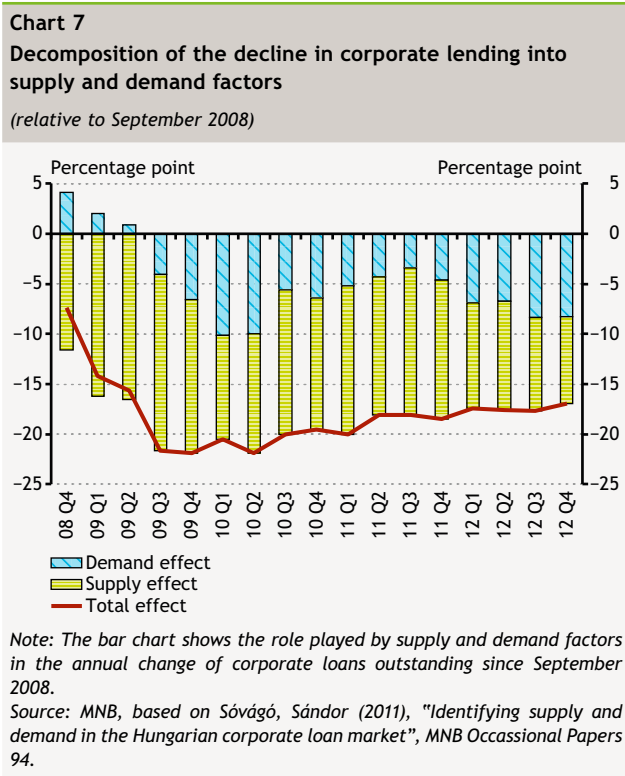
Note: The indicator is the sum of normalised capital shortages relative to the 8 per cent level, weighted by the capital requirement. The higher the value of the index, the higher the solvency risk in the stress scenario.
Source: MNB.

1.2 Key risks



Protracted euro area sovereign debt crisis

The protracted debt crisis in the euro area weighs on the domestic economic recovery through direct spill-over and the challenges faced by the parent institutions of banks active in Hungary. Quantitative easing by developed country central banks contributed greatly to the alleviation of global financial market turmoil. However, the impact on the real economy of central bank interventions has so far been modest. The euro area economy moved into recession last year and is forecast to contract this year as well. The banking sector is unable to support the recovery from recession (Chart 6), and moreover, the contraction in lending to the corporate sector in the 'southern' periphery countries accelerated. Meanwhile, bringing sovereign debt onto a sustainable path in the 'southern' periphery of the euro area and regaining competitiveness pose significant challenges.



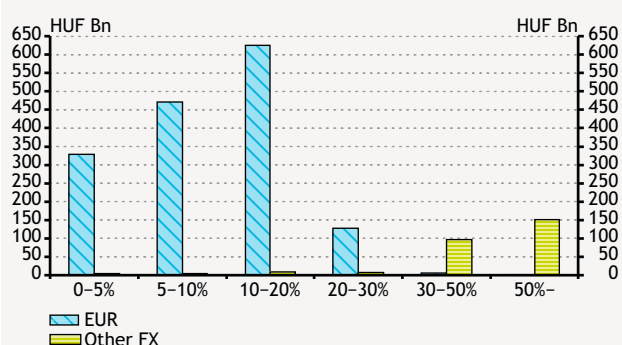
Vulnerability of the domestic economy

Due to the high level of external debt and its unfavourable composition in terms of maturity as well as the impaired intermediation function of the domestic banking sector, the Hungarian economy is highly susceptible to real economic and financial market shocks from abroad.

a) Credit supply problems in corporate lending

Credit supply remains a key driver of the contraction in corporate lending and this is affecting companies of different sizes asymmetrically. Both demand and supply factors have contributed to the contraction in corporate lending (Chart 7). The steady drop in long-term loans outstanding has been driven mainly by demand factors. In addition to this, however, domestic banks are maintaining their tight credit conditions. The banking sector is characterised by strong competition for the most creditworthy borrowers. It can be presumed that only a narrow range of companies have access to credit, of which SMEs with funding needs may be crowded out.

Chart 8
Exchange rate changes of loans to SMEs by the banking sector and branches

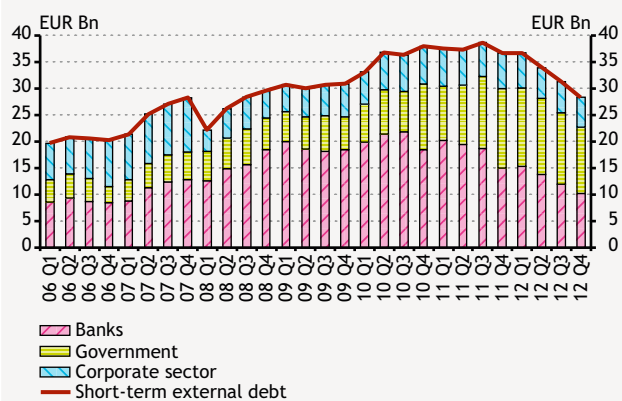


Note: Exchange rate change denotes the depreciation in the period between the time of borrowing and 31 December 2012.
Source: Central Credit Information System.

b) Exchange rate exposure of companies without natural hedging

Resolving the foreign currency debt problems of SMEs requires external intervention as well. While a number of government programmes have been implemented to manage the exchange rate exposure of households, there are significant risks stemming from outstanding foreign currency-denominated SME loans as well. Similarly to households, a large share of SME customers borrowed in foreign currency (53 per cent of total SME loans), with Swiss franc exposure also significant, accounting for around 15 per cent of the total outstanding foreign currency-denominated SME loans. Most of their revenues, however, are in the domestic currency, and therefore they have a large open foreign currency position. Depreciation of the forint and the appreciation of the Swiss franc has led to a significant deterioration in the position of SMEs with foreign currency debt in recent years (Chart 8), which may lead to a surge in bankruptcies.

Chart 9
Sectoral breakdown of Hungary's external short-term debt

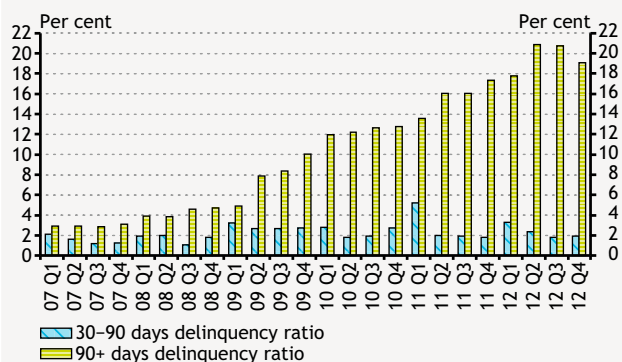


Source: MNB.

c) Reliance on external funding of which a high share is short-term financing

Hungary's gross external debt is one of the sources of vulnerability, due to roll-over risks. The mounting debt prior to the crisis increased the country's external financing needs. Short-term financing, i.e. external borrowing for up to a year, accounts for a significant share of total debt (Chart 9). Due to rollover risks, the MNB was compelled to raise the level of its foreign exchange reserves, which led to a simultaneous increase in sterilised liquidity. This translates into substantial costs, and therefore rationalisation of the maturity structure of external debt is justified.

Chart 10
Ratio of banks' non-performing corporate sector loans

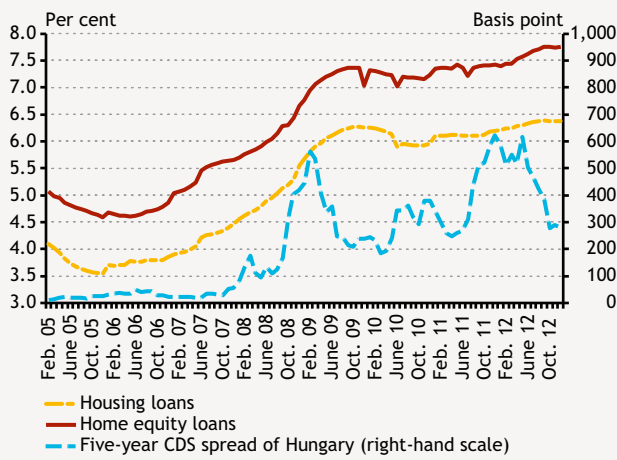


Source: MNB.

High share of non-performing loans

The share of the domestic banking sector's non-performing loans (NPLs) remains high, reducing its willingness to lend. The ratio of NPLs to total household loans remained broadly unchanged in the second half of the year, whereas the ratio of NPLs to total corporate loans fell significantly (Chart 10). In respect of corporate loans, this was mainly attributable to more intense portfolio cleaning; however a slight improvement would have been seen even in the absence of this. The recent improvement in the corporate portfolio quality should not be interpreted as a trend reversal, and slow growth in the ratio of NPLs is expected in the next two years. Conversions of non-performing household foreign currency loans into forint loans and the increasing participation in the exchange rate cap scheme slowed down the rise in the household NPL ratio. In the next two years, the government support

Chart 11
Interest rates on outstanding Swiss franc-denominated household loans and Hungary's 5-year CDS spread



Sources: MNB, Bloomberg.

schemes for debtors may halt the deterioration in portfolio quality, which may also be improved by the planned introduction of personal bankruptcy.

Lack of competition in mortgage lending

Despite the decline in external funding costs, the interest burden on outstanding performing loans has been rising, as banks seek to partly offset the deterioration in their profitability. The ratio of domestic banks' interest income to their balance sheet total is the highest in the region. There are a number of signs pointing to a lack of adequate competition, and banks are passing their loan losses and the bank levy on to households (Chart 11). As a result, the banking sector exerts a strongly procyclical effect not only in the case of new household mortgage lending, but also, in the case of outstanding loans, thereby restraining economic growth.

1.3 Managing key risks

Key risks:

1 Protracted euro area sovereign debt crisis

2 Vulnerabilities of the domestic economy

2.1 Credit supply constraints on companies, particularly on SMEs

2.2 Exchange rate exposure of companies without natural hedging

2.3 Reliance on external funding, of which a high share is short-term financing

3 Deterioration in portfolio quality

3.1 High share of non-performing loans in the domestic banking sector

3.2 Risk of surge in new defaults

4 Lack of competition among banks in mortgage lending

Risk mitigation measures:

1 *Maintaining prudent fiscal policy and supporting sustainable economic growth in Hungary remain a priority to mitigate the impact of potential adverse shocks from the euro area.*

2.1 *The first pillar of the Funding for Growth Scheme (FGS) may improve access to credit with favourable interest conditions for SMEs.*

2.2 *The second pillar of the Funding for Growth Scheme is aimed at converting foreign currency loans of SMEs into forint loans.*

2.3 *The third pillar of the Funding for Growth Scheme will reduce the country's external debt and extend its maturity.*

3.1 *The planned introduction of the personal bankruptcy process could help the management of non-performing loans, while at the same time allowing over-indebted customers to start with a 'clean sheet'.*

3.2.1 *Increasing participation in the exchange rate cap scheme could slow the deterioration in household portfolio quality.*

3.2.2 *The first and second pillars of the FGS may contribute to an improvement in SME loan portfolio quality.*

4.1 *Expedient to cut the regulatory maximum of the early repayment fee to 1-1.5 per cent in the case of refinancing from another bank.*

4.2 *In agreement with the proposal of the Hungarian Competition Authority, the possibility of bank switching in the case of government subsidies should be examined.*

4.3 *It may be justified to reduce the maximum amount of notary fees, which are charged not by competing and not even by public bodies, as such fees represent a significant disincentive in the case of refinancing.*

4.4 *Most mortgage loans are tied to other products (predominantly current accounts); therefore, the switching of current accounts should be facilitated.*

4.5 *The entry of participants should be promoted which would help households to seek the most favourable offers.*

Box 1**The Funding for Growth Scheme (FGS) of the Magyar Nemzeti Bank**

At its ad hoc meeting on 4 April, the Monetary Council of the MNB adopted a three-pillar scheme that focuses on boosting economic growth, downsizing foreign currency denominated debt and reducing the country's reliance on external funds as well as extending the residual maturity of such. The scheme's measures support economic growth by stimulating lending. These measures were made necessary by the steady contraction in outstanding corporate loans since end-2008 and the underlying tight credit supply conditions. Foreign currency-denominated debt would be slashed by loan refinancing, which may reduce the exchange rate sensitivity of companies with open exchange rate positions. External liabilities – in particular short-term ones – add to the vulnerability of the country. Therefore, their reduction or the extension of maturities contributes to macroeconomic stability. Up to the amount earmarked in the scheme, the Bank would ensure the achievement of the latter two objectives from its foreign exchange reserves, while continuously complying with the reserve adequacy rules.

The first pillar of the Funding for Growth Scheme provides a total HUF 250 billion of interest-free refinancing loans to banks for lending to SMEs with a fixed – maximum 2.5 percentage point – premium. The SMEs may use the loans with preferential interest rate to finance investment, working capital, and also to finance their own contribution or pre-financing of EU-subsidies, or to refinance such loans. The maximum maturity of the loans will be 10 years, and there will be 3 months available for the disbursement of the loans, starting on 1 June 2013.

The objective of the preferential loan is to extend loans to SMEs that may contribute to potential output, but at present do not have access to sufficient funds due to the tight credit supply conditions. The interest rate conditions, which are much more favourable than the current market interest rates, improve the profitability and liquidity of companies through lower interest costs, and also have a favourable impact on the banking sector's portfolio quality through the lower credit risks.

The steady, significant contraction in private sector loans outstanding is not a phenomenon unique to Hungary. Unfavourable developments in lending forced several central banks to be more active in stimulating the lending of financial institutions. In terms of international examples, the most relevant is the Funding for Lending Scheme (FLS) of the Bank of England (BoE), which also had an effect on formulating the MNB's programme about boosting lending (the first pillar of the FGS). The means and objectives of the two schemes are basically the same: compared to market funds, central banks provide preferential funding in order to stimulate lending. However, there are meaningful differences in the details of the schemes, both in the ways and conditions of providing the funds and the use of the preferential loans.

	Funding for Lending	First Pillar of the FGS
Form of lending	Collateral swap. The Bank of England lends Treasury Bills to banks against collateral and for a fee.	Refinancing loan. The MNB provides loans at a 0 per cent interest rate to banks for refinancing specific credit objectives.
Targeted and targetedness	The objective of the Scheme is that banks do not reduce their stock of loans to the private sector (households and non-financial corporations). The extension of the Scheme announced in April 2013 focuses on the SME segment, and certain financial companies were also included in the scope of the Scheme.	The Scheme expressly targets the SME segment, and specific sectoral preferences in particular. The objective is to stop the decline in the stock of corporate loans, which also erodes potential output.
Available amount	In 2013: 5 per cent of the stock of existing loans to the non-financial private sector as at end-June 2012 and an amount equalling net lending (new loans less repayment) between June 2012 and December 2013. As of 2014: an amount depending on net lending between 2013 Q2 and end-2014, with strong preference for the SME segment.	In the first phase of the programme, maximum HUF 250 billion at banking sector level. The amount available does not depend on the changes in the stock of existing loans of the given bank.
Price	0.25–1.5 per cent + repo fee (approx. 60 basis points for a term of 4 years).	The refinancing loan is free of interest.

Source: BoE, MNB.

While the MNB's scheme provides preferential funds to banks in the form of refinancing loan, the BoE undertakes this through collateral swaps. In the collateral swap, the central bank provides risk-free treasury bills to the bank, and receives less marketable, riskier assets from a specific range of collaterals in exchange. The targets of the two schemes are also different: the requirements concerning the use of the funds are stricter in the MNB's programme, which clearly targets the SME segment, whereas in the original setup the BoE has focused only on increasing the outstanding loans of the private sector. On the other hand, the extension of the Funding for Lending Scheme – announced in April 2013 and starting as of February 2014 – pays special attention to lending to the SME segment as well, just like the MNB's programme. A further amendment in the FLS is that loans to some non-bank financial intermediaries are also included in the eligibility of the programme. These intermediaries play an important role in providing access to credit for the private sector, while their funding comes mainly from banks; thus, the eligibility of these loans is justified by the goal of the scheme.

The two schemes are also different in terms of the volumes of the preferential central bank financing available. In the case of the Funding for Lending Scheme, the individual limit that can be drawn down depends on the net change in lending of the given bank: under the current rules the initially available quota may increase if the given bank increases its outstanding loans to the private sector. From 2014 – according to the new rules under the extension of the British programme – the volumes of available preferential central bank financing will only be the function of net lending, with a focus on the SME segment. While net lending to other sectors will count pound for pound in determining the available allowance, for a 1 pound growth in SME loans, banks can apply for as much as 10 pounds of preferential finance. By contrast, the first pillar of the FGS has a limit of HUF 250 billion. Significant differences exist in the pricing of preferential central bank financing as well. Actually, the scheme of the BoE means funding for banks above the central bank base rate,² while the MNB provides its refinancing loan with a 0 interest rate, i.e. well below the policy rate. One further difference is that while the pricing of the first pillar of the FGS is fixed, the BoE may subsequently charge a higher fee to the credit institution (up to the maximum value of 1.5 per cent), if outstanding loans decline. In addition, the MNB's scheme determines the maximum interest margin that can be charged, whereas the Funding for Lending Scheme does not contain any condition of this kind.

The second pillar of the Funding for Growth Scheme assists SMEs that have an open exchange rate position by converting their foreign currency denominated loans into forints. The main conditions of the programme are identical with those of the first pillar (available amount, interest rate conditions and target). Banks converting foreign currency loans of their own customer receive the foreign exchange required for the conversion into forints at market exchange rate from the central bank reserves on the condition that they will spend it on repaying their short-term foreign liabilities. Firstly, this protects the exchange rate of the forint from excessive volatility. Secondly, due to the simultaneous decline in short-term external debt and the foreign exchange reserves, the FX reserve adequacy of Hungary will not change.

The objective of the third pillar of the scheme is to reduce the short-term external debt of the country and the MNB bill holdings of banks. This is planned to be achieved by concluding FX swap transactions to the debit of the reserve or by changing the currency composition of government debt. While complying with the reserve adequacy rules, this step would lower the gross external debt of the economy.

The three pillars of the Bank's newly announced scheme contribute to the achievement of the objectives to various extents and in different ways. The following is a detailed presentation of the effects of the individual channels.

	I. pillar	II. pillar	III. pillar
Growth	✓	✓	
Reduction of FX-debt		✓	✓
Reduction of external debt		✓	✓
Lengthening of external debt		✓	✓

Source: MNB.

² Although the minimum 0.25 per cent fee charged for the Treasury bill is below the current discount rate (0.5 per cent), during conversion of the received security into central bank money the bank must pay the cost of repo financing as well, which adds to the total funding costs.

Supporting growth

The zero per cent central bank refinancing and the cap on the banks' interest premium represents a significant income transfer for businesses. This has a positive impact on the profit, liquidity situation and leverage of companies, thus ensuring more predictable operation for them, boosting the currently subdued willingness to invest, and possibly also contributing to growth in employment. In the first pillar, the size of the income transfer on the basis of the prevailing interest rate conditions is some 6–6.5 percentage points, originating partly from the MNB (refinancing with 0 per cent interest rate instead of the current 4.75 per cent base rate) and from banks (2.5 percentage points instead of the prevailing high market interest rate premiums of around 4 percentage points to SMEs). The second pillar of the FGS also contains income transfer, although its size is smaller (estimated to be some 0.5–1 percentage point) due to the low nominal interest rate of the foreign currency loans to be refinanced. Assuming that the first two pillars of the scheme are used up in full, the total income transfer will amount to HUF 20 billion.

The growth-supporting impact is reflected in lending as well. With the help of the first pillar of the Funding for Growth Scheme, loans can also be accessed by companies that have viable business models, but at present cannot obtain external funds due to tight credit conditions. The refinancing available in the first pillar will result in an increase in lending, which may have a positive impact on both potential and actual output in the SME segment, a sector which is particularly reliant on financing from domestic banks. Moreover, lower funding costs will improve creditworthiness, which may induce new lending in addition to the amount drawn from the MNB programme. According to our baseline forecast, compared to our earlier projection, the scheme will result in an increase of 0.7 and 1.7 per cent in corporate loans in 2013 and 2014, respectively. Based on our model calculations, which capture the multiplier effects as well, by end-2014 this would result in a 0.2–0.3 per cent higher GDP. In the optimistic scenario, where the total amount of loans extended in the first pillar add to total loans outstanding (they do not serve for loan refinancing), the lending effect in 2013 and 2014 may be 2 and 4.9 per cent, respectively, whereas the related GDP effect until end-2014 may reach a total 0.5–1 per cent.

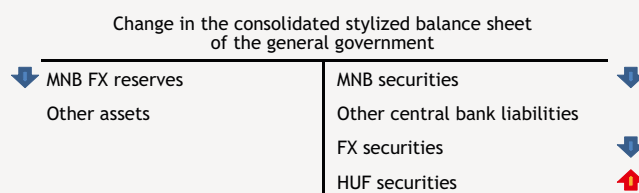
Foreign exchange debt and the reduction of external liabilities

Empirical experience indicates that a high ratio of external – mainly debt-type – short-term liabilities poses a stability risk. A sudden stop in external financing may force both the banking sector and – through that – real economy to deleverage strongly, which typically entails a sharp contraction of the economy. The objectives of the second and third pillars of the Funding for Growth Scheme is basically to reduce this risk.

In the second pillar, as a result of the conversion of the foreign currency loans of small and medium-sized enterprises into forint-denominated debt, SMEs' foreign exchange rate exposure will decline by HUF 250 billion, i.e. by nearly 14 per cent. This may lead to more predictable and less volatile funding costs. As the repayment of short-term external liabilities is made possible by the MNB's refinancing, it will not result in a decline in loans outstanding, and thus this type of decrease in foreign exposure cannot be considered problematic.

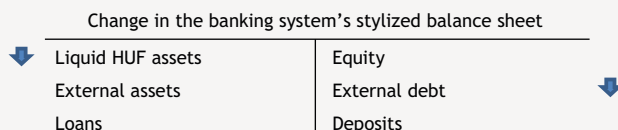
One of the objectives of the third pillar is to lower external debt, which is intended to be achieved by a reduction of some HUF 900 billion compared to the current level of the two-week MNB bills outstanding. As in the first pillar, additional liquidity amounting to HUF 250 billion will also be provided to banks, and thus the total liquidity to be withdrawn will be HUF 1,150 billion. There are two possible solutions for the withdrawal of liquidity: firstly, the swapping of government debt denominated in foreign currency into forint debt; secondly, in swap transactions with banks, where the foreign exchange received from the MNB must be spent on the repayment of foreign liabilities.

- Changing the currency composition of government debt



In this case, the general government repays foreign exchange liabilities to the debit of the central bank reserves, issuing forint-denominated government securities instead. The forint-denominated bonds may be purchased by domestic agents (most probably by the banking sector, due to the size of the programme) or non-residents. Either non-residents or residents buy the forint government securities, the relevant forint liquidity will be provided for this by the two-week MNB bill.

- The swap transaction with the banking sector will reduce foreign exchange debt



The MNB would use FX swap transactions to provide the FX liquidity required for the repayment of foreign currency-denominated liabilities for banks when converting FX loans of their own customer. The transactions may be longer-term swaps, or shorter-term ones that the Bank would roll over. As the Bank does not replace market swaps,³ outstanding swaps might increase by HUF 1,150 billion. We indicated earlier that the high amount of outstanding swaps may pose a stability risk. However, it is important to emphasise that MNB swaps differ from market swaps in terms of risks. Firstly, there is no roll-over risk in the case of swaps vis-à-vis the MNB. Secondly, the margin call is in forints; therefore, banks' FX liquidity does not worsen even when exchange rate movements are unfavourable, and reliance on swap markets does not increase either. During the period of swap transactions, FX reserves decline on the Bank's asset side, while forint receivables from the Bank (e.g. two-week bill) decline on the liability side. In parallel with that, forint receivables from the Bank and short-term external debt decline on the banking sector's asset side and liability side, respectively.

Accordingly, the second and third pillars jointly might reduce short-term foreign debt, which is an important source of vulnerability, by HUF 1,150 billion (EUR 3.5–4.0 billion) as a maximum. At the same time, by a decline in the MNB bills outstanding, the third pillar has a favourable impact on the profit of the MNB and through that on the financing position of the general government as well.

Extension of the average residual maturity of external debt

The vulnerability of the country largely stems from the high proportion of liabilities with short remaining maturities, which requires a similar amount of FX reserves: according to the Guidotti–Greenspan rule monitored by market participants, the magnitude of foreign exchange reserves must cover a country's short-term debt (maturing within one year). However, high foreign exchange reserves are costly, as the interest revenues from them are lower than the interest expenditure on the foreign currency-denominated bonds issued by the state.

Thus, not only do the second and third pillars of the Funding for Growth Scheme reduce the reliance on external funds in general, they also intend to achieve the decline in external liabilities with short remaining maturities. This ensures a reduction of foreign exchange reserves without violating the Guidotti–Greenspan rule.

In the second pillar, banks must spend the central bank refinancing received for loan refinancing on the repayment of short-term external liabilities, for which they receive the foreign exchange from the MNB through spot transactions. This reduces domestic agents' short-term foreign exchange debt and external financing as well by HUF 250 billion as a maximum.

In the third pillar, whether the transaction is implemented with the state or with the banks, short-term external liabilities decline by HUF 1,150 billion: in the former case following the state's own interest, while in the latter case because the conditions are determined accordingly. In the event that the state decides to replace its foreign currency-denominated debt, the maturities of the newly issued government securities play a key role, as government securities may be purchased by non-residents as well. However, this may affect the compliance with the Guidotti–Greenspan rule.

³ Theoretically it would be possible to replace market swaps as well, but this could not completely meet the condition that the short-term external FX liabilities should be repaid, and thus the Guidotti–Greenspan rule could be broken.

2 Macroeconomic and money market environment

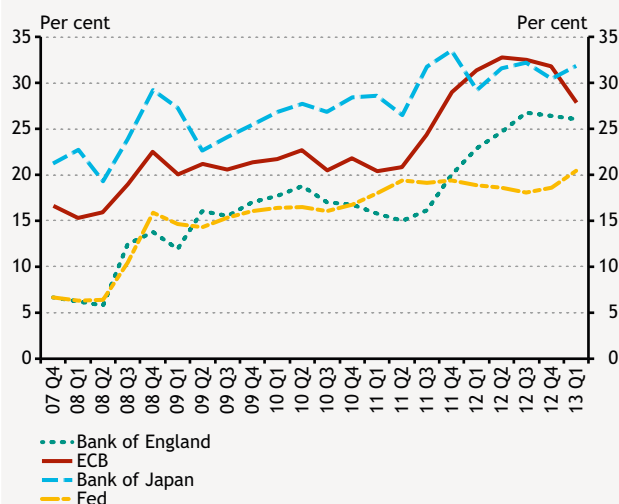
– Weak economic outlook in the euro area and Hungary, despite continued favourable investor sentiment

Since the November 2012 issue of the Report on Financial Stability, market risks have continued to decline, while risks in the real economy have increased in the euro area. The quantitative easing by developed central banks contributed considerably to the easing of money market tensions. However, if the liquidity expansion comes to an end, the favourable investor sentiment could easily change again, as economic fundamentals do not justify this optimism. The impact of central bank interventions on the real economy has remained modest. The euro area economy fell into recession last year and is expected to shrink this year as well. The banking sector of the euro area is not capable of supporting the recovery; moreover, the contraction in corporate lending has even accelerated in the 'southern' periphery countries. Meanwhile, bringing government debt onto a sustainable path and improving competitiveness pose serious challenges in these countries.

The favourable investor sentiment passed through to Hungary as well, which was reflected in the persistently low risk premiums, the successful dollar bond issuance by the Hungarian State as well as the moderate money market liquidity risks. As regards the domestic economic outlook, the Hungarian economy may already expand this year, although to a minor extent.

2.1 The persistently benign global investment environment results from the interventions of developed central banks

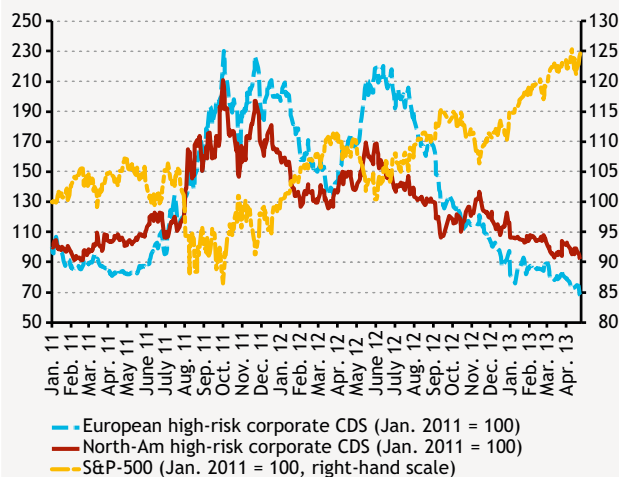
Chart 12
Central banks' balance sheet in developed countries
(as a percentage of GDP)



Sources: Balance sheets of central banks.

Quantitative easing in developed countries gained further momentum starting from 2012 H2. Starting from the autumn of 2012, the Fed launched its third quantitative easing programme, within which it purchases securities in a monthly value of USD 40 billion for an indefinite period of time (Chart 12). From April of this year, the Bank of Japan introduced a new 'qualitative and quantitative' easing programme, within which it purchases longer-term and riskier assets as well until the 2 per cent inflation target is reached. Although the ECB did not use its government securities purchase programme, its commitment to do whatever it takes to keep the euro area together was sufficient to ease the tensions. In addition to quantitative easing, the Bank of England and the Bank of Japan also introduced instruments to boost lending, recourse to which was tied to lending activity ('Funding for Lending Scheme' in the United Kingdom and 'Loan Support Program' in Japan). Moreover, developed central banks committed themselves to a close-to-zero base rate over the medium term.

Chart 13
Risk spreads and asset prices

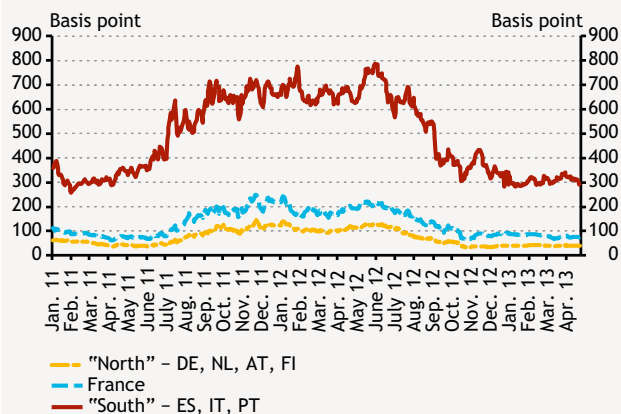


Source: Thomson-Reuters.

Central bank interventions eased money market tensions once again. Central bank measures considerably reduced tail risks, while excess liquidity, increasing to a record level, and interest rates remaining close to zero for a long term boosted risk appetite. As a result, asset prices surged, while risk spreads declined markedly (Chart 13). However, this crisis management generates other risks, as the search for yield due to the low interest rate environment may lead to imbalances in other parts of the financial system. These risks and/or the winding up of liquidity expansion programmes could easily reverse the favourable investor sentiment.

Funding conditions have normalised in the euro zone. As a result of central banks' liquidity-improving measures, the liquidity situation in financial markets improved considerably. In 2012 H2, risk spreads had sunk to the level observed at the beginning of 2011, and then remained at consistently low levels (Chart 14). The improvement in the liquidity situation is well illustrated by the fact that around

Chart 14
5-year sovereign CDS spreads

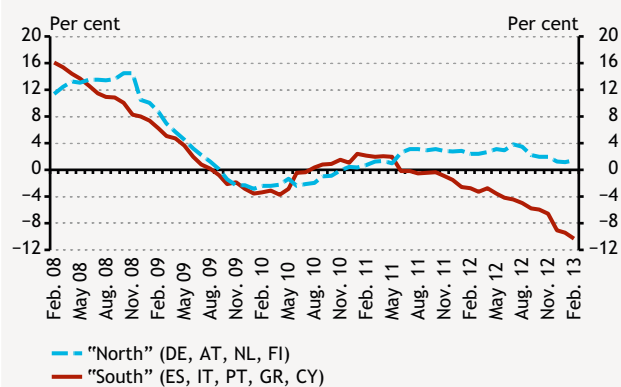


Source: Thomson-Reuters.

one fifth, i.e. EUR 212 billion, of the 3-year ECB loan (LTRO) borrowed by banks was repaid, which exceeded analysts' expectations.

The persistently benign market conditions have not spilled over into euro area corporate lending. To date, the improving conditions on banks' liabilities side have not fed through into lending. In the periphery countries, the contraction in outstanding corporate loans continued to accelerate, as total corporate loans declined by 10 per cent in February 2013 on a year-on-year basis (Chart 15). In addition, outstanding corporate loans practically stopped growing in the northern countries as well. Credit conditions were not eased at end-2012; on the contrary, banks in debt-ridden countries reported that had tightened further. Differences in lending rates across countries remain substantial, reaching as much as 4 percentage points.

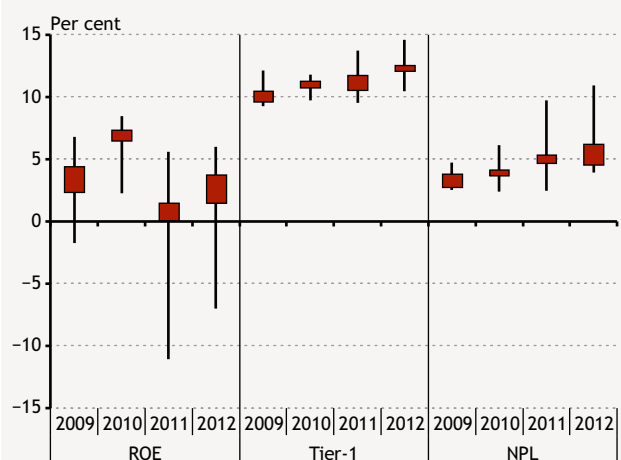
Chart 15
Changes in corporate loans outstanding
(year-on-year)



Source: ECB.

The fundamentals of the euro area banking system have deteriorated, jeopardising economic growth. In the last two years, the profitability of the banking sector declined considerably, and the banking sectors in several periphery countries booked losses. One underlying reason is that the ratio of non-performing loans (NPL) surged due to the deteriorating macroeconomic environment (Chart 16). Another reason is that, despite the recent decline, bank funding costs remain elevated. Although the capital position has improved since 2009, due to weak profitability it cannot be considered stable, particularly in the periphery countries. This is illustrated by the case of Cyprus, which was the fifth state that had to rely on an international rescue package because of its oversized banking sector and its massive losses (due mainly to the debt relief on the Greek government debt exposure). As part of the rescue package, large depositors also suffered losses. Although it did not entail an immediate contagion effect, it may reduce investors' and depositors' confidence in the euro area.

Chart 16
Key indicators of the euro area banking sector



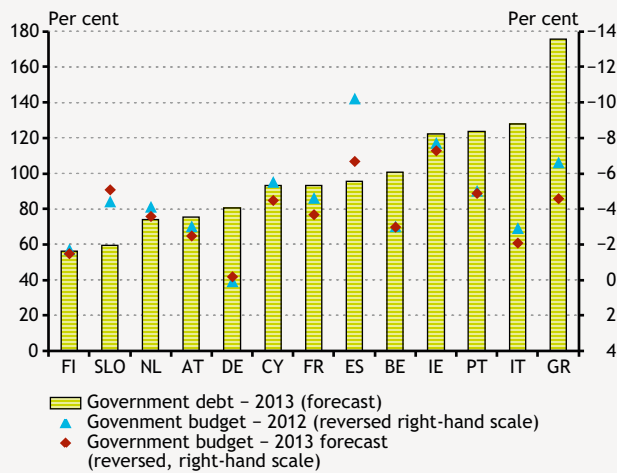
Note: 2012 H1 data. The chart depicts the 46-60, 20-80 percentile around the median value.

Source: ECB CBD.

Fiscal consolidation represents a significant threat to economic growth in the euro zone. In spite of the fiscal consolidation implemented so far, bringing government debt onto a sustainable path requires further efforts (Chart 17), while the measures taken until now also exacerbate the recession. In parallel with this, the risk of political instability is also growing, examples of which may be Greece, and most recently Italy, as well.

Recession is expected in the euro area this year, but with significant heterogeneity. The euro area slipped into recession in 2012, primarily hitting the countries with high (private and sovereign) indebtedness. Forecasts suggest that the recession may continue this year as well, but GDP may already expand by 1 per cent next year (Chart 18). In

Chart 17
Government debt and fiscal balance as a percentage of GDP

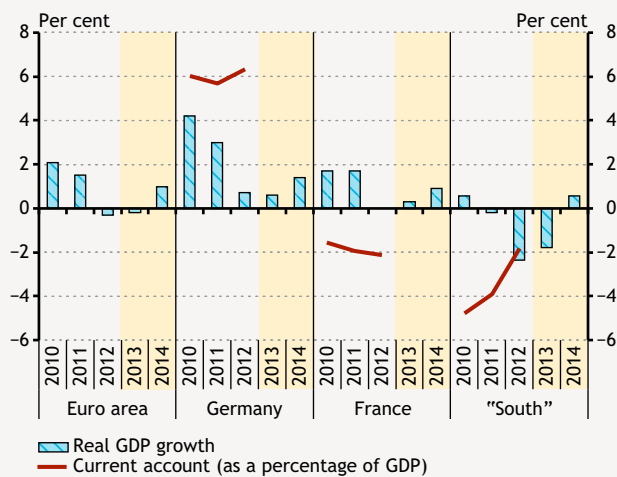


Note: Based on the January 2013 forecast of the European Commission.
Sources: Eurostat, European Commission.

the periphery countries, in addition to bringing government debt onto a sustainable path, the improvement of competitiveness and thus a permanent reduction in imbalances in the balance of payments (not only due to the recession) pose the greatest challenge. Otherwise risks will resurface.

Chart 18
GDP growth forecast of the IMF

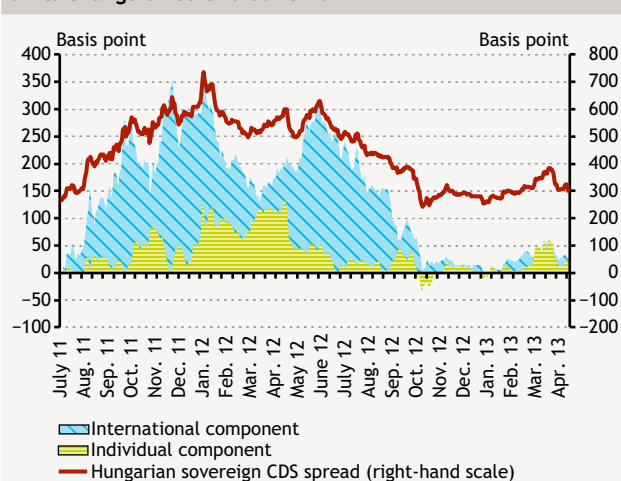
(year-on-year)



Sources: Eurostat, IMF WEO.

2.2 Economic recovery may start in 2013 in Hungary

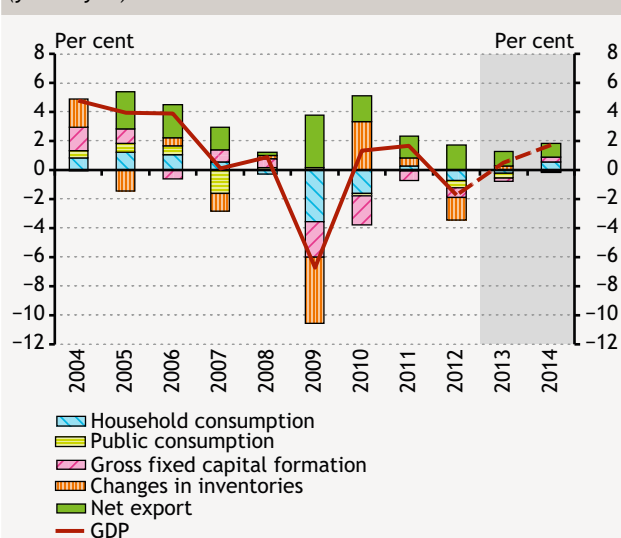
Chart 19
Hungarian sovereign 5-year CDS spread and decomposition of its change since end-June 2011



Source: MNB.

The improvement in Hungary's risk assessment in 2012 proved to be lasting. As a result of favourable global investment sentiment and the strong commitment to fiscal discipline, the risk assessment of Hungary improved considerably in 2012. In addition to the risk spreads, this was also reflected in the successful US dollar bond issuance amounting to USD 3.2 billion. In March, risk spreads increased by some 100 basis points (Chart 19), but correction took place in April. The forint weakened to above HUF 300 against the euro, which may primarily be related to investors' uncertainty concerning monetary policy. With the announcement of the Funding for Growth Scheme (FGS), market participants' concerns over central bank policy declined, which – together with favourable market developments – resulted in an appreciation of the exchange rate of the forint below the level of 300. However, external debt, which is high despite the continuing adjustment, the foreign exchange exposure of domestic sectors and the uncertainty surrounding growth outlook continue to make the country vulnerable to external shocks.

Chart 20
GDP growth
(year-on-year)



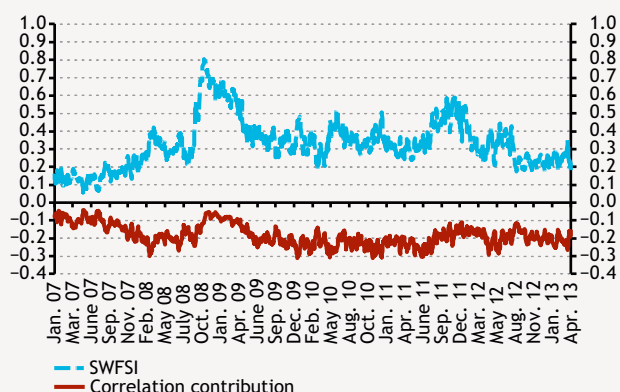
Source: Quarterly Report on Inflation, March 2013, MNB.

Hungary entered into a recession last year. The 1.7 per cent decline in Hungary's GDP in 2012 was larger than expected (Chart 20). However, the unexpected part was largely attributable to temporary effects (unfavourable weather, year-end factory shutdowns). The Hungarian economy is characterised by subdued investment and weak domestic demand, due to households' balance sheet adjustment and uncertain income prospects. Only net exports had a positive contribution to the performance of the economy in 2012.

Recovery from the recession will start in 2013 in Hungary. Growth is expected to reach 0.5 per cent in 2013⁴ and 1.7 per cent in 2014. Exports will likely continue to be the primary source of growth, and accordingly, the debt crisis in the euro area poses the main downside risk. From 2014, increasing employment and real wages are expected to result in an upswing in domestic demand. At the same time, subdued investment is a threat to growth. Over the two-year forecast horizon, consumer inflation may be

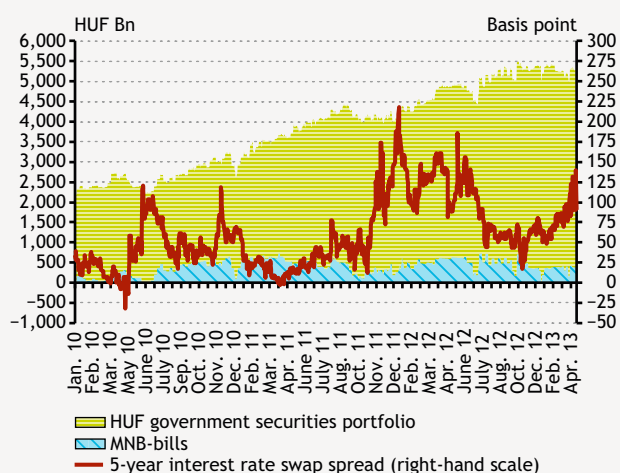
⁴ For more information on real economy and inflation outlook and forecasts see the March 2013 issue of the Quarterly Report on Inflation: http://english.mnb.hu/Root/Dokumentumtar/ENMNB/Kiadvanyok/mnben_infrep_en/mnben_inflation_20130328/infj_jelentes_201303_en.pdf.

Chart 21
System-wide Financial Stress Index (SWFSI)



Source: MNB.

Chart 22
Non-residents' forint-denominated government securities and MNB bill holdings, and the 5-year interest rate swap spread



Sources: Government Debt Management Agency (ÁKK), MNB and Bloomberg.

below the central bank target, providing more room for the Bank to boost economic growth.

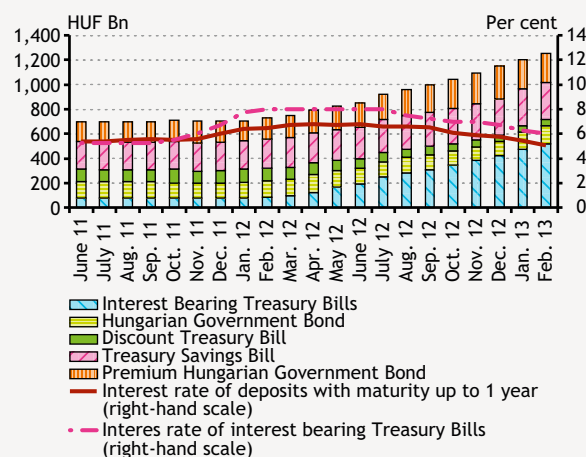
The stress level in domestic financial markets has been low for half a year. As a result of the favourable global risk appetite, liquidity tensions have eased since July 2012. The System-Wide Financial Stress Index (SWFSI) has been at a low level for half a year, although it is still somewhat higher than the pre-crisis level (Chart 21). The indices of the individual financial markets did not show any systematic and permanent co-movement in the period under review (the correlation contribution indicator remained stable or decreased in absolute value); therefore, the developments currently taking place in the financial markets still cannot be considered significant in terms of systemic risk.

Liquidity risks remain moderate in the government bond market. The stress level of the secondary market of government bonds that takes into account credit and liquidity risks continues to be moderate, which is attributable to non-residents' strong activity. In spite of a recent decline (Chart 22), non-residents' government securities holdings continue to be at near-record heights. The ownership structure of the approx. HUF 5,000 billion portfolio held by non-residents, which accounts for 45 per cent of all forint-denominated government securities, is strongly concentrated, which is unfavourable in terms of liquidity risks. In parallel with the decline in non-residents' holdings, households' share in government securities outstanding is growing (Box 2).

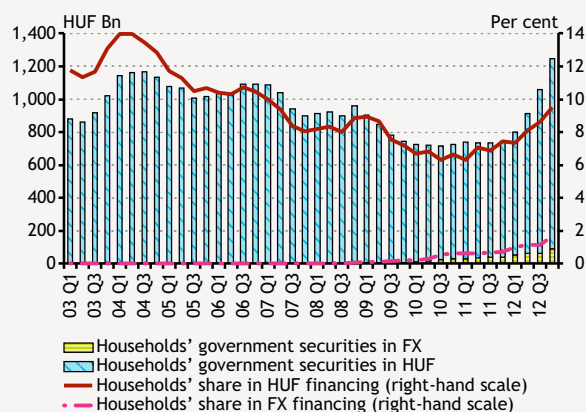
Box 2
Increasing household share in general government financing

Contrary to the declining trend observed in past years, households' share in general government debt has been increasing since early 2012. Prior to the crisis, Hungarian households had held nearly 8 per cent of total government debt, but during the crisis the role of households in general government financing declined. This change was in line with international trends, as in most countries the ratio of debt financed by households decreased. This declining trend reversed starting from the beginning of last year, as the household sector increased its government securities holdings by nearly HUF 500 billion in 2012. Forint-denominated government securities accounted for nearly 90 per cent of this increase. Euro-denominated bond purchases took place only in the first months of 2013, when households' demand for Premium Euro Hungarian Government Bonds increased. The household sector subscribed to them in an amount of more than HUF 50 billion until the end of February 2013.

The interest rate on the Premium Hungarian Government Bond, which means longer-term investment, exceeds the bank deposit offers with similar maturities, but presumably due to the maturity premium and the risks inherent in inflation-linked pricing, there has been no major increase in households' demand for this security. A large portion of purchases by households is related to the purchase of only one type of government securities, the one-year Interest Bearing Treasury Bill. Since November 2011, the interest rates offered by Interest Bearing Treasury Bills are higher than the average interest rate on households' deposits with a maturity of up to one year, although it is worth comparing the interest rates on government securities with the special deposit rates offered in campaigns. In this context, the interest rate on the Interest Bearing Treasury Bill does not always seem to be more favourable. Nevertheless, households increased their holdings of this type of bills by more than HUF 440 billion between January 2012 and February 2013. As a result, Interest Bearing Treasury Bills account for more than 40 per cent of the government securities held by households. This shift has also resulted in a decline in the maturity of government debt financing, adding to the roll-over risk and making the funding of the Hungarian State more vulnerable to a crisis.

Distribution and interest rate of households' government securities


Source: MNB.

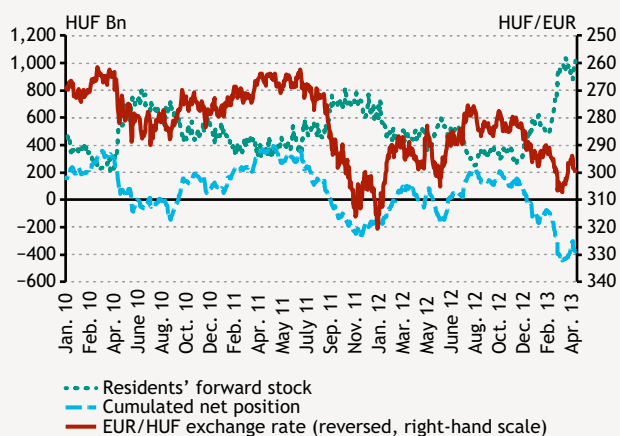
Household's government securities by currencies


Source: MNB.

Non-residents' position against the forint increased in the highly liquid forint market. Non-residents built up considerable synthetic forward positions against the forint (Chart 23) using spot and FX swap transactions, contrary to residents' forward positions of the opposite direction (in addition, they sold euros for forints in bank deposits).

Despite the favourable liquidity situation, the FX swap market is fragile. The stress level in the FX swap market deteriorated at end-2012, before improving at the beginning

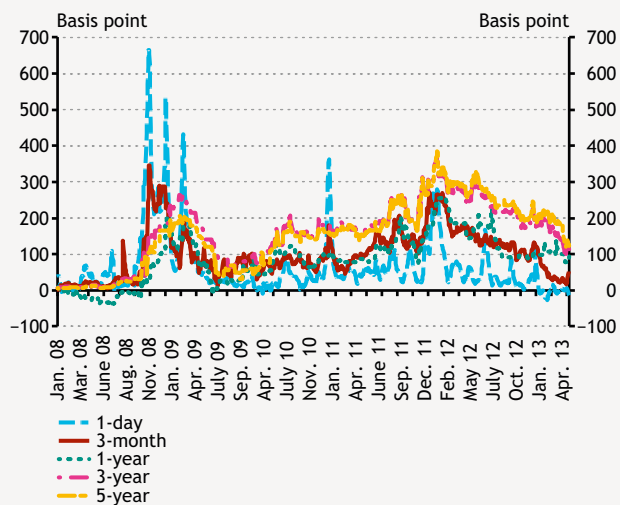
Chart 23
Net forint position calculated for non-residents and residents' forward holdings



Note: Residents' increasing forward holdings protect the forint, while a higher negative value weakens the forint in the cumulative position against the forint.
 Source: MNB.

of 2013. On the last day of the year (annual balance sheet date), foreign investors strive for window-cleaning, which results in a temporary oversupply of forints and thus in liquidity tensions. Overall, tensions were more moderate at end-2012 than at end-2010 or end-2011, and practically became concentrated on the last day of the year only. Apart from this temporary period, the decline in FX swap spreads continued (Chart 24): the decline was more explicit at short maturities, but this is partly attributable to the fact that the aforementioned positions against the forint add to demand in the swap market. At the same time, the overall effect of the weakening of the exchange rate on the swap market is negative, and thus liquidity risks increased again slightly as a result of an increase in swap exposure and a depreciation of the forint exchange rate in March 2013.

Chart 24
FX swap spreads



Sources: MNB and Bloomberg.

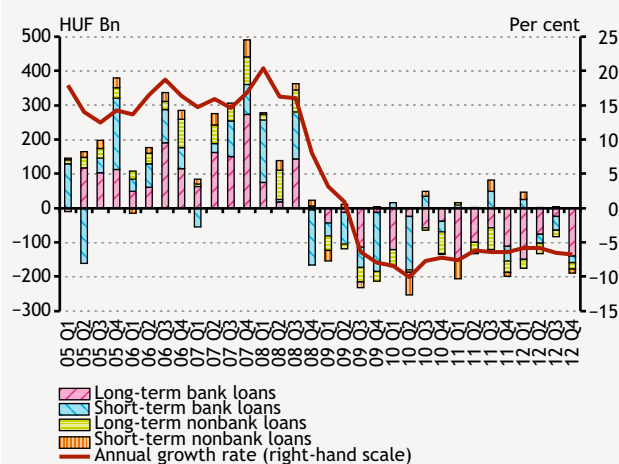
3 Domestic lending developments – The MNB’s programme to stimulate lending may ease the tight credit conditions observed in the SME sector

Private lending of domestic financial intermediaries continued to decline in 2012 H2. Both demand and supply side constraints influenced the corporate lending, and their contribution to the cumulative decline in lending has been roughly even since the onset of the crisis. Nevertheless, corporate lending continues to be characterised by duality, since the impact of supply constraints is greater in the SME segment than in the segment of large corporations. At the same time, nominal interest rates, which have been declining since 2012 H2, may somewhat offset the effects of the tight credit supply. We expect the less favourable cyclical position to restrain corporate lending, but at the same time the easing of banks’ credit conditions and the decline in nominal interest rates will have a positive impact on lending. The MNB’s Funding for Growth Scheme may provide further impetus to lending, easing both demand and supply constraints. Overall, the positive effects will perceptibly improve the expected lending path compared to the March 2013 forecast, resulting in considerably more favourable lending dynamics, especially in the SME segment.

Household lending continued to contract in 2012 H2 as well, and the new volumes are also extremely low. Subdued lending to households can primarily be attributable to demand-side effects: the balance sheet adjustment of the sector continues to be a crucial determinant, and households may have become more cautious due to the deterioration in economic prospects. However, balance sheet adjustment is considerably restrained by exchange rate movements, which simultaneously reduce households’ debt servicing capacity. It is also worth noting that even within indebted households there is significant heterogeneity in terms of the debt service burdens. In the household segment, the worsened economic outlook and subdued credit demand results in a deterioration in lending over the forecast horizon. Boosting competition among creditors would result in an upturn in demand and a decline in debt service burdens.

3.1 Contraction in corporate lending hits the SME sector in particular

Chart 25
Annual growth rate and net increase in loans to non-financial corporate sector by maturities



Source: MNB.

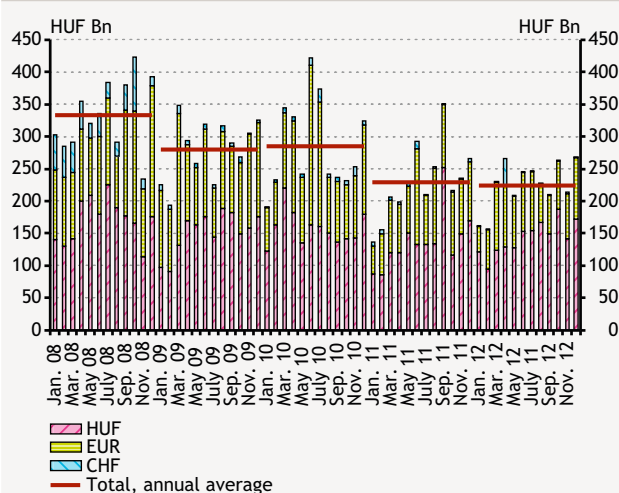
Lending in the corporate segment continued to decline.

The outstanding corporate loans of domestic financial intermediaries decreased considerably in 2012 H2, and this decline accelerated at the end of the year (Chart 25). The fall in long-term loans continues to drive developments in lending, but short-term loan stock also declined in 2012. Taking account of denomination, the contraction in foreign currency loans, which are typically related to long-term financing, was significant, but outstanding forint loans increased slightly in 2012.

New lending volumes remained nearly unchanged compared to the previous year, but were the lowest since the onset of the crisis.

While outstanding loans continued to contract sharply in 2012, new lending only dropped slightly compared to the previous year (Chart 26). Accordingly, the decline in outstanding loans is mainly attributable to the increasing volume of maturing loans, although shorter maturities of new loans may also play a role. In such a case, the same amount of outstanding loans needs to be renewed more often, which adds to new volumes.

Chart 26
Monthly volumes and annual average of new loans to corporations



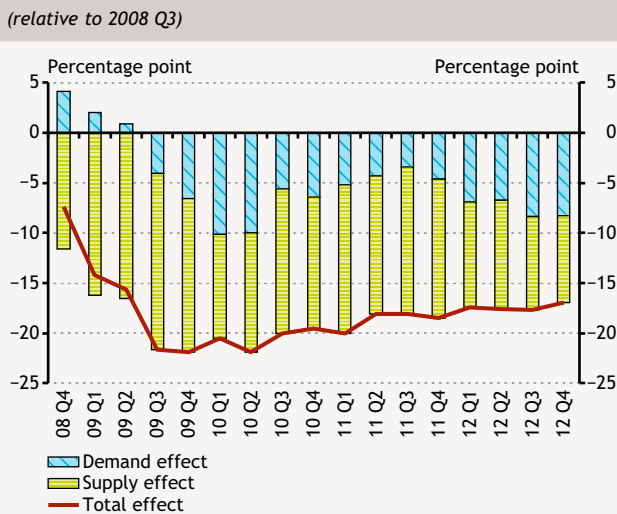
Source: MNB.

Both demand and supply factors play a role in the decline in corporate lending.

Compared to end-2008, demand and supply factors are both reflected in the falling dynamics of corporate lending. By end-2012, the contribution of these two factors to the decline in lending activity was roughly equal (Chart 27). The continuous and substantial fall in long-term corporate sector loans may primarily be explained by demand factors. Since the onset of the crisis, domestic non-financial corporations have had considerable amounts of excess capacities, and thus the unfavourable economic prospects are prompting the sector to postpone investments. Some projects, mainly in the field of automotive industry investment, are exceptions in this regard. On the other hand, the tight credit conditions typical of the domestic banking sector remain unchanged.⁵ The vast majority of banks has not eased and is not even planning to ease their credit supply constraints. The banking sector is basically

⁵ For more details, see the MNB's Lending Survey of February 2013.

Chart 27
Decomposition of the decline in corporate lending into supply and demand effects
(relative to 2008 Q3)



Note: The line and column diagrams indicate cumulative values.
 Source: MNB, based on S3v3g3 (2011).

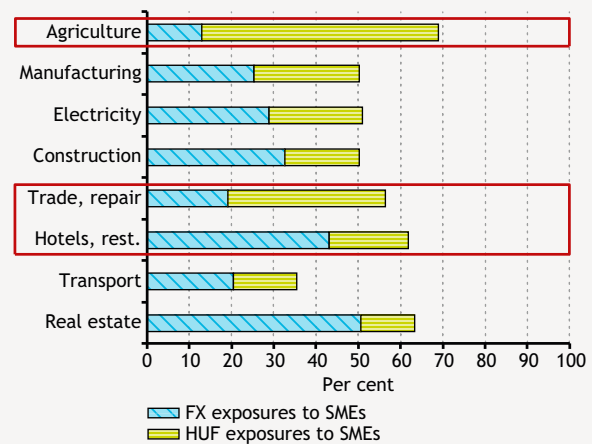
characterised by a competition for the most creditworthy customers. Therefore, presumably, only a limited range of companies has access to significant financing from banks, while the SME segment, which faces a shortage of financing, may become crowded out of this channel (Box 3).

Box 3

Characteristics of SME loans – sectoral and foreign exchange exposures

The weighting of loans to SMEs in the domestic banking sector’s corporate exposure is nearly 55 per cent. The share of SMEs in total outstanding loans is significant in a sectoral breakdown as well, amounting to at least 50 per cent in almost all major sectors. It is the highest in agriculture (nearly 70 per cent) and the lowest in the transport and warehousing sector (approx. 35 per cent). SME loans play the most important role mainly in sectors that produce for the domestic market (agriculture, trade, accommodation services and catering), while their share is lower in the sectors that are more related to external demand (manufacturing, transport). In some sectors, SMEs have considerable FX loan stock as well. In the accommodation and catering sector, for example, the share of SME foreign exchange loans is 43 per cent in banks’ exposures for the whole sector, thus accounting for some 70 per cent of all SME loans. In the loans of the SME sector as a whole, the weighting of outstanding foreign exchange loans is significant: forint-denominated loans account for a mere 42 per cent, euro-denominated ones for nearly 50 per cent, while the share of Swiss franc loans is 8 per cent.

Share of SME exposures by industries



Source: CCIS.

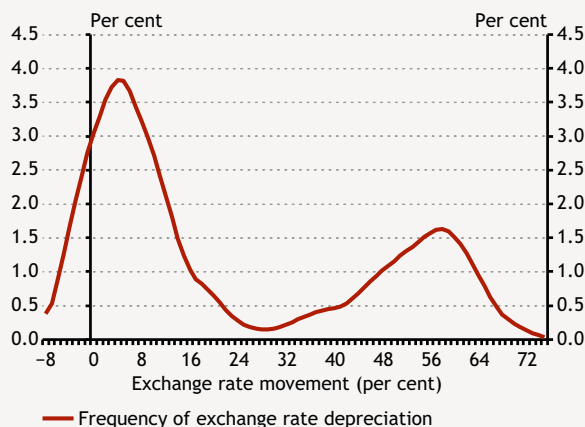
The risk of SMEs’ foreign exchange loans may be increased by the fact that there may be a high number of companies without natural hedge against exchange rate risk. In addition, depending on the dates of borrowing, there may be considerable differences between companies (and their contracts) in terms of the size of the exchange rate depreciation they have suffered. Based on the data of the Central Credit Information System (CCIS), the frequency of contracts where 30-60 per cent exchange rate depreciation took place after signing the contract is very high among loan contracts concluded at various dates and outstanding on 31 December 2012. Accordingly, depreciation exceeds 30 per cent in the case of more than one third of the contracts.

At the same time, SMEs' outstanding foreign exchange loans are mainly long-term ones (similarly to the loans of the corporate sector as a whole). While forint loans within corporate loans are typically short-term ones, loans with long residual maturities account for a high proportion of foreign exchange loans, which are primarily related to investment financing. At end-2012, the residual maturity of nearly 50 per cent of the outstanding SME loans was more than 3 years. Moreover, due to their typical use, the average outstanding amount of foreign exchange loans also exceeds that of forint loans. While the average amount of the latter is HUF 28 million, the average amount of foreign exchange loans is HUF 125 million, whereas the average amount of foreign exchange loans with a maturity of over 5 years reaches even more than twice as much as that, a total HUF 273 million. The amount of outstanding principal on the individual loans also varies significantly, ranging from the minimum of HUF 10,000 to HUF 30 billion at end-2012. The extent of the dispersion of companies' aggregate debt was similar.

Therefore, there is significant heterogeneity across SMEs' foreign exchange loans in terms of residual maturity, the depreciation suffered compared to the exchange rate prevailing upon borrowing as well as the outstanding principal. Accordingly, companies that do not have natural hedge and suffered considerable depreciation may be forced to carry out balance sheet adjustments for several years, due to their high amount of foreign exchange loans.

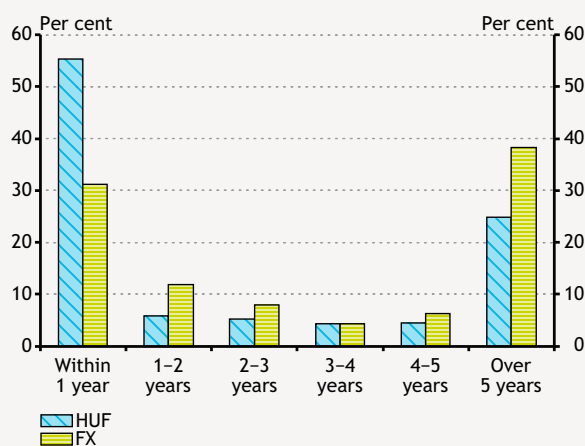
Distribution of exchange rate depreciation of individual contracts

(by end-2012)



Source: CCIS.

Maturity structure of loans to SMEs



Source: CCIS.

Contraction in credit supply mainly affects small and medium-sized enterprises. Following the outbreak of the crisis, a decline was observed in bank lending to both SMEs and large companies (Table 1). However, according to our estimates, there may have been various reasons for the drop in lending across segments. In a breakdown by company size, supply-side contraction in lending may mostly affect small and medium-sized enterprises, whereas weak lending to large companies is mainly attributable to lack of demand.

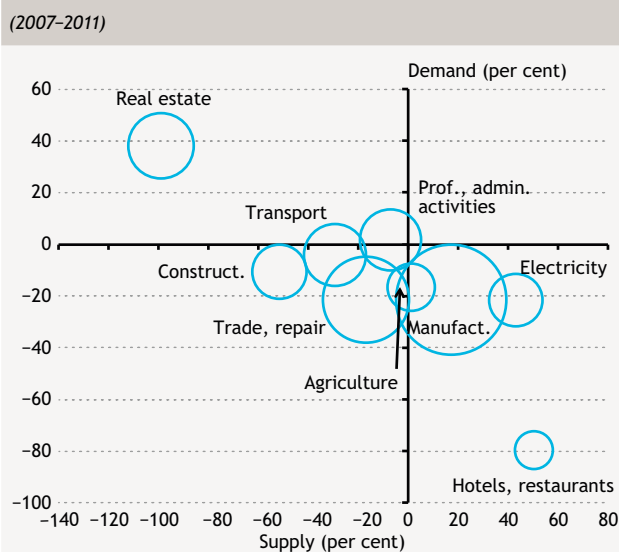
Taking account of productivity, the efficiency of fund allocation may decline in several sectors due to tight credit supply. The basic function of financial intermediation

Table 1
Change in new lending to corporations and its decomposition by corporate size

	Volume of new lendings (HUF Bn)		Change from 2007 to 2011 (per cent)		
	2007	2011	Total	Demand effect	Supply effect
Micro	1,730	828	-52.2	-61.7	9.5
Small	1,120	999	-10.8	28.5	-39.3
Medium	1,160	785	-32.4	-4.7	-27.7
Large	1,460	1,250	-14.4	-49.3	34.9
Total corporate sector	5,740	3,862	-29.5	-14.3	-15.2

Source: CCIS, MNB.

28. ábra
Decomposition of the change in new loan volumes into supply and demand effects by industries (2007-2011)

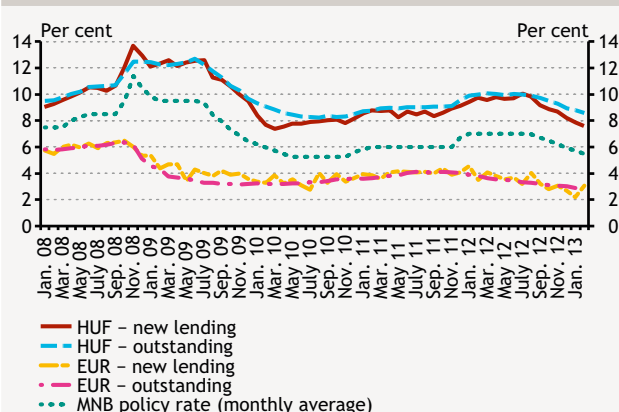


Note: Positive values indicate increase in supply/demand, while negative ones reflect to decline. The size of the circles is proportional to the loans outstanding of each industry in 2011.

Source: MNB.

is to provide funds for agents (sectors) that are able to conduct productive investments and viable production. In a situation when an economic agent's (sector's) credit demand grows while it faces increasingly tight credit supply, the possibility of the failure of financial intermediation may emerge (e.g. due to the costs of increased information asymmetry). By contrast, it can also happen that a given sector is characterised by falling demand, but its credit supply continues to increase. In a case such as this, concerns may arise that the financial intermediary system is providing loans to companies that actually do not pursue any productive economic activity (e.g. due to forced lending). According to our sectoral estimates, the first case may apply in agriculture, the manufacturing industry, the energy sector and hotels, restaurants. By contrast, in the real estate financing sector, concerns may arise that the banking sector has been taking excessive risks, and despite this it is compelled to maintain its exposure (Chart 28).

Chart 29
Interest rates of corporate loans charged by credit institutions and the MNB base rate



Source: MNB.

Price conditions of corporate lending eased with the policy rate cut cycle. The MNB's policy rate has been cut in several steps by more than 2.25 percentage points since August 2012. In parallel with this, interest rates on corporate forint loans, which are predominantly tied to a benchmark, have also declined: overall, average lending rates both on outstanding loans and new loans have declined by 1.3-2 percentage points (Chart 29). In the same period, corporate euro interest rates also fell, mainly as a result of a decline in the sovereign risk spread (CDS). The lower interest rate environment has a positive impact on corporate lending, although in itself it is insufficient for an increase in total outstanding loans (Box 4).

Box 4

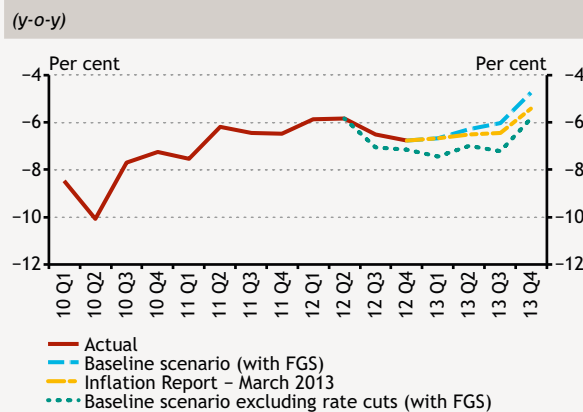
Estimated effect of cuts in the central bank policy rate on corporate lending

Since the beginning of the monetary easing cycle, the central bank policy rate has declined in several steps by a total of 2.25 percentage points. In terms of growth, it is extremely important how the interest rate cut influences corporate lending, as the increasing lending activity may result in a growth in investments and through this channel in an increase in the level of potential GDP as well. The effect of the central bank policy rate cuts on corporate lending may be felt through several channels. The lower interest rate may increase credit demand directly, as the lower financing costs reduce the bankruptcy rate, and more investment projects become profitable. Monetary easing has a direct impact as well on credit demand, as households' consumption demand may also grow, and the weaker exchange rate improves the position of exporting companies. All this may add to companies' willingness to borrow. At the same time, a rate cut may stimulate credit supply as well by reducing the default risk and by an improvement in potential debtors' creditworthiness, which may result in an easing of non-price lending constraints.

The impact of rate cuts in the last half year on corporate lending were quantified using the structural vector autoregressive (SVAR) model presented in the study by Tamási and Világi (2011).⁶ The impact of monetary policy steps is significantly influenced by how unanticipated they are for market participants and how the steps influence the expectations concerning the future interest rate. The impact of an expected interest rate cut is usually smaller than that of a surprising one, as the former has a lesser effect on other financial variables important in terms of lending (longer-term interest rates, exchange rate). The impact of interest rate cut may be amplified if it is considered permanent, because then looser interest rate conditions may be taken into account for the whole term of the loan.

Due to the uncertainty over the expectations, we estimated three scenarios for the effects of the monetary easing on credit outstanding. Based on the individual scenarios we calculated the effect of monetary easing on the loan stock path. The path calculated as the average of these exceeds the path that it would take without the easing by 1.1 per cent at the end of 2013.

Forecast of lending to NFCs along different scenarios

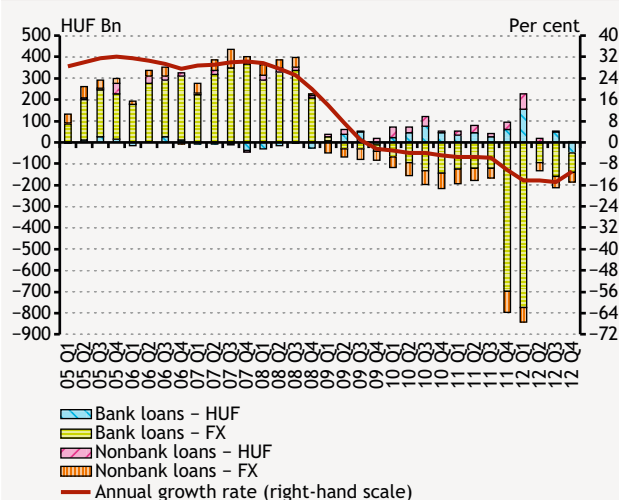


Source: MNB.

⁶ TAMÁSI, BÁLINT AND BALÁZS VILÁGI (2011), 'Identification of credit supply shocks in a Bayesian SVAR model of the Hungarian economy', *MNB Working Papers* 2011/7, Magyar Nemzeti Bank.

3.2 Households' balance sheet adjustment keeps credit demand under pressure

Chart 30
Annual growth rate and net quarterly change of loans to households by denomination

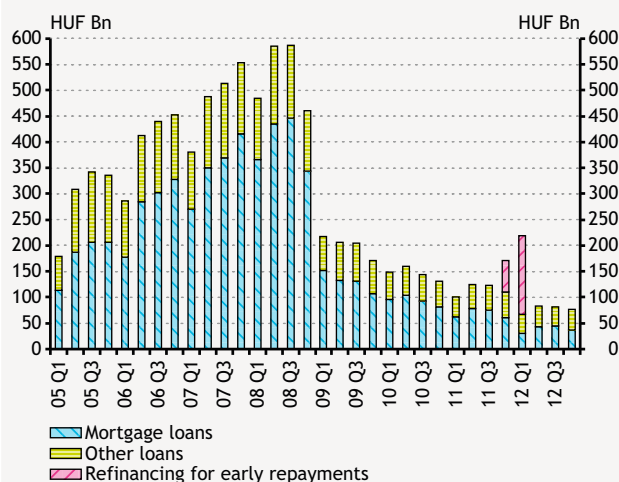


Source: MNB.

Lending activity continues to slow in the household segment. Domestic financial intermediaries' outstanding household loans continued to decline in 2012 H2, which was observed predominantly in the case of consumer credit, but also in the case of housing loans. Regarding denomination, while the natural decline in foreign currency loans continued, forint lending also remained subdued following the conclusion of the early repayment scheme (Chart 30). In Q3, the temporary increase in forint loans was a result of the conversion of non-performing loans. In the last quarter of 2012, outstanding forint loans contracted as well. All of this suggests that although the tight credit conditions which evolved during the early repayments gradually eased as of 2012 H2, households' credit demand still remained subdued. Accordingly, the balance sheet adjustment process following the earlier indebtedness as well as caution due to the uncertain economic prospects continue to be crucial determinants in the behaviour of households.

The volume of new lending sank to a historic low. A further decline in new loan volumes to households was observed at end-2012, reaching another historic low (Chart 31). Moreover, the deterioration in new disbursements took place in parallel with the introduction of housing loans with interest rate subsidy.

Chart 31
New loan volumes of credit institutions in the household segment



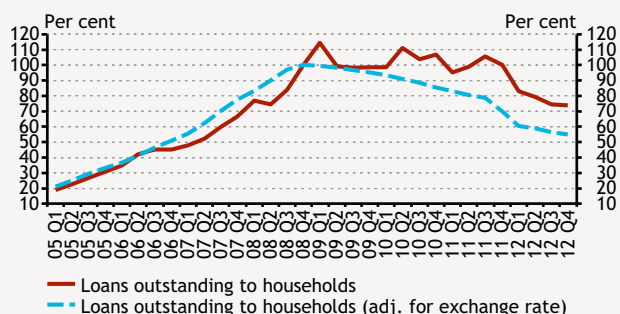
Source: MNB.

The new interest rate subsidy conditions may stimulate the weak credit demand. In view of the low recourse to the subsidised-rate schemes, the conditions were changed in December 2012. The most important changes include an increase in the amount of loan that can be borrowed and the maximum value of residential properties; cancellation of the degressive nature of the interest rate subsidies over years as well as an extension of the allowed purposes of use and their extension over time. Accordingly, based on the new regulations, the maximum amounts of loans for both construction and purchase of new homes as well as for the purchase of existing ones have increased, while the instalment remains unchanged in the first five years, irrespective of the reference interest rate. Overall, the new framework may contribute to a moderate expansion in new lending.

Households' balance sheet adjustment is considerably restrained by exchange rate movements. In the absence

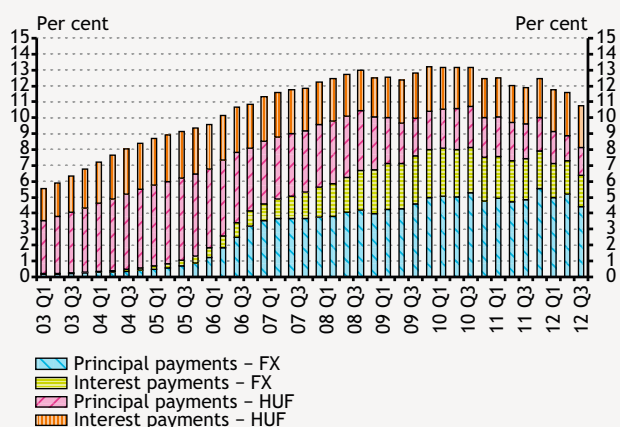
Chart 32
Relative level of outstanding foreign currency household loans

(December 2008 = 100)



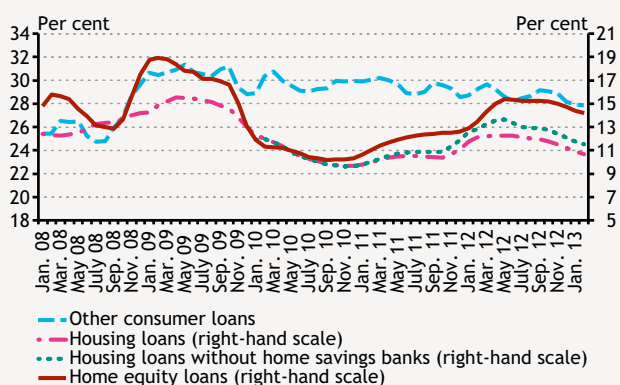
Source: MNB.

Chart 33
Debt service burden of households by denomination as a proportion of disposable income



Source: MNB.

Chart 34
Annual percentage rate of charge (APRC) of new forint lending for households



Note: 3-month moving average.

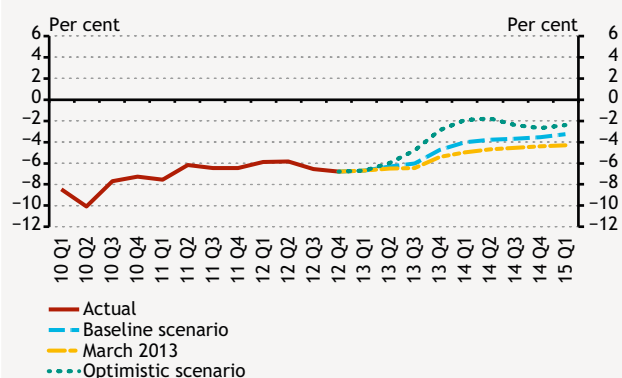
Source: MNB.

of new disbursements, foreign currency loans to households have been gradually declining since end-2008, in parallel with the repayment of loans. During the period since then, 55 per cent of the loans outstanding at end-2008 would have remained, assuming unchanged exchange rates and identical repayment path (Chart 32). However, at end-2012, as a result of the depreciation of the forint in the previous years, the relative value of debt outstanding amounted to 75 per cent of the initial stock. In the period under review, movements in foreign exchange rates considerably restrained households' balance sheet adjustment, and at the same time, depreciation impaired households' income position as well. At the end of 2011 and beginning of 2012, the preferential early repayment scheme accounted for a significant volume in the reduction of the foreign exchange exposure; together with this scheme, households' payment-to-income ratio also declined (Chart 33). Despite all of the above, at end-2012 more than 51 per cent of the loans outstanding were Swiss franc-denominated loans, with a further 8 per cent denominated in euro or other foreign currencies, and there continues to be considerable heterogeneity across households in terms of repayment burdens.

Falling lending rates only have a marginal effect on outstanding loans. Lending rates on newly disbursed household loans also declined in 2012 H2, although to a lesser extent than on corporate loans (Chart 34). However, the average maturities of household loans are much longer than those of corporate loans, and the volume of new loans is also extremely low, while the market of loan refinancing is distressed. Consequently, the declines in interest rates can become effective in outstanding loans only very slowly, while the pass-through is further slowed down by the phenomena that banks put extra burdens on their existing customers to offset losses increased risk costs and the bank levy.

3.3 Improving prospects for lending as a result of the central bank Funding for Growth Scheme

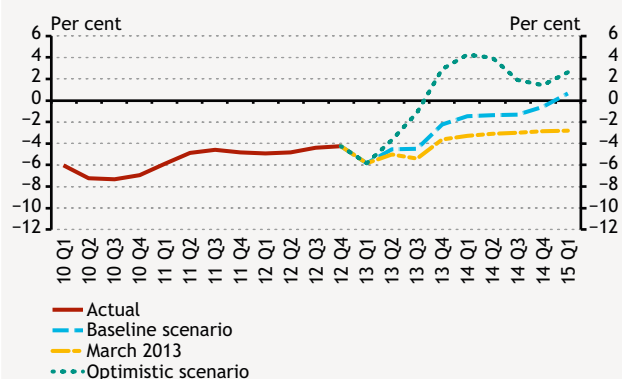
Chart 35
Forecast of lending to non-financial corporations
(YoY changes)



Note: In an optimistic scenario, we expect that the total refinancing amount of HUF 250 billion made available in the first pillar of the FGS will induce an increase in lending.
Source: MNB.

As a result of the Bank's Funding for Growth Scheme, an increase in lending in the SME segment is projected to occur as early as 2014 H2. In the MNB's lending survey, banks projected slight easing in credit conditions in the corporate segment. A decline in loan loss provisioning and the fall in lending rates may have a positive impact on developments in lending, but over the short run this is tempered by the deterioration in economic prospects. The less favourable cyclical position has a negative effect on corporate credit demand and banks' credit supply as well. At the same time, the MNB's Funding for Growth Scheme may ease these constraints, and thus the decline in total outstanding corporate loans may be lower. Taking these contrasting effects into consideration, corporate lending is expected to improve compared to the March 2013 forecast (Chart 35). In respect of SME loans, however, outstanding loans are expected to grow over the forecast horizon as well (Chart 36). Nevertheless, developments in corporate lending depend to a great degree on the utilisation of the programme and on the amount of actual new lending resulting from the favourable refinancing loans.

Chart 36
Forecast of lending to SMEs
(YoY changes)

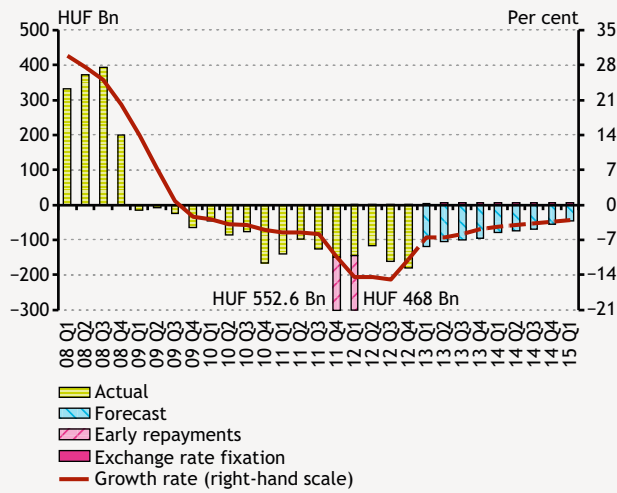


Note: In an optimistic scenario, we expect that the total refinancing amount of HUF 250 billion made available in the first pillar of the FGS will induce an increase in lending.
Source: MNB.

The fall in credit demand in the household segment is larger than our earlier forecast. Until end-2012, the developments observed in household lending were less favourable than our earlier expectations. The volume of new loans remained subdued, in the case of the interest rate subsidy scheme as well. Although banks' credit conditions eased in Q4, deteriorating economic prospects and cautiousness, which increasingly determined the behaviour of households, resulted in a decline in credit demand. The actual data were less favourable than our December 2012 forecast, warranting a downward revision of the forecast path in this segment (Chart 37).

The ongoing and inherent deleveraging of households may continue. The equilibrium credit-to-GDP ratio estimated from the real interest rate, inflation and on the basis of economic development is approximately 15-20 per cent. Despite the adjustment in previous years, at end-2012 the actual household credit-to-GDP figure of around 24 per

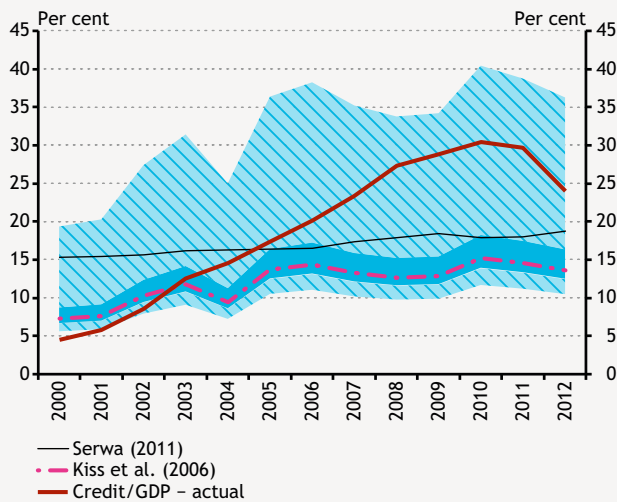
Chart 37
Forecast of lending to the household sector



Source: MNB.

cent is still well above the equilibrium level (Chart 38) and is in the upper range of the band that captures the uncertainty of the estimate.⁷ Based on all of the above, there is still ample room for deleveraging in households' indebtedness, and accordingly a steady decline is expected in the coming years.

Chart 38
Equilibrium levels of households' credit-to-GDP ratio



Note: The bands indicated in blue depict the uncertainty of the estimate of Kiss et al. (2006).

Source: MNB.

⁷ The models estimated long-term relations between loans outstanding and the fundamentals for developed countries. We calculated the equilibrium for Hungary on the basis of these coefficients. At the same time, there is significant heterogeneity across countries, which is captured in the panel models by different constants for individual countries. Accordingly, depending on the choice of the constant, there may be considerable differences in the equilibrium credit-to-GDP. For more details, see: KISS, G., M. NAGY AND B. VONNÁK (2006), "Credit Growth in Central and Eastern Europe: Trend, Cycle or Boom?", *MNB Working Papers*, 2006/10. and SERWA, D. (2011), "Identifying multiple regimes in the model of credit to households", *National Bank of Poland Working Papers*, 99.

4 Portfolio quality

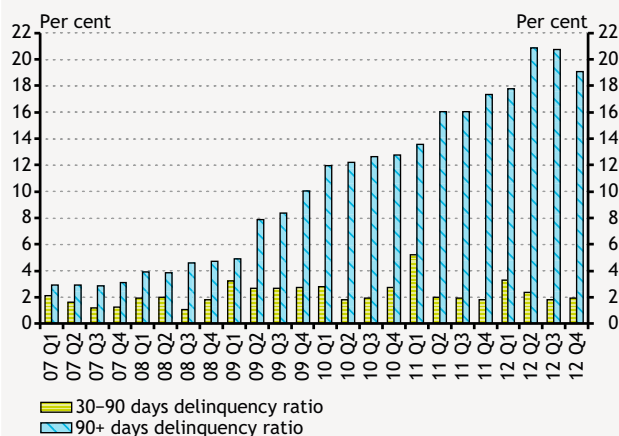
– Introduction of the institution of family bankruptcy may result in a material improvement in the management of problematic household loans

In the second half of the year, within the household portfolio the ratio of non-performing loans (NPL) remained at a nearly unchanged level, whereas it declined significantly in the corporate segment. In the case of corporate loans this was primarily the result of stronger portfolio cleaning, but even without that factor there would have been a slight improvement. In the case of household loans the conversion of non-performing FX-loans into forints and the gradual increase in the utilisation of the exchange rate cap prevented the indicator from deteriorating. The cost of provisioning declined considerably on the corporate side mainly due to the base effect. Although loan loss was high by historical standards in H2, it was far below the outlier seen at end-2011. Thus, the coverage of the portfolio increased overall, despite the lower loan loss, which reduces the risk of insufficient coverage. On the household side, the cost of provisioning declined slightly versus the mid-year figure, but coverage increased, as the level of the NPL ratio remained unchanged.

The current improvement in corporate portfolio quality is not yet considered a turning point, as the NPL ratio is expected to rise in the coming two years, albeit at a slower pace. An actual turnaround would require a steadily high cleaning ratio and an increase in loans outstanding. On the household side, in the coming two years the debtor assistance programmes may bring an end to the deterioration in the portfolio, and the planned introduction of the institution of family bankruptcy measures may result in further improvement. The ratio of non-performing loans to total loans is expected to peak at end-2013. At the same time, lower loan loss provisioning is expected in both segments, assuming that the loan loss provisioning behind the current non-performing loans is adequate, and thus no additional provisioning is needed.

4.1 Corporate loan quality improved slightly in 2012 H2

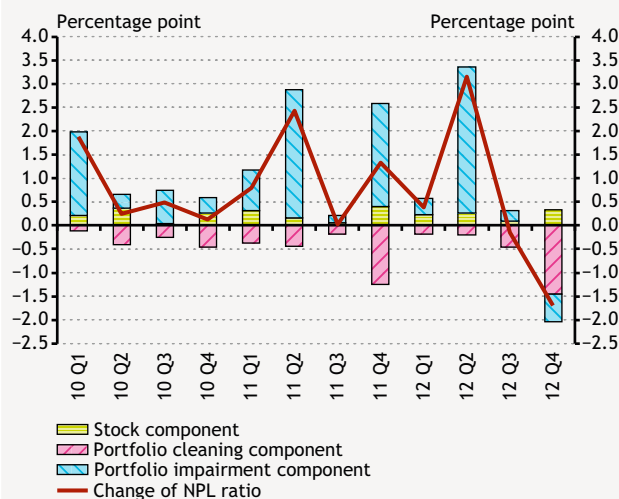
Chart 39
Share of non-performing corporate loans of the banking sector



Source: MNB.

The share of non-performing loans in the corporate portfolio declined considerably in Q4. Following the surge observed in H1, the share of non-performing corporate loans in the portfolio declined in 2012 H2. The NPL ratio of 19.1 per cent at end-2012 is quite a positive surprise. The ratio of loans 30-90 days past due did not change significantly either, so this is not what explains the decline in the NPL ratio (Chart 39). Decomposing the change into factors reveals that the portfolio deterioration in the last quarter made a negative contribution to the indicator for the first time during the crisis, although only to a small extent (Chart 40). However, it means that at end-2012 the amount of non-performing loans declined even above and beyond the effect of the cleaning, i.e. the amount of newly defaulting loans was lower than the amount of those that became performing again. As before, the impact of the decline in outstanding loans on the indicator was low but positive in the second half of the year. The considerable decline was mainly explained by the very strong portfolio cleaning, which was typical at some banks. The NPL ratio declined both in the case of project loans and in the case of other corporate loans not related to real estate projects.

Chart 40
Factors affecting changes in the ratio of non-performing corporate loans

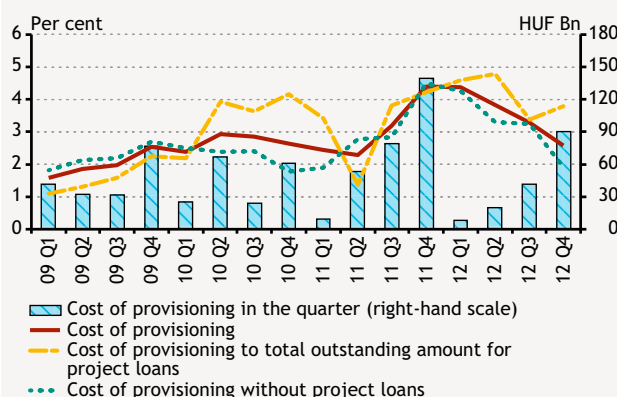


Source: MNB.

In the case of corporate loans, the cost of provisioning fell considerably in the second half of the year, mainly due to the base effect. Following the 3.3 per cent reading in September 2012, the loan loss on the portfolio amounted to 2.6 per cent in December. The annual indicator declined, in spite of the fact that loan loss provisioning in the last quarter can be considered high even in a historical comparison. This improvement in the indicator mainly results from the base effect, as new loan loss provisioning was extremely high in 2011 H2. Looking at loan loss provisioning for project loans and other loans separately, the ratio of provisioning for project loans increased slightly, while there was a greater decline in the case of other loans (Chart 41). The NPL ratio also declined to a greater extent in the case of the latter.

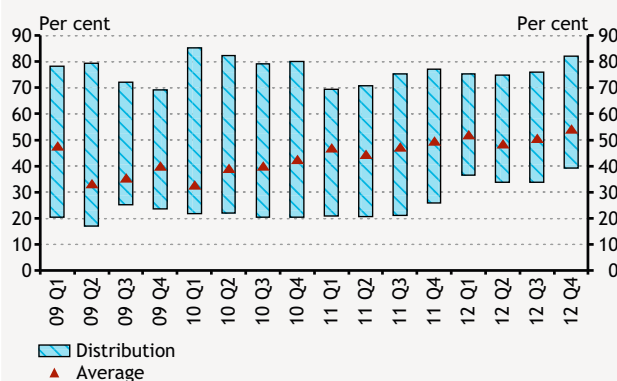
Loan loss coverage increased for the whole portfolio. With the high amount of new loan loss provisioning and the decline in non-performing loans, the coverage of non-performing corporate loans increased. At the end of the first half of 2012 the indicator was 49 per cent and it

Chart 41
Cost of provisioning to total loans in the corporate segment



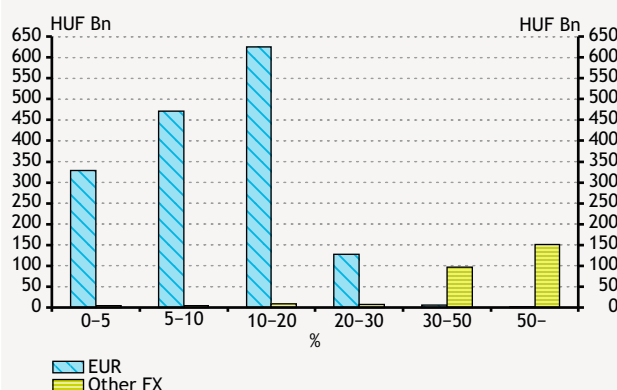
Source: MNB.

Chart 42
Loan loss coverage of corporate loans



Note: Banks with at least 2 per cent share in corporate lending.
Source: MNB.

Chart 43
Exchange rate changes of loans to SMEs by the banking sector and branches



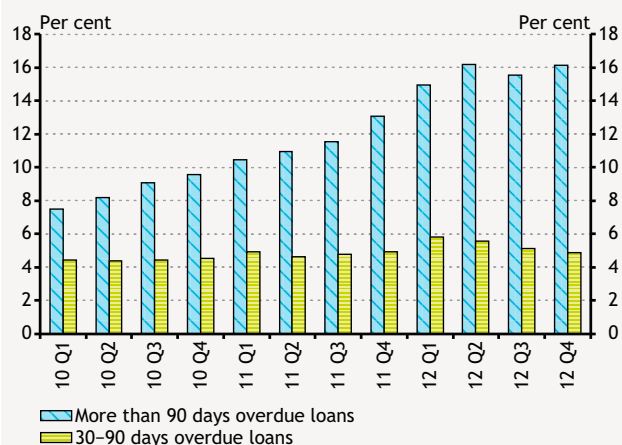
Note: Exchange rate change means the depreciation between the exchange rate upon borrowing and the exchange rate on 31 December 2012.
Source: Central Credit Information System.

exceeded 54 per cent at the end of December. It is positive that the indicator increased significantly even at the worst-performing bank. Coverage was at least 40 per cent at each participant in corporate lending (Chart 42).

Resolving the foreign currency debt problem of the SME sector also requires external intervention. The risks originating from outstanding foreign exchange loans are significant in the SME segment of the corporate sector as well. Similarly to households, SME customers are mostly (53 per cent) indebted in foreign exchange, within which the Swiss franc exposure is also considerable, accounting for some 15 per cent of foreign exchange loans. Meanwhile, their incomes are typically not in foreign currency, so they have considerable open foreign exchange positions. In recent years, the depreciation of the forint and the appreciation of the Swiss franc have resulted in a considerable deterioration in the position of SME customers with foreign exchange loans (Chart 43), which may lead to an increase in the number of bankruptcies of such companies. The SME sector's significant role in employment clearly justifies central bank steps to reduce the risks stemming from the foreign exchange debt. The second pillar of the Bank's Funding for Growth Scheme, which supports the replacement of foreign exchange loans with low-interest forint loans, serves exactly this purpose.

4.2 Deterioration in the household portfolio slowed down in H2

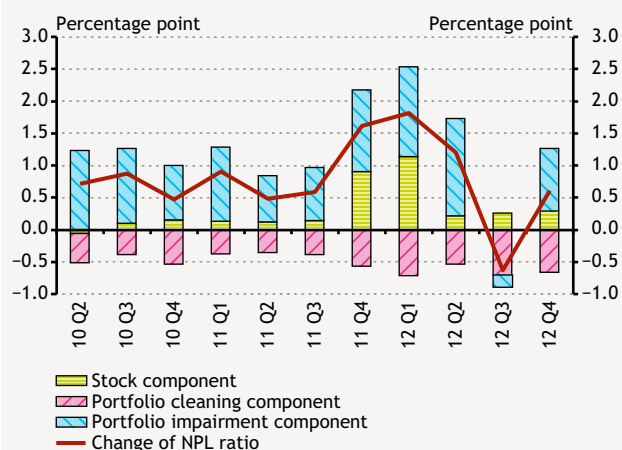
Chart 44
Share of non-performing household loans in the banking sector



Source: MNB.

In the household segment, the share of non-performing loans within the portfolio remained unchanged in 2012 H2. Within household loans, the ratio of loans 90 days past due (NPL) did not change significantly in H2, amounting to 16.1 per cent at the end of the year⁸ (Chart 44). A decline took place in Q3, mainly as a result of government programmes (converting non-performing FX-loans into forints, exchange rate cap) and one-off measures taken by some banks. The indicator increased again in Q4. The decomposition of the change reveals that the portfolio deterioration component was positive again, i.e. there was an actual increase in non-performing loans (Chart 45). The steady decline in outstanding loans continued to raise the indicator, but this was not much different from what had been seen earlier. In addition, the size of the cleaning component also offset the effects that raise the NPL ratio to the usual extent. Of this, the impact of the operation of the National Asset Management Agency is still marginal, considering that most of the contracts are being prepared.

Chart 45
Factors affecting changes in the ratio of non-performing household loans

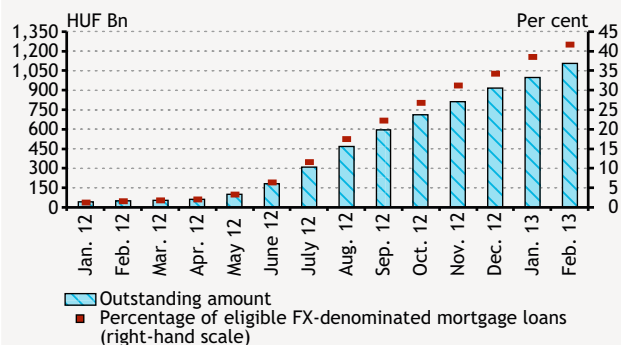


Source: MNB.

The extension of the possibility of entering the exchange rate cap scheme may further reduce households' exchange rate exposure. Until end-February 2013, nearly 42 per cent of the eligible foreign exchange loans, i.e. mortgage loans amounting to some HUF 1,100 billion were included in the exchange rate cap system (Chart 46). Although entering the exchange rate cap scheme entails only advantages for those eligible, participation has been much below our expectations until now. Due to the weak interest, the possibility of entering the exchange rate cap has been extended through end-May 2013, which may result in a material increase in participation and a decline in exchange rate exposure. If utilisation of the exchange rate cap scheme continues to be low, in order to reduce the risks stemming from foreign exchange lending, it may be worthwhile to further extend the possibility of entering, even for the whole maturity. An even more efficient solution could be if – within the framework of coming to an agreement with bank sector participants – the institution of the exchange rate cap was extended to all foreign exchange

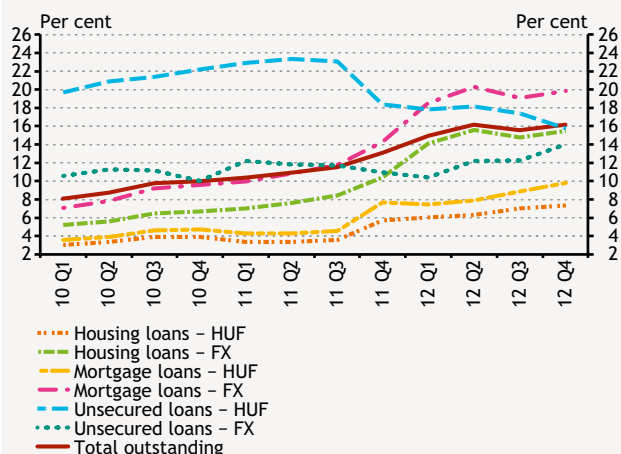
⁸ Actual data regarding 2013 Q1 indicate a deterioration in the household loan portfolio of banking sector, however larger portion of the changes related to mergers of financial enterprises; hence it is mostly a technical issue.

Chart 46
Utilisation of the exchange rate cap



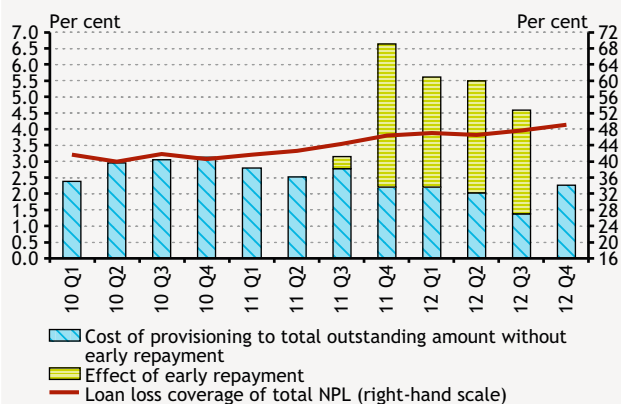
Source: MNB.

Chart 47
Share of non-performing loans within total loans by products



Source: MNB.

Chart 48
Cost of provisioning to total loans and coverage in the household segment



Source: MNB.

mortgage loans, and the customer could be exempted from participation only upon his express request.

Foreign exchange and forint mortgage loans deteriorated to a similar extent in H2. An examination of the delinquency of loans outstanding by products presents a uniform picture. Mainly due to conversions, it was foreign exchange mortgage loans that improved and the quality of outstanding forint loans that deteriorated in Q3, whilst slight deterioration was observed in both segments in the last quarter. Within foreign exchange mortgage loans, the ratio of non-performing loans reached 20 per cent again, but nearly 10 per cent of forint loans are already also 90 days past due (Chart 47). However, in the case of the latter indicator the negative effect of the conversion of non-performing foreign currency loans into forints also has to be taken into account.

In line with the increasing ratio of non-performing loans, the cost of provisioning also increased. Disregarding the effect of the early repayment scheme, the ratio of loan loss to total loans was 2.3 per cent at the end of the year, which is much higher than the end-September value. In the last quarter, loan losses in the household segment were relatively high in historical comparison as well. Even with an increase in NPLs, new loan loss reserves were sufficient to add to loan loss coverage. Accordingly, coverage increased to 49 per cent at system level by the end of the year (Chart 48). Asymmetry across banks continues to be significant, although it has declined. While coverage is 30 per cent for the worst-performing bank, this indicator is 70 per cent for the best one.

Due to the financial stability, economic activity and social dimensions of the problem, the high level of non-performing household loans requires a comprehensive approach. Many problematic household debtors have more than one loan, and they presumably have other liabilities as well, not vis-à-vis financial institutions. In addition, due to earlier too loose lending conditions, in the case of problematic mortgage loans the amount of loans typically exceeds the value of the real estate that serves as collateral. The main advantage of family bankruptcy is that – as opposed to earlier debtor assistance programmes that covered only mortgage loans – it can cover all the debts of a debtor simultaneously (Box 5).

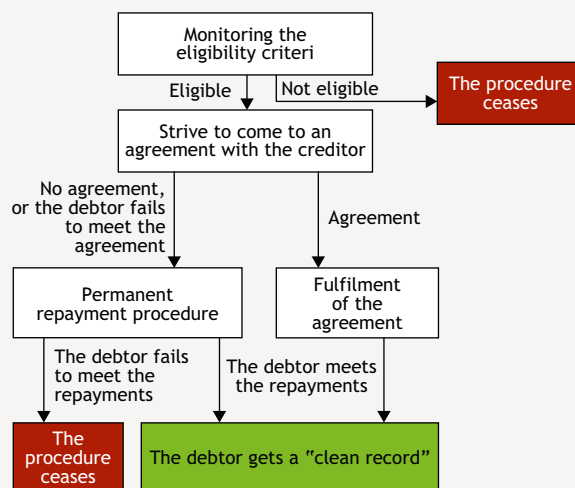
Box 5

Financial stability considerations for the planned family bankruptcy regulation

Introduction of family bankruptcy proceedings may entail several advantages in terms of financial stability. Regarding the current portfolio, it can be considered a comprehensive restructuring programme that covers all debts, may restore the repayment capacity (of some solvent debtors) and accelerates the cleaning of the loan portfolio (by debtors who cannot be saved). Looking ahead, as an institutionalised, permanent facility it may bring predictability into the financial system, reducing the necessity of ordering new, ad-hoc debtor rescue programmes and moratoriums, since these elements are parts of the bankruptcy proceedings.

At the same time, formulating the details of the regulation, which is expected to be adopted in the spring of 2013, requires due foresight. According to the current conception, debtors who initiate the bankruptcy proceedings must first strive to come to an agreement with their creditors. In this phase, all debt restructuring supported by the creditors can take place. However, if there is no agreement, or if the debtor fails to meet his repayment obligation set out in the agreement, bankruptcy proceedings would continue with a several-year permanent repayment procedure. In this phase, based on the debtor's wealth and income, a repayment plan would be prepared, which already needs no approval by the creditors. The repayment plan would regulate how the income from the sale of the debtor's marketable assets and his regular income have to be divided among the household's costs of living, housing and the repayment of debts. After fulfilment of the provisions of the permanent repayment plan (or the agreement), the debtor would be exempted from the remaining debts, i.e. he would have a 'clean record'.

The planned personal bankruptcy



Source: MNB.

While avoiding mass forced sales of residential real estates is a legitimate social policy objective, in terms of financial stability and growth the fullest possible protection of mortgage is also justified, as only this allows the offering of loan products with low risk premia. Therefore, it may be expedient to introduce a regulation that facilitates the repayment of mortgage loans and through that the keeping of the debtor's home. A possible way of this is if – based on the so-called Chapter 13 bankruptcy applied in the United States – in the permanent repayment procedure – after the costs of living and general expenses – primarily the mortgage loan is paid back as prioritised debt from the debtor's income. At the same time, unsecured debts should be repaid only and to the extent as allowed by the debtor's income after the deduction of the costs of living, the maintenance costs of housing and other mandatory costs as well as the payment of the instalment of the mortgage loan.

In practice, however, paying the normal instalment of the mortgage loan may cause problems to many debtors who are otherwise willing to pay. Therefore, it is expedient that the law contain some restructuring feature as well. Several options may arise, which may even be combined with one another:

– Firstly, the regulation may require the division of loans with an above 100 per cent loan-to-value (LTV) ratio into a secured and an unsecured part. This would result in a decline in the principal sum and thus in the instalment of the secured mortgage loan (which has to be paid in any case for keeping the residence), whereas the aforementioned, more permissive rules of unsecured loans would apply to the portion that exceeds the value of the real estate.

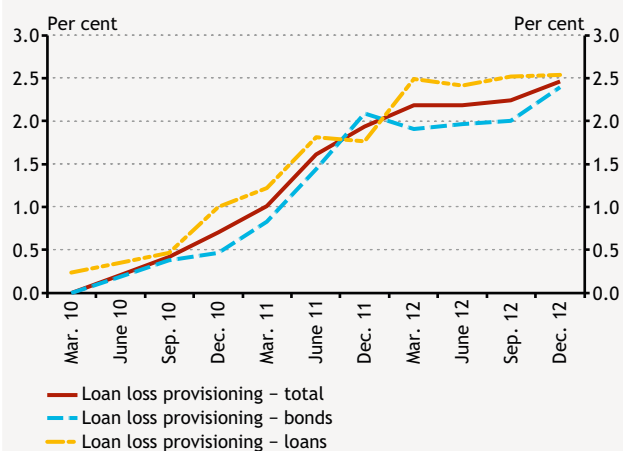
Dividing mortgage loans with an LTV ratio of more than 100 per cent into two in the bankruptcy proceedings is partly similar – but the rule would provide better protection of the mortgage – than the so-called *right to walk away*, according to which the debtor can practically step out of the mortgage contract if he returns the real estate serving as collateral to the creditor. By 'walking away', the debtor loses his ownership in any case, but gets rid of his total debt immediately, i.e. the portion of the debt exceeding the value of the collateral is a sure gain, even if his income would allow the repayment of the total debt. By contrast, during the bankruptcy

proceedings the debtor would have a choice: he could try to keep his home (undertaking to repay the secured principal in full during the term) or give it up (accepting auctioning). He does not have to pay the unsecured part in full in any of the above cases. However, for several years he should spend all his available income, if he has any, on repaying the unsecured part, and any remaining unsecured claims would only be cancelled at the end of the procedure. Overall, similarly to the right to walk away, with the above 'cut-into-two' element the family bankruptcy proceedings may considerably ease the situation of debtors whose LTV ratio is above 100 per cent, but this is done with lower moral hazard, also allowing the avoidance of mass sales of real estates.

- Secondly, the rules of the family bankruptcy proceedings may also require that for the period of the permanent repayment procedure the mortgagee set a reduced but considerable instalment (reaching, for example, 60 per cent of the 'normal'). As, according to the above, at the end of the several-year period of the permanent repayment procedure a clean record may be achieved, i.e. the other, unsecured debts are cancelled, by then the debtor's income available for the repayment of the mortgage may also increase, i.e. the temporary easing may mean sustainable help.

Due to the high proportion of high-LTV mortgage loans, the two aforementioned restructuring elements, especially combined with one another, could presumably help a significant number of debtors to keep their mortgage loans and homes at the same time. However, if a debtor is unable to pay the instalments even with the above means of help, foreclosure has to take place during the family bankruptcy proceedings as well. Nevertheless, the burden of losing homes could be reduced through the development and mobilisation of local governments' social tenement flat system, which works with low efficiency at present.

Chart 49
Ratio of loan loss reserves to total loans on the local government portfolio



Source: MNB.

Government measures may result in a further decline in the risk of local government exposures. In recent years, the repayment burden of local governments – bonds accumulated after 2005, denominated mostly in foreign currency – stretched the frameworks of local governments' financial management. The default risk related to the total local government exposure increased accordingly, and in parallel with that, the required loan loss provisioning also increased (Chart 49). The government mitigated the financial problems of the sector in several steps. The state assumed the debts of county local governments and smaller local governments at end-2011 and in 2012, respectively. According to the plans of the government, in 2013 the state will assume nearly half of larger local governments' liabilities as well (Box 6). In line with the government steps, no additional loans loss provisioning by credit institutions is needed, and the measures to be implemented in 2013 are expected to also allow the reversal of a part of the loan loss reserves.

Box 6

Government measures to mitigate local governments' indebtedness

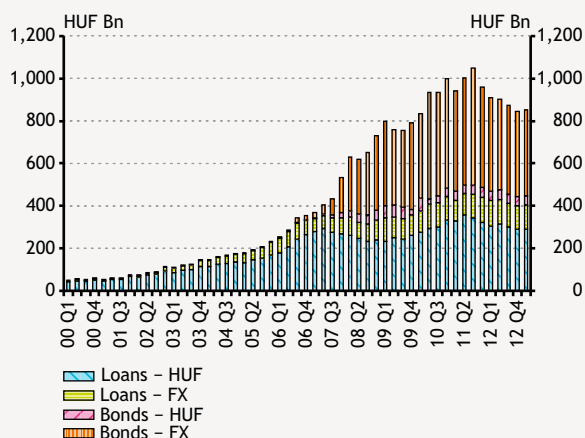
A considerable amount of foreign currency denominated debt was accumulated in the local government sector during 2007 and 2008. In February 2012, outstanding liabilities vis-à-vis the banking sector as a whole exceeded HUF 850 billion, nearly half of which were loans, with bonds accounting for the remaining part. As 90 per cent of the bonds are denominated in foreign currency, more than 60 per cent of the total debt is denominated in foreign currency. The risks related to this debt are increased by the fact that while local governments initially placed the obtained funds as bank deposits, i.e. they did not add to their exposure to the banking sector, as of end-2009 they started to reduce their deposits, which also resulted in a considerable deterioration in their position vis-à-vis the banking sector. As the 3 to 4-year grace periods typical of bonds began to expire, local governments' repayment obligation surges suddenly, and this may stretch the framework of their financial management. Although it eases the payment obligation related to bonds

that Swiss and the intra euro area interbank reference rates have declined considerably in recent years, on the whole the financial consolidation of the sector has become necessary.

The Government attempted to mitigate the risks related to local governments' debt in several steps. With the assumption of the debts of county governments (HUF 170 billion) and settlements with less than 5,000 inhabitants (HUF 74 billion) during 2011 and at end-2012, respectively, the repayment problems of the local governments that were perhaps in the most stretched situation were solved. Total debt will continue to decline if the assumption of liabilities also takes place in the case of settlements with more than 5,000 inhabitants as planned by the Government. As a result of this further debt transfer to the central budget exceeding HUF 600 billion, total debt may fall from the current HUF 850 billion to around HUF 250 billion. It also points to the improvement in the solvency of the sector that the planned debt

assumption may take place in a differentiated manner. The extent of the debt transfer is determined on the basis of the ratio of the given local government's per capita business tax capacity to the adjusted average within its settlement category,⁹ but individual considerations may also play a role. Although it is not yet known what debt elements will be transferred, it is important to emphasise that the measure can significantly reduce the risks related to the sector's repayment capacity if foreign currency-denominated bonds have a greater weight within the debt assumed. As local government debt is a part of consolidated government debt, the assumption of the liabilities will not add to government debt, while the measure is expected to burden the 2013 central budget by HUF 30 billion.

Local government exposure of the banking system

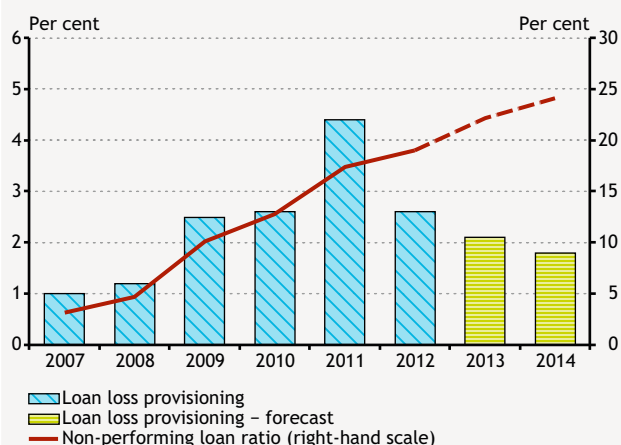


Source: MNB.

⁹ Settlement categories are determined on the basis of the number of inhabitants.

4.3 Further increase is expected in the ratio of non-performing corporate loans

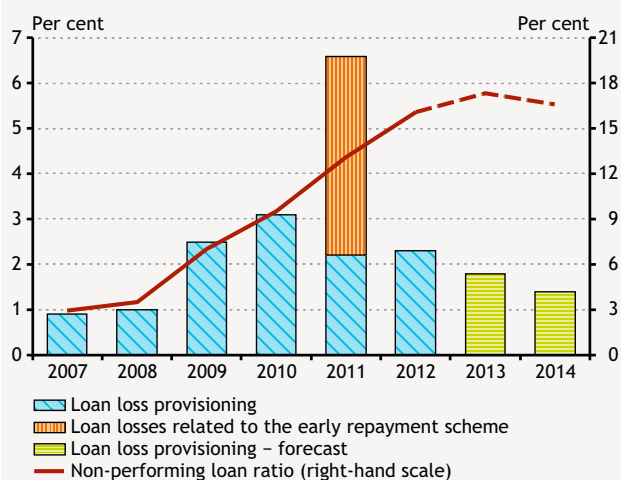
Chart 50
Ratio of non-performing loans and cost of provisioning in the corporate segment



Source: MNB.

In spite of the favourable data from the last quarter, a further increase is expected in the share of non-performing corporate loans within the portfolio. The ratio of non-performing corporate loans declined in the final quarter of 2012. However, this is not considered a turning point yet. The growth outlook remains weak, particularly for domestic demand. Therefore, in the coming period no improvement is expected in the credit quality of large real estate projects and the SME sector, which are particularly sensitive to the developments in the domestic market. Other factors with an impact on the NPL ratio are also not expected to change markedly. Portfolio cleaning continues to be sluggish, and the corporate portfolio will contract over the coming two-year period. As a result of all of this, the NPL ratio may rise to above 24 per cent by end-2014 (Chart 50). With a slow increase in the NPL ratio, the cost of provisioning may be lower than in previous years, assuming that the loan loss provisioning behind the currently non-performing loans is adequate and no additional loan loss provisioning needs to be set aside.

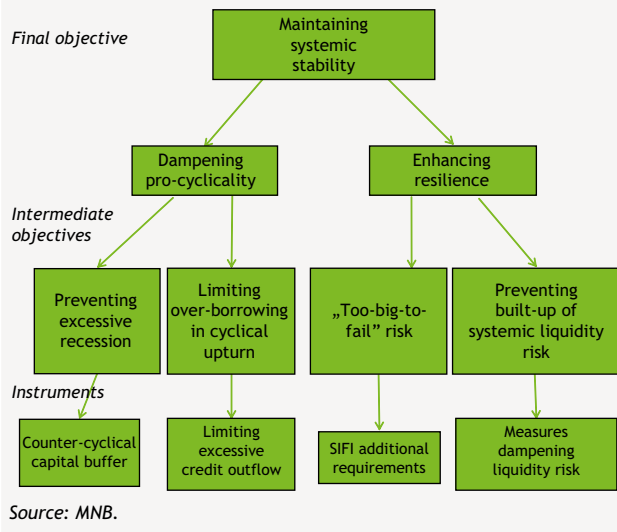
Chart 51
Ratio of non-performing loans and cost of provisioning in the household segment



Source: MNB.

Steady deterioration in the household segment may be prevented by state programmes. Within household loans, the share of non-performing loans exceeded 16 per cent last year. However, government programmes may help to curb the rising trend. The exchange rate cap may provide significant assistance for debtors with debt servicing difficulties caused by elevated instalments. Accordingly, the upper limit of CHF/HUF 180 reduces the probability of default of participants (our forecast is based on a 50 per cent participation ratio). The low portfolio cleaning ratio may be boosted by the actual start-up of the National Asset Management Agency. Therefore, no significant increase in the NPL ratio is expected in the coming two years. The indicator may peak around 17 per cent at the end of next year, and already decline to around 16.6 per cent by the end of the forecast period. In parallel with an improving NPL ratio, the cost of provisioning may also improve. At the end of the two-year time horizon, the indicator may drop well below the level of 2 per cent (Chart 51), assuming that the loan loss provisioning on the current outstanding non-performing loans is adequate, and thus no additional provisioning is necessary.

Chart 52
Possible objectives and instruments of macroprudential policy

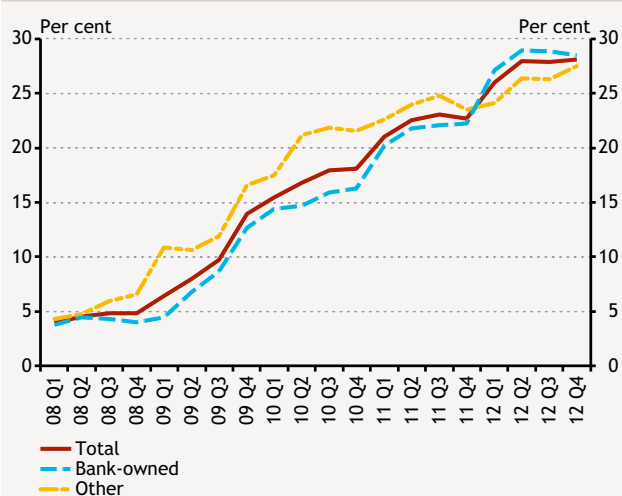


Hungary, too, needs a macroprudential framework that can prevent the future evolution of risks entailing real economy losses comparable to those caused by foreign currency lending (Chart 52). In addition to facilitating households' excessive indebtedness, foreign exchange lending in Hungary resulted in excessive maturity mismatches and a significant amount of non-performing loans at the banks' level as well as excessive foreign exchange exposure at the economy level. In order to prevent similar cases in the future, it would be necessary to designate the MNB as the institution primarily responsible for the analysis and identification of systemic risks and for the necessary interventions.

4.4 Financial corporations' portfolio stopped deteriorating, while the ratio of non-performing loans increased at cooperative credit institutions

Chart 53

Ratio of non-performing loans at financial enterprises by ownership



Source: MNB.

Financial corporations' portfolio stopped deteriorating in H2. The NPL ratio within the portfolio increased significantly in 2012 H1, reaching almost 28 per cent at end-June. In the second half of the year, this deterioration came to a sudden halt and the indicator then remained practically stagnant (Chart 53). For the time being, this does not necessarily mean a real turnaround, as a similar trend was observed in 2011 H2 as well. In parallel with an unchanged NPL ratio, the cost of provisioning declined. This was sufficient for the relatively high earlier coverage of around 65 per cent to remain. It is notably higher than in the banking sector, although it must be taken into account that collateral coverage is significantly lower in the portfolio of financial enterprises than in that of banks.

Slight deterioration was observed in the portfolio of cooperative credit institutions, both in the household and the corporate segments. Cooperative credit institutions' corporate portfolio quality continued to deteriorate in H2, albeit only to a minor extent. Nonetheless, the more than 28 per cent level observed at mid-year is still very high (Table 2). Notwithstanding the slight deterioration,

Table 2

Key indicators of corporate portfolio quality at cooperative credit institutions

(per cent)

	2008	2009	2010 H1	2010 H2	2011 H1	2011 H2	2012 H1	2012 H2
90+ days delinquency ratio	12.8	13.8	17.8	17.3	25.0	25.9	26.9	28.5
Loan loss coverage	40.9	42.9	35.0	35.2	30.4	32.2	35.6	36.1
Cost of provisioning	1.2	1.3	-	1.9	2.2	2.0	1.9	1.7

Source: MNB.

Table 3

Key indicators of household portfolio quality at cooperative credit institutions

(per cent)

	2008	2009	2010 H1	2010 H2	2011 H1	2011 H2	2012 H1	2012 H2
90+ days delinquency ratio	9.1	11.0	13.0	13.8	16.9	17.0	15.5	16.1
Loan loss coverage	47.9	50.6	46.7	46.6	45.3	46.2	47.0	48.1
Cost of provisioning	0.9	1.3	-	1.2	1.1	1.7	1.3	1.6

Source: MNB.

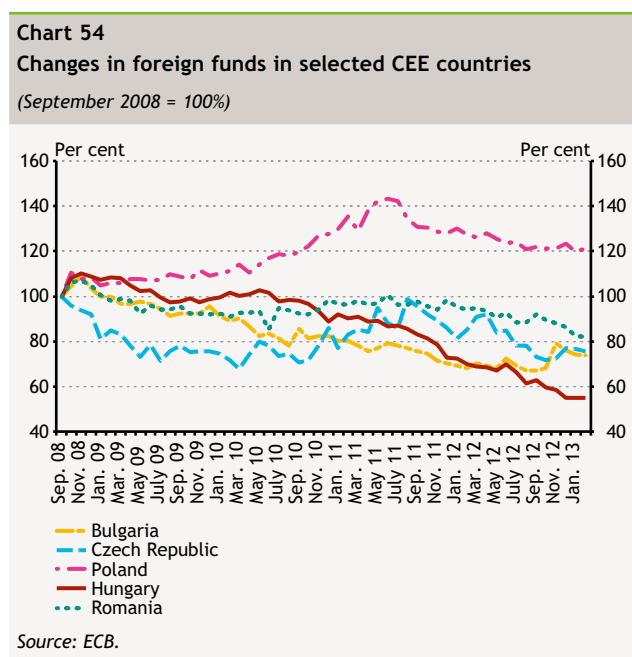
there was no material change in the cost of provisioning. As a result, an overall improvement took place in the loan loss coverage of non-performing loans. Slight deterioration was observed in the case of the household portfolio as well. On the whole, the ratio of non-performing loans within the sector amounted to 16 per cent at the end of the period (Table 3). In parallel with the slight deterioration, the cost of provisioning and thus loan loss coverage also increased.

5 Bank liquidity

- The FGS considerably reduces dependence on external sources of foreign exchange, and the loan-to-deposit ratio may stabilise at around 100 per cent

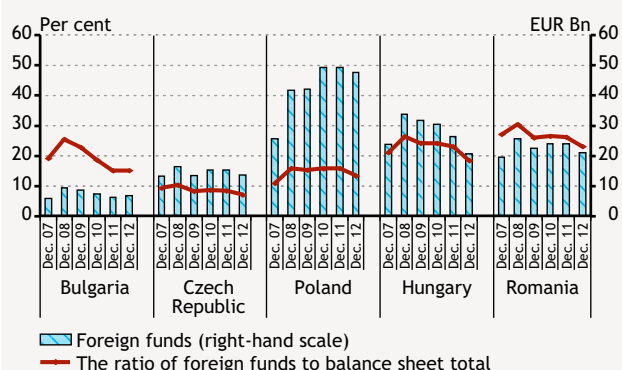
Within the region, the outflow of foreign funds was the fastest in Hungary in 2012. External funds of the banking sector declined by EUR 16 billion between the beginning of the crisis and the end of 2012. The rapid outflow of foreign funds is essentially a natural phenomenon, largely attributable to households' balance sheet adjustment. However, the withdrawal of foreign funds is partly accompanied by domestic banks' restrained corporate lending: 20 per cent of the outflow can be considered as an unfavourable development.

Based on our forecast, outflows of foreign funds in 2013 and 2014 are expected to amount to some EUR 11.5 billion in total; of this amount, the Bank's FGS will provide foreign exchange liquidity for the withdrawal of around EUR 2.2 billion. The decline in external funding due to the FGS is not considered risky, as it is made possible by the decline in MNB bills and not by a decline in outstanding business loans. Due to the currency swap transactions used for the repayment of external liabilities, swap exposure increases considerably, but we do not consider that to be problematic, as the increment is a transaction vis-à-vis the MNB. Therefore, no roll-over risk need be taken into account, and the margin requirement is in forints. The loan-to-deposit ratio of the banking sector may decline to around 100 per cent in the coming two years and is expected to become stable at this level.



The outflow of foreign funds is not a unique phenomenon in regional comparison, but the rate of decline was the fastest in Hungary in 2012. From the onset of the crisis to 2011 H2 the developments in the Hungarian banking sector's foreign funds were in line with regional trends. However, as a result of the early repayment scheme, starting from end-2011 the rate of the withdrawal of foreign funds from Hungary accelerated compared to other countries in the region and did not slow down in 2012 either (Chart 54). The role of foreign funds in financing varies across the banking sectors of the individual countries (Chart 55). Both in terms of volume and as a proportion of the balance sheet total, Romania is the closest to Hungary. Withdrawal of foreign funds was considerable from both countries in 2012, but Hungary's falling behind the region is even more spectacular in this comparison. The withdrawal of foreign funds resulted in a considerable decline in the proportion of liabilities with residual maturities of up to one year (from 46.5 per cent to some 40.5 per cent).

Chart 55
Foreign funds and their ratio to balance sheet totals in selected CEE countries

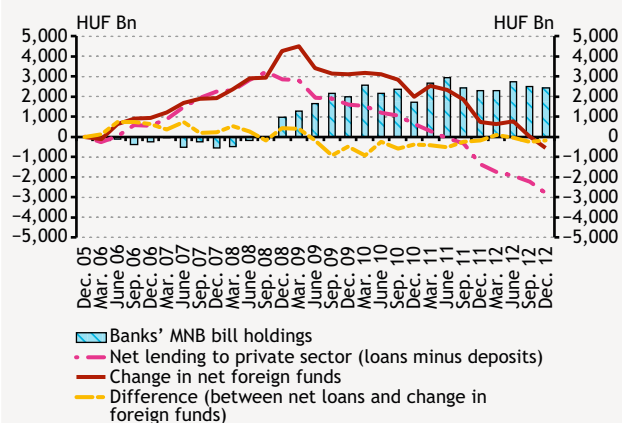


Source: ECB.

The rapid outflow of foreign funds is a mostly natural, but in a smaller part unfavourable process. Due to the high external indebtedness of the country, this is a process which is justified by the balance sheet adjustment of the sectors concerned, of households in particular. An inevitable consequence of this process is the decline in the dependence on foreign funds. However, the withdrawal of foreign funds is partly accompanied by restraint in domestic banks' corporate lending, which may result in a permanent fall in production capacities, hindering the decline in the external debt-to-GDP ratio. Corporate loans outstanding have declined by a total EUR 7 billion (approximately HUF 2,000 billion) since the crisis; roughly half of this amount is attributable to the tightening of bank lending conditions. Between the onset of the crisis and end-2012, the banking sector's foreign funds declined by EUR 16 billion (Chart 56). Accordingly, some 20 per cent of the outflow can be considered unfavourable and 80 per cent as a natural process.

Chart 56
Use of banks' net external funds for net lending and liquid assets

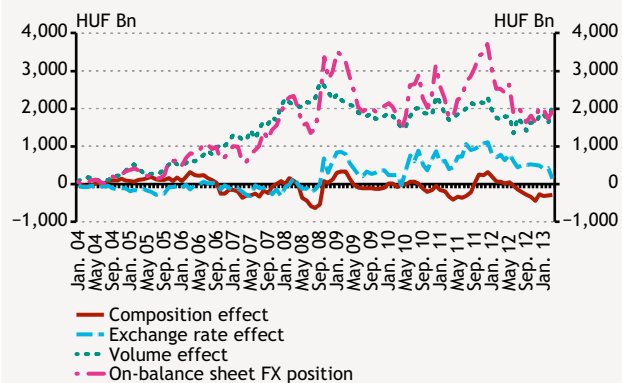
(cumulative transactions)



Source: MNB.

The different currency structure of the rapidly declining outstanding loans and the foreign funds withdrawn as a consequence resulted in a sharp increase in swap exposure. The withdrawal of foreign funds is a natural process when banks' activity is declining. However, in terms of banks' liquidity position it cannot be considered neutral when banks obtain their predominantly foreign currency-denominated foreign funds by exchanging their forint liquidity through swap transactions. In connection with the high swap exposure, the most important liquidity risk is the margin call related to transactions, which may result in a rapid decline in banks' liquidity reserves in the case of a weakening of the exchange rate of the forint.

Chart 57
Decomposition of the change in the on-balance-sheet foreign exchange position of the banking sector and branches

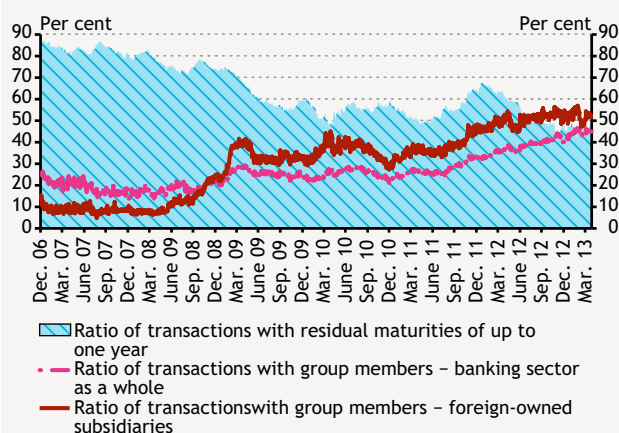


Source: MNB.

Following a surge at end-2011, swap exposure declined considerably in 2012, primarily due to appreciation of the forint exchange rate. Composition, volume and exchange rate effects played key roles in the decline in swap exposure last year (Chart 57). However, for all three factors the decline was determined by the strengthening of the exchange rate of the forint.

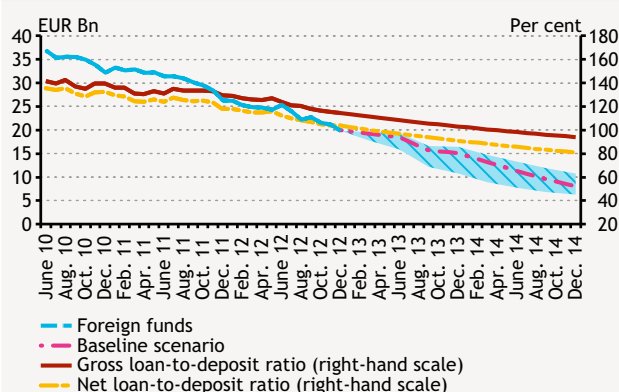
The internal structure of swap exposure shifted towards longer-term transactions concluded with members within corporate groups. The decline in swap exposure took place in parallel with an increase in the average residual maturity of the portfolio from 1.4 years to 1.8 years and an increase in the proportion of transactions concluded between intra-group members (Chart 58). This is partly attributable to the withdrawal of funds by parent banks and partly to the FFAR regulation introduced in 2012. In addition, the average maturity of swap transactions may be increased by the MNB swap transactions concluded in the third pillar of the FGS,

Chart 58
Ratio of transactions with residual maturities of up to one year and transactions concluded with group members within the gross swap exposure of the banking sector



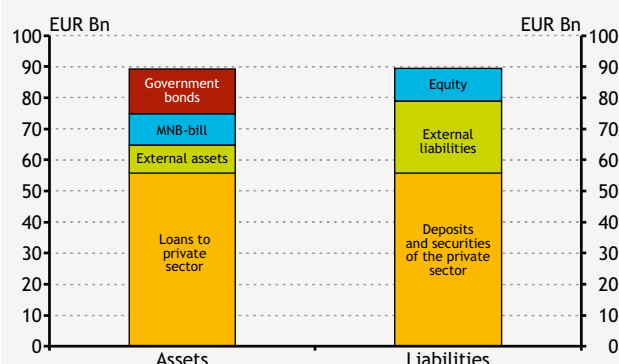
Source: MNB.

Chart 59
Foreign funds of the banking system and the loan to deposit ratio



Note: The blue area is the forecast band of the external funds.
Source: MNB.

Chart 60
Schematic balance sheet of the banking sector at a 100% loan-to-deposit ratio



Source: MNB.

which may result in a further improvement in the value of the FFARs.

As a result of the Bank's FGS instrument, the withdrawal of foreign funds accelerates, resulting in a decline in vulnerability. Based on the forecast of the private sector's net position and banks' MNB bill holdings, in the baseline scenario, the external funds of the banking sector decline by nearly EUR 9.5 billion until end-2014. At the same time, the Bank's FGS instrument aims at the repayment of approximately another EUR 2,2 billion short term external funds of banks,¹⁰ reducing dependence on foreign funds and thus also reducing vulnerability. As the withdrawal of funds related to the central bank swap transactions reduces the two-week MNB bills on the assets side, this is not considered harmful. The total outflow of EUR 11.7 billion will be nearly equally divided between this year and next year (Chart 59). Assuming that banks repay only the amount of foreign funds corresponding to their incoming foreign exchange liquidity, the outflow of funds may be lower, i.e. a total EUR 8.5 billion over two years. In event that, in addition to the liquidity originating from loan repayment and deposit inflows, banks also spend their existing liquidity reserves on the withdrawal of foreign funds, the external funds of the banking sector may decline by more than EUR 12.5 billion over two years (Chart 59). Following the forecasted outflow of funds, the external funds of the banking sector may fall to around EUR 8 billion in two years in the baseline scenario.

The banking sector's loan-to-deposit ratio may decline below 100 per cent in the coming two years, but dependence on external funds will not cease to exist. Based on the expected credit and deposit paths, over the two-year time horizon the banking sector's gross loan-to-deposit ratio may fall below 100 per cent, while the net loan-to-deposit ratio (excluding loan loss reserves) may decline to 80 per cent (Chart 59). At the same time, banks are spending a considerable portion of their funds on the financing of central bank bills and government securities (Chart 60). If the banking sector maintains its exposure to the fiscal sector and the MNB in the future as well, dependence on foreign funds will cease to exist in parallel with a loan-to-deposit ratio well below 100 per cent.

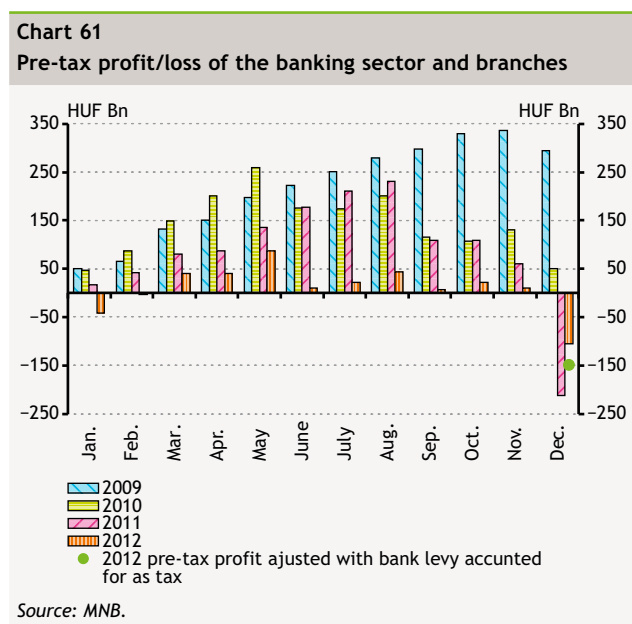
¹⁰ Assuming the decline in external debt will evenly distributed between the changing the currency composition of government debt and the swap transaction with the banking sector.

6 Profitability of the banking sector

– The practice of passing on costs may be prevented by regulatory instruments as well as stronger competition

The pre-tax profit of the banking sector continues to be negative, although the magnitude of the loss has decreased. The asymmetry observed in profitability continues to be extremely high; the three most profitable banks account for 60 per cent of the banking sector's gross profit. At the same time, the loss is also highly concentrated, as three banks are responsible for 82 per cent of it, while the profit of the majority of banks is around zero. The high level of the net interest margin indicates that banks are passing on their loan losses and the bank levy to performing retail customers, while decline in the costs of foreign funds is not observed in the pricing of household mortgage loans. The abuse of banks' market power should be reduced by increasing price competition and making bank switching easier, as the high interest margin is undesirable over the longer term in terms of financial stability.

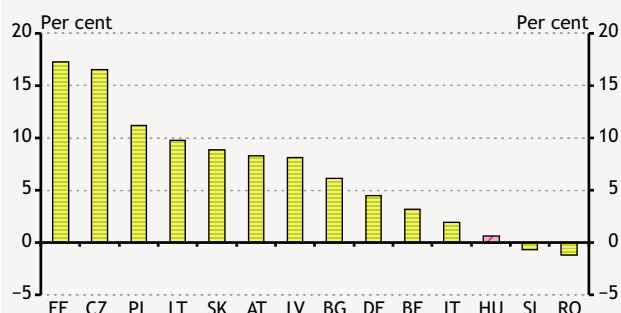
Although the capital adequacy ratio is high at system level, capital buffers are concentrated, while internal capital accumulation is weak at the majority of banks.



The loss of the banking sector declined compared to the previous year, but remains significant. At end-December 2012 the cumulative pre-tax loss of the banking sector amounted to HUF 105 billion, which is better than the loss of HUF 212 billion in the previous year (Chart 61). Since 2011, banks have been allowed to book the bank levy the same way as the corporation tax, thus reducing only their after-tax profit. No bank used this method in 2011, but several chose it in 2012. If this item was also taken into account as expenditure, the sector's income would have been -148 billion forints in 2012. The pre-tax 12-month rolling profitability indicators are in negative territory: at end-December ROE was -3.8, while ROA was -0.4 per cent. In international comparison, profitability indicators continue to signal a competitive disadvantage (Chart 62).

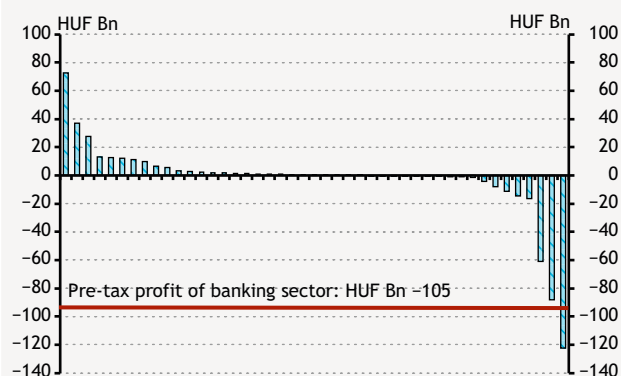
The asymmetry observed in profitability is high. The three most profitable banks account for 60 per cent of the banking sector's gross profit. At the same time, the loss is also remarkably concentrated, as three banks are responsible for 82 per cent of it, while the profit of the majority of banks is around zero, and thus the asymmetry is strong. The pre-tax loss of HUF 105 billion of the banking sector is the result of profits amounting to HUF 227 billion and losses amounting to HUF 332 billion (Chart 63).

Chart 62
After-tax ROE indicator of selected countries
(June 2012 consolidated data)



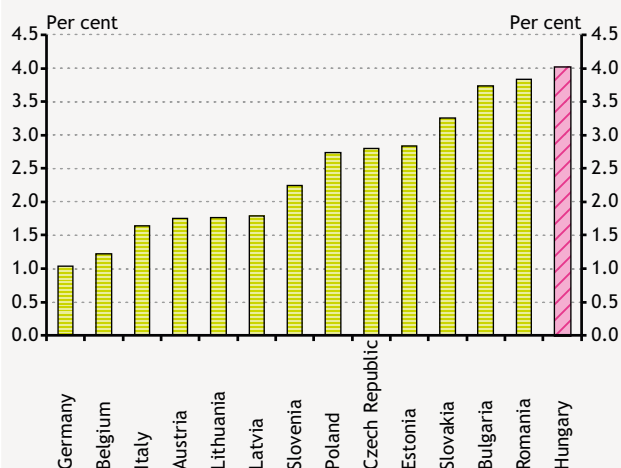
Note: Annualised values based on June 2012 consolidated data.
Source: ECB CBD database.

Chart 63
Pre-tax loss and profit of banks and branches at the individual level
(December 2012 data)



Source: MNB.

Chart 64
Interest income as a proportion of the balance sheet total of selected banking sectors at end-June 2012



Note: Annualised values based on June 2012 consolidated data.
Source: ECB CBD database.

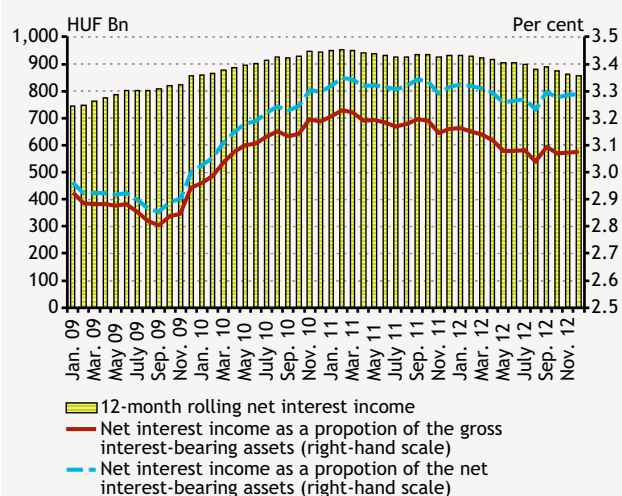
A significant portion of the income stems from net interest income, while trading income declined considerably. Interest income continues to be the largest and at the same time the most stable source of income in the banking sector. The ratio of profit from net fees and commissions remained unchanged, while the profit from trading income declined significantly: due to individual bank reasons, losses on investment-purpose securities, the revaluation of foreign exchange assets and derivative transactions resulted in material losses. Operating costs remained practically unchanged. In 2011 the magnitude of the bank levy was not significant, because banks could reduce the amount of levy to be paid by their losses suffered in the early repayment scheme. In 2012, however, the bank levy meant an expenditure of HUF 64 billion for the banking sector. Adding to it the credit institutions special tax recorded as a tax, the total amount paid was HUF 106 billion.

The ratio of the net interest income of the domestic banking sector to total assets is the highest in regional comparison. In the case of domestic banks, a much greater portion of revenues is related to interest income than in more developed states, where net fees and commissions play a much more important role. Therefore, for lack of alternative sources of income, banks are interested in maintaining the high interest income over the long term. This may stabilise profitability in the short run, but over the long term the deteriorating portfolio quality and the increasing interest income that compensates it result in an unsustainable position (Chart 64).

The net interest margin is high, indicating that banks pass on their loan losses and the bank levy to their performing retail customers. Total loan loss provisioning declined last year. While net interest income over gross interest-bearing assets containing total outstanding loans declined, net interest income over net interest-bearing assets adjusted for loan losses remained high (Chart 65). Accordingly, the interest burden on performing loans increased, as banks passed on a significant portion of their missing income on non-performing loans and the bank levy to the performing debtors, primarily to the ones with foreign currency-denominated mortgage loans. Thus, the banking sector exerts a strong procyclical effect that restrains economic growth not only in the case of new corporate loans but also in the case of outstanding household mortgage loans.

Decline in the costs of foreign funds can not be observed in the pricing of household mortgage loans. Comparing the interest rate level of outstanding Swiss franc-denominated household loans and the sovereign CDS

Chart 65
Net interest income as a proportion of the gross and net interest bearing assets in the banking sector

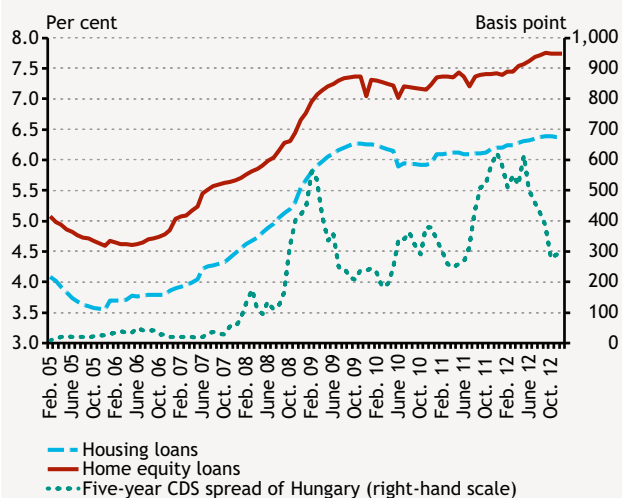


Note: Time series calculated from aggregate data of individual banks and branch offices.
 Source: MNB.

spreads – which play a key role in the financing of foreign exchange funds originating from abroad – may also indicate banks’ abusing their market power: the decline in CDS in 2012 H2 did not appear in the average interest rate on outstanding Swiss franc-denominated loans (Chart 66); moreover, this interest rate continued to increase during the year.

The abuse of banks’ market power should be reduced by increasing price competition and making bank switching easier. In the case of new household loans, transparency has already been solved. At the same time, in the case of the outstanding – mainly foreign currency-denominated – mortgage loans, debtors are practically tied to their bank. Therefore, banks can include elements in the pricing (increase in risk costs) that could not be included under normal circumstances. This could be prevented by the strengthening of competition, which could be attained by a further easing of loan refinancing (Box 7).

Chart 66
Interest rate on CHF-denominated household loans and Hungary’s 5-year CDS spread



Sources: MNB and Bloomberg.

Box 7

Stimulating competition in mortgage lending and facilitating bank switching

In the mortgage loan market, in addition to the low volume of new lending another problem is the low intensity of competition for existing customers. As a result of this, customers ‘get stuck’ in high-interest loans despite the fact that the CDS spread and the forint base rate have declined considerably since last year. This reduces household consumption and at the same time hinders the revival of economic growth. Moreover, due to the lack of loan refinancing, most of the loans outstanding are products whose interest rate can be unilaterally modified, as the rules of transparent pricing introduced in 2012 do not apply to the loans granted prior to the entry into force of these rules.

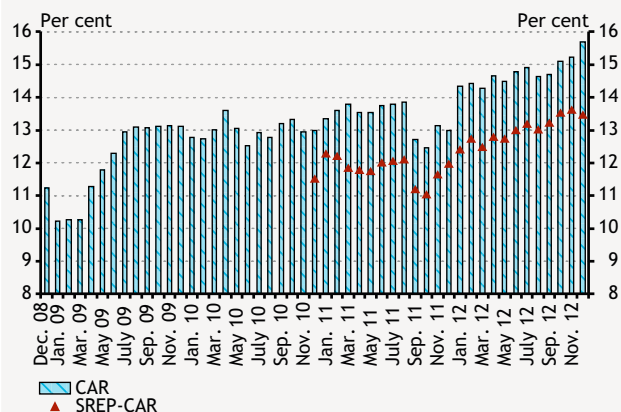
The above situation might improve if competition in loan refinancing started among banks for existing, performing customers. At present, however, competition is hindered by several factors, which are related either to the ending of the 'old' loan contract or taking out the 'new' one.¹¹

- In ending the 'old' loan, the most important cost is the prepayment fee, the maximum amount of which is determined by law. Accordingly, the prepayment fee of a housing mortgage loan must not exceed 1 per cent, or 1.5 per cent if the loan is financed with a mortgage bond. It is important, however, that this limit does not apply if the prepayment is financed from a loan from another bank: in this case the fee may even be 2 per cent, or 2.5 per cent in the case of financing with a mortgage bond. While the prepayment fee of 1-1.5 per cent is considered rather low in international comparison and could be justified in terms of banking operations as well, there is no economic argument for 'punishing' loan refinancing. It would be expedient to terminate this regulation that limits competition.
- For subsidized-rate loans, another cost of ending the old loan is that it may typically entail the loss of the state subsidy. Agreeing with the proposal of the Hungarian Competition Authority, we believe that the introduction of the portability of state subsidy should be examined. Likewise, it could be expedient to examine all 'state' schemes from the aspect of competition, including, for example, whether loans can be refinanced in parallel with exchange rate fixation.
- Upon 'new' borrowing, it is not rational for banks, which are interested in customer acquisition, to charge too high costs, so in this area there is no reason for regulatory intervention. At the same time, a regulatory reduction of the maximum notary's fee could be subject to consideration, as this is a significant item (amounting to as much as HUF 50-80 thousand, depending on the amount of the loan) that can be a material obstacle to loan refinancing and that is charged by agents that belong to neither the competitive nor the public sector.
- The majority of mortgage loans contain a tie-in, i.e. the customer must also have a current account at the given bank. The portability of current accounts should be arranged as is the case with phone numbers.
- Based on international experience, competition in the mortgage loan market can be facilitated by credit brokers (agents), who make the comparison of various market participants' offers and the finding of the best offers easier. However, the relevant experience in Hungary has been unfavourable: professionally and ethically objectionable activities of credit brokers contributed to the gravity of the crisis. The legislation adopted at end-2009 as a reaction to the problematic activity of agents and criticised by many amended the relevant rules considerably, also resulting in a corresponding realignment of the market. It could be expedient to examine whether agents' activity can be developed in a way that intermediaries contribute to stronger competition without the recurrence of the pre-2008 consumer protection and financial stability anomalies.
- In connection with the above, similarly to liability insurance, the idea of organising companies that arrange for the redemption of mortgage loans among banks may arise. For example, for 1 month every year it would be possible to change not only insurance companies, but banks as well free of charge.

The profitability outlook has deteriorated tangibly. The future profitability potential of the banking sector is reduced by several factors. The interest rate level, which is lower as a result of central bank steps, reduces the income that can be obtained on sight deposits collected practically without interest. The contribution of the transaction tax to profitability is also negative. Although banks can pass on this tax and most of them do so, it is usually not charged for purchases by card. In addition, earning power is significantly impaired by the increase in non-performing loans as well as the decline in lending activity.

¹¹ Obviously, the best stimulus to competition would be if banks offered cheap loans with feasible conditions. However, this paper does not discuss the stimulation of lending, which may be the subject of a separate analysis.

Chart 67
CAR and SREP CAR of the banking sector

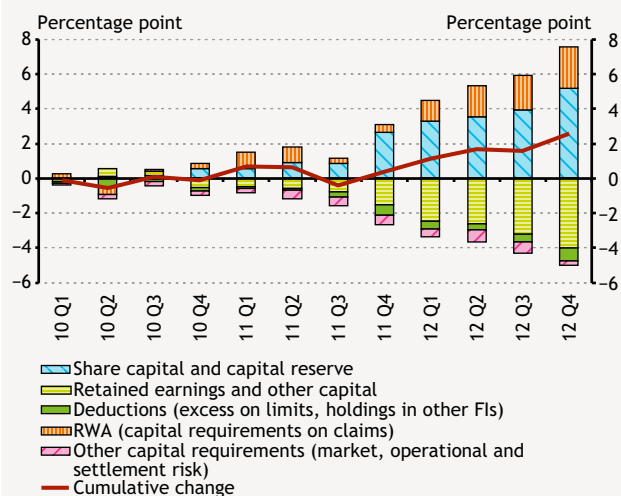


Source: MNB.

The capital adequacy ratio is extremely high, showing strong shock-absorbing capacity at the banking sector level. The CAR increased to 15.7 per cent by end-2012 (Chart 67). This rise is basically attributable to capital increases and a decline in outstanding loans, whereas the profit loss reduced the magnitude of this rise (Chart 68). The ratio is also influenced by exchange rate volatility; depreciation reduces the ratio.

Although the sector-level indicator is nearly double the regulatory minimum, capital buffers are concentrated. The banks with the five largest buffers account for more than 42 per cent of the banking sector’s capital buffer. While the total regulatory capital buffer exceeds the minimum capital requirement by 96 per cent, in the case of the SREP it is 41 per cent, indicating a more stretched, but still-strong capital position (Chart 69).

Chart 68
Factors affecting the cumulative changes in the capital adequacy ratio of the banking sector



Source: MNB.

Financial enterprises continue to suffer significant, albeit declining losses. The pre-tax loss of the sector amounted to HUF 34 billion, resulting from the HUF 21 billion pre-tax loss of bank-owned financial enterprises and the pre-tax loss of HUF 13 billion of non-bank enterprises (Table 4). Financial enterprises restrained their activity considerably; as a result, the deteriorating portfolio is steadily making losses. Some banks decided to merge their affiliated firms, and accordingly this market segment is expected to shrink further.

The pre-tax profit of cooperative credit institutions was twice as high as in the previous year, falling slightly behind the pre-crisis level. The pre-tax profit of cooperative credit institutions was HUF 10.5 billion, nearly double the profit of the previous year. The source of this growth is an increase in interest income and a drop in loan loss provisioning. Provisioning is lower in this sector due to the traditionally smaller proportion of corporate and household lending and lending in foreign currency. The profitability ratio of the sector is much better than that of the banking sector; ROE amounted to 8.2 per cent (Chart 70).

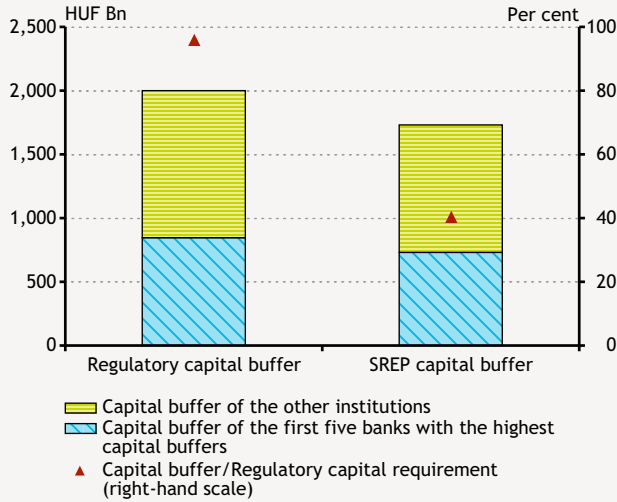
Table 4
Pre-tax profit/loss of financial enterprises

(HUF Bn)

	Financial enterprises owned by banks	Financial enterprises without bank ownership	Total sector
2008	18	26	43
2009	-14	5	-10
2010	-40	-3	-43
2011	-39	-15	-54
2012	-21	-13	-34

Source: MNB.

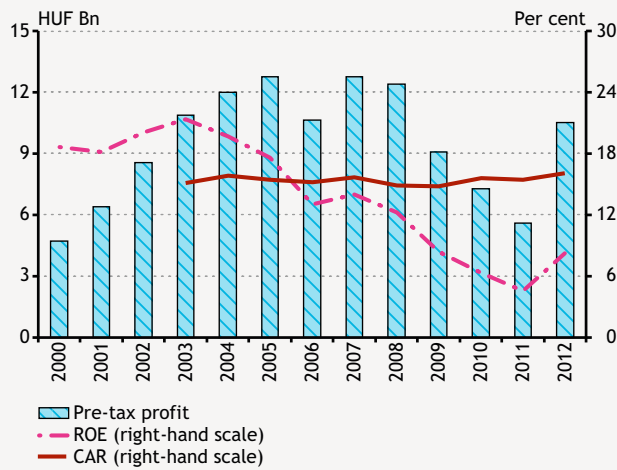
Chart 69
Capital buffer of the banking sector at end-2012



Source: MNB.

The capital adequacy ratio of cooperative credit institutions is adequate at the sector level, but conceals strong asymmetry. The 16 per cent capital adequacy ratio of the cooperative credit institutions sector at end-2012 indicates an adequate capital position at the aggregate level for the sector. However, similarly to the banking sector, it masks strong asymmetry. At present, the sector's SREP CAR of 12.3 per cent also indicates strong shock-absorbing capacity (Chart 70).

Chart 70
CAR and ROE indicators and pre-tax profit of cooperative credit institutions



Source: MNB.

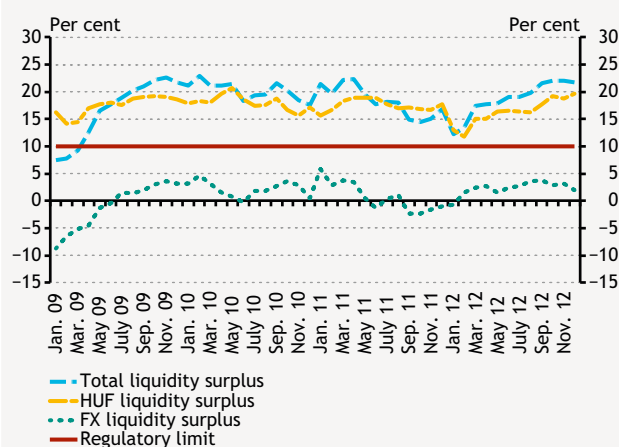
7 Liquidity and solvency stress test – Banking sector stress tests continue to indicate adequate liquidity, but in respect of capital adequacy they indicate deterioration in shock-absorbing capacity

The result of the liquidity stress test shows an adequate liquidity position. The liquidity reserve of the banking sector is adequate even in the case of a low-probability, extremely negative scenario; thus the value of the Liquidity Stress Index is low. At the same time, most of the liquidity reserves are available in forints; therefore, in a protracted stress situation the smooth functioning of the FX swap market is indispensable.

The significant losses in 2012 were only partly offset by the capital increases implemented so far. Accordingly, the banking sector's initial capital position and thus its shock-absorbing capacity have weakened markedly. The Solvency Stress Index also confirms this deterioration; its level indicates perceptible risks. In the stress scenario that also takes account of a higher loan loss coverage of non-performing loans than the present one, three major banks have a capital requirement over the two-year time horizon. At the same time, the banking sector's total capital requirement of HUF 62 billion is manageable, especially if parent banks' commitment observed to date is taken into consideration.

7.1 Based on the stress test, the liquidity shock-absorbing capacity of the banking sector is adequate

Chart 71
30-day liquidity surplus as a proportion of balance sheet total by currencies

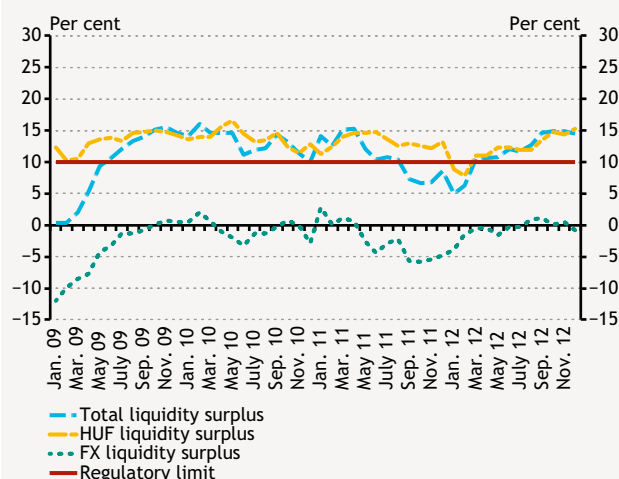


Source: MNB.

The short-term liquidity of banks is mostly denominated in forints and its level is adequate. The level of 30-day forward-looking liquidity surpluses rose steadily until September, before stagnating above the regulatory limit of 10 per cent to total assets. The banking sector's liquidity surplus is much higher than the required level, although it is mainly denominated in forints. Following an increase until September, the FX liquidity surplus has slightly declined, however it is in positive field (Chart 71).

The stressed liquidity surplus of banks also exceeds the regulatory minimum, although it consists of only forint reserves. The 30-day forward-looking stressed liquidity surplus increased in 2012, and its magnitude was above the required level. After stress, practically only forint liquidity remains, the foreign exchange surplus is around zero at the banking sector level (Chart 72). As a result, in a protracted stress situation the smooth functioning of the swap market is of key importance.

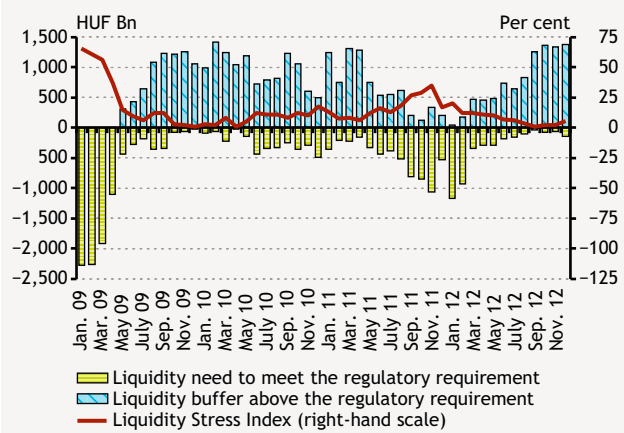
Chart 72
30-day stress liquidity surplus as a proportion of balance sheet total by currencies



Source: MNB.

The Liquidity Stress Index is at a low value; liquidity buffers increased. The Liquidity Stress Index shows to what extent the liquidity buffer of banks falls short of the regulatory limit of 10 per cent to total assets, and the number of banks experiencing a shortfall. Taking account of the extent of the deviation from the regulatory limit as well, and then weighted by the balance sheet total of banks, the value of the index amounts to 6.4 per cent. This means that if the stress scenario took place, the banking system would be only slightly below the regulatory minimum. It is favourable that no bank would fall below zero; in other words each bank would remain liquid even in a stress situation (Chart 73). It is important to emphasise that there was an increase in stressed liquidity buffers aggregated by banks, while shortfalls declined during the year.

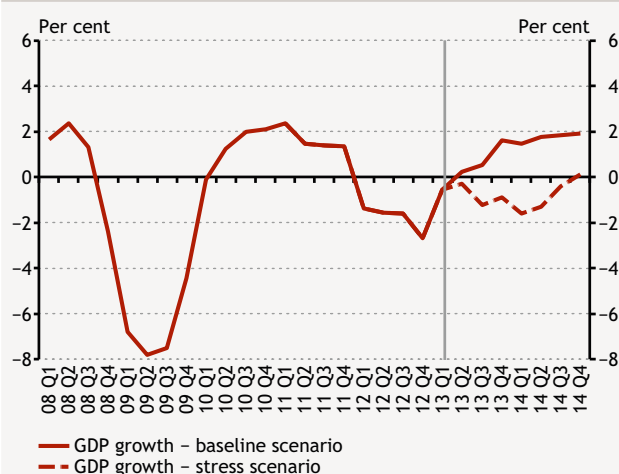
Chart 73
Liquidity Stress Index and banks' liquidity surplus or deficit relative to the regulatory level in the stress scenario



Note: The LSI is the sum of normalised liquidity deficits relative to the 10 per cent level, weighted by the balance sheet total. The higher the value of the index, the higher the liquidity risk in the stress scenario.
 Source: MNB.

7.2 In case of a stress, a limited total amount of capital injection may be needed by several banks due to the low initial level of capital

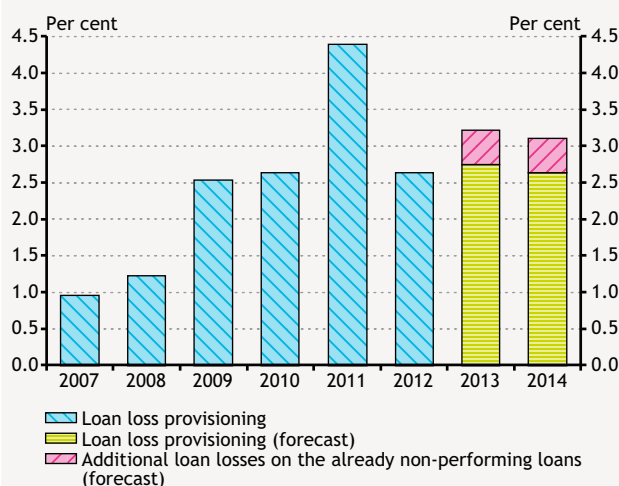
Chart 74
GDP growth rate along the scenarios
(compared to the corresponding period of the previous year)



Source: MNB.

Significant economic downturn, exchange rate and interest rate shocks and loan loss coverage of non-performing loans exceeding the current level are assumed in the stress scenario of the solvency stress test. The current macroeconomic baseline scenario is identical to the forecast published in the March issue of the Quarterly Report on Inflation. While the baseline scenario outlines the most probable scenario, the stress scenario examines the consequences of a low-probability, severe but plausible series of events over the next two years. In the current stress test, similarly to the one in November 2012, the stress size was determined on the basis of expert judgement. In the two years, economic growth is 4.3 percentage points below the baseline scenario (Chart 74). Meanwhile, the exchange rate of the forint against the euro depreciates by 15 per cent right at the beginning of the time horizon under review, and this difference remains unchanged in both years. The interest rate level, i.e. both domestic and external financing costs, moves 300 basis points upwards and remains there for the whole period. As a result of more severe risks and worsening growth outlook, companies cut the number of employees, leading to a persistent deterioration in households' income position. Finally, loan loss coverage of non-performing loans exceeding the current one was taken into account.

Chart 75
Loan loss rate for the corporate portfolio in the stress scenario

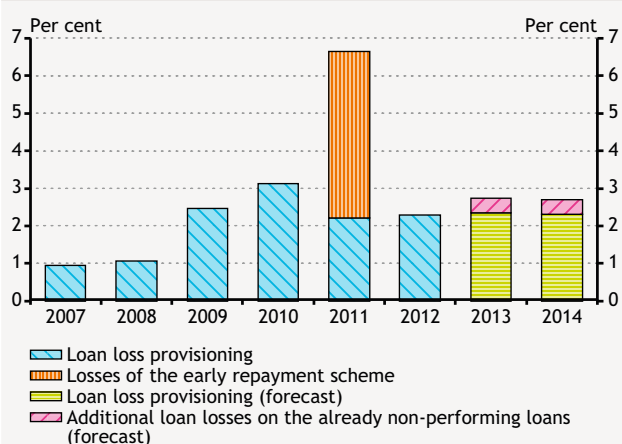


Source: MNB.

The weak profitability experienced last year is expected to remain. Profitability is forecasted using the econometric model presented in our earlier reports. Based on the experiences of the recent period, last year's weaker profitability is expected to remain. Accordingly, in the stress scenario, depending on the specific bank in question, earnings before loan losses amount to 50–90 per cent of the average of the last three years. As opposed to our earlier practice, we did not assume the termination of the bank levy. At the same time, the transaction tax is assumed to be passed on fully to customers.

Due to the credit portfolio deterioration, significant loan loss provisioning is expected in the stress scenario. The need for loan loss provisioning stems from two sources: the expected loss on loans that become non-performing and

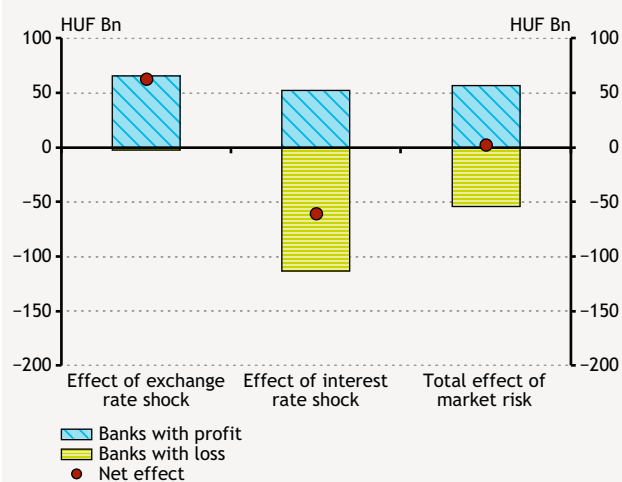
Chart 76
Loan loss rate for the household portfolio in the stress scenario



Source: MNB.

additional provisioning on the outstanding non-performing portfolio. In the case of corporate loans, the stress scenario includes a higher ratio of loan loss to total corporate loans than in 2009-2010, the years with the most severe downturn in terms of growth during the crisis (Chart 75). However, the losses are lower than in 2011, a year which was considered to be an outlier. In the household portfolio, the programmes for foreign currency borrowers may mitigate deterioration in the coming period. Based on our expectations, 50 per cent of the still performing foreign exchange mortgage loan debtors may enter the exchange rate cap scheme, and thus in their case the eliminated exchange risk does not need to be taken into account over the forecast horizon. Accordingly, the probability of default (PD) and expected losses decline considerably in their case (Chart 76).

Chart 77
Market risk stress test impacts



Source: MNB.

In the stress scenario, a rise in government securities yields would have a significant negative effect on profitability, but it is offset by the profit obtained on the open exchange rate position. In the market risk stress test, we look at the impact of interest and exchange rate shocks through the immediate revaluation of market exposures. In the case of the interest and exchange rate shocks as well, the average difference between the baseline and stress scenarios was used as the size of the shock. The resulting profit impact was evenly distributed over the two-year horizon. A 300 basis point parallel upward shift of the yield curve results in a HUF 60 billion loss at the banking sector level, mainly due to the revaluation of the government securities portfolio (Table 5). In the stress scenario, the exchange rate depreciates by 15 per cent, which *ceteris paribus* (disregarding higher loan losses due to portfolio deterioration) boosts the profits of banks with foreign exchange surpluses, i.e. the majority of the banking sector, by approximately HUF 65 billion, and reduces the profits of

Table 5
Impact of main risks on the profit of the banking sector in the stress test, over a two-year time horizon

	Main components of losses of banking system in eight quarter horizon (HUF Bn)	
	Baseline scenario	Stress scenario
Loan losses on corporate and household portfolio	498	875
Loan losses on new non-performing corporate loans	264	382
Loan losses on new non-performing household loans	234	368
Additional loan losses on the already non-performing loans		125
Loan losses on local government portfolio	10	23
Exchange rate risk of open position		-63
Interest rate risk		60
Bank levy	234	234
Interest cost of the exchange rate cap scheme	28	45

Source: MNB.

Table 6
Stress test result with the 8 per cent regulatory capital

	Baseline scenario		Stress scenario	
	End of first year	End of second year	End of first year	End of second year
Capital need of banks (HUF Bn)	0	0	6	62
Capital buffer of banks above 8 per cent CAR (HUF Bn)	1,331	1,518	969	889
Total capital buffer (HUF Bn)	1,331	1,518	963	827

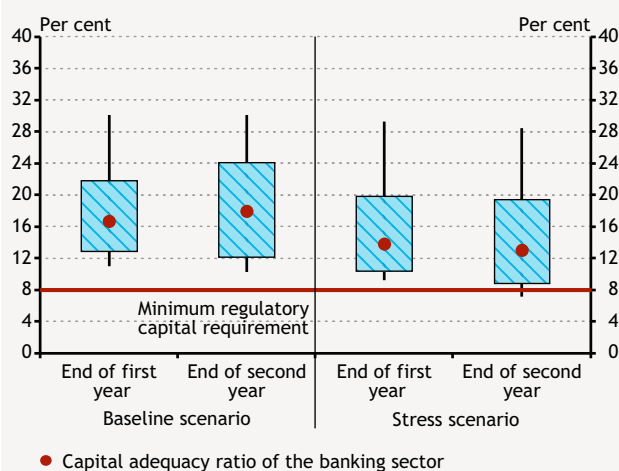
Source: MNB.

Table 7
Stress test result with 9 per cent expected capital adequacy ratio

	Baseline scenario		Stress scenario	
	End of first year	End of second year	End of first year	End of second year
Capital need of banks (HUF Bn)	0	0	31	127
Capital buffer of banks above 9 per cent CAR (HUF Bn)	1,177	1,365	828	789
Total capital buffer (HUF Bn)	1,177	1,365	797	662

Source: MNB.

Chart 78
Distribution of the capital adequacy ratio based on number of banks



Note: Vertical line: 10-90 per cent range, rectangle: 25-75 per cent range.
Source: MNB.

banks with forint surpluses by HUF 3 billion in aggregate through the total open FX position (Chart 77).

As a result of massive capital injections by parent banks and strong balance sheet adjustment, every bank can meet the regulatory minimum level of 8 per cent. Domestic banks received further significant capital injections from their parent banks, but the 2012 losses were only partly offset. At the same time, the capital position was improved by a decline in domestic banks' loans outstanding. Looking ahead, a capital injection in February and an expected decline in loan losses at the banking system level will also improve the capital position. As a result of all these effects, there is no need for additional capital in the baseline scenario (Tables 6 and 7).

In a stress situation, however, due to the less favourable initial capital position and the deteriorating profitability outlook, the capital requirement increased, but its size remains manageable. In the first year of the stress period, one bank would need a capital injection to meet the regulatory minimum. In the case of a persistent stress, however, it poses a risk that three major institutions may need capital injections. Nevertheless, the capital need of HUF 62 billion is manageable, especially taking account of parent banks' commitment shown to date. However, due to the increasing capital need and major banks' capital shortage, our Stress Test Index also indicates higher risk than before.

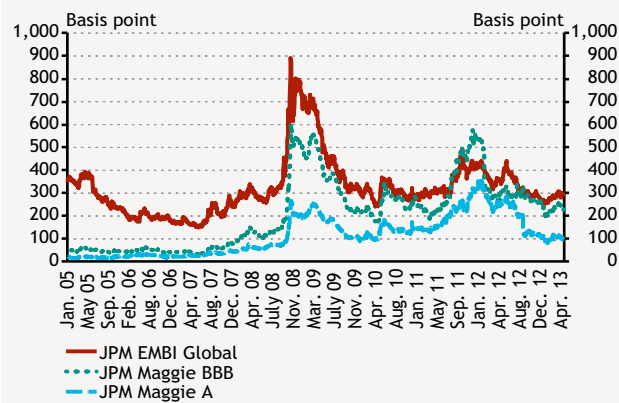
Although average capital adequacy is satisfactory, the aggregate indicator conceals significant asymmetry. The capital adequacy ratio of the banking sector is robust, reaching 18 per cent by the end of the two years in the baseline scenario (assuming no dividend payment) and 13 per cent in the stress scenario (Chart 78). However, this seemingly favourable indicator conceals asymmetry: the capital adequacy ratios of individual institutions are dispersed in a wide range by the end of the two-year stress period. Furthermore, poor performers include three major institutions as well.

Appendix: Macroprudential indicators

1 RISK APPETITE

Chart 1

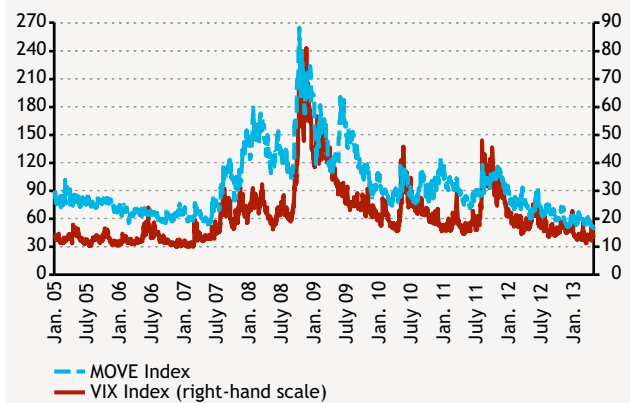
Primary risk indicators



Source: Datastream.

Chart 2

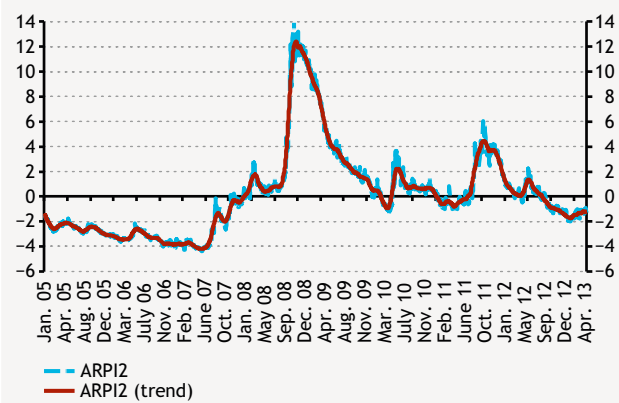
Implied volatility of the primary markets



Source: Bloomberg.

Chart 3

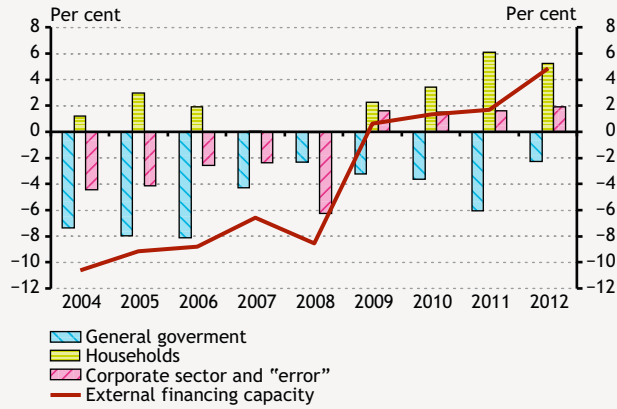
Dresdner Kleinwort indicator



Source: DrKW.

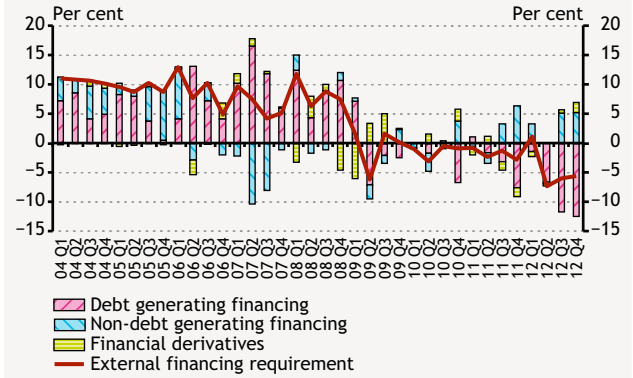
2 EXTERNAL BALANCE AND VULNERABILITY

Chart 4
Net financing capacity of the main sectors and external equilibrium as percentage of GDP



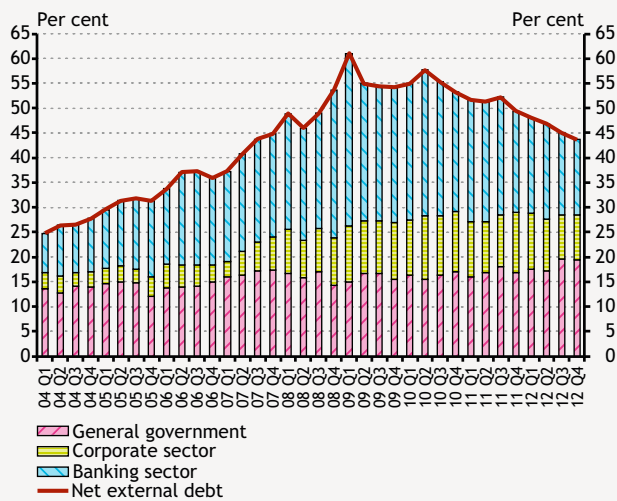
Source: MNB.

Chart 5
External financing requirement and its financing as percentage of GDP



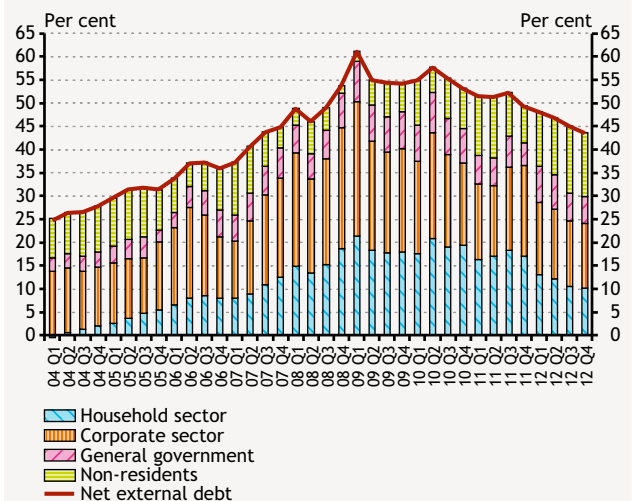
Source: MNB.

Chart 6
Net external debt as percentage of GDP



Source: MNB.

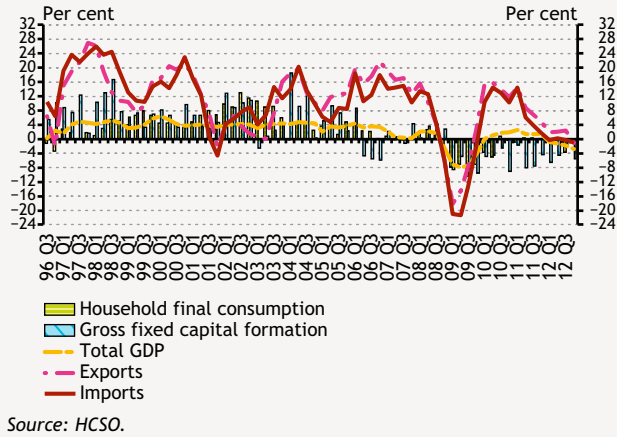
Chart 7
Open FX position of the main sectors as percentage of GDP



Source: MNB.

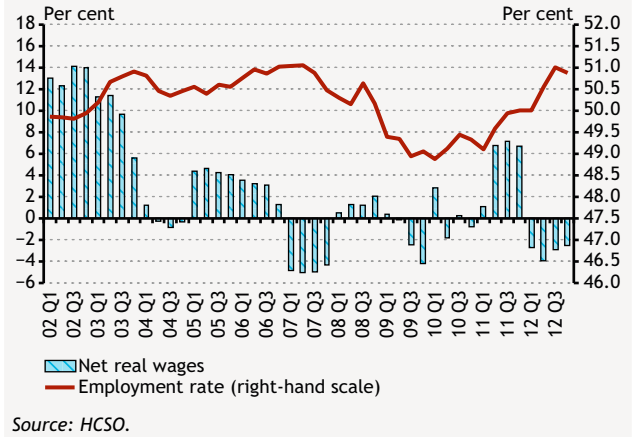
3 MACROECONOMIC PERFORMANCE

Chart 8
GDP growth and its main components
(annual growth rate)



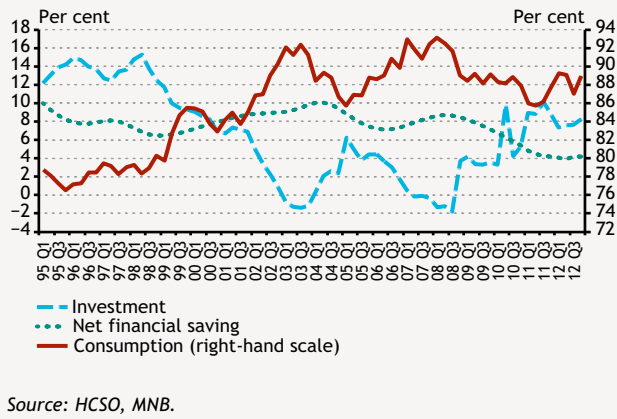
Source: HCSO.

Chart 9
Employment rate and net wage developments
(annual growth rate)



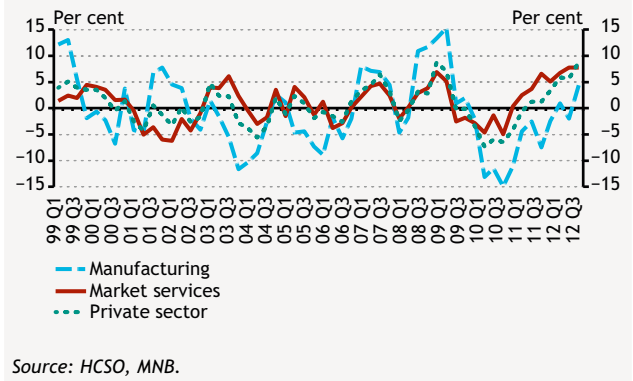
Source: HCSO.

Chart 10
Use of household income as a ratio of disposable income



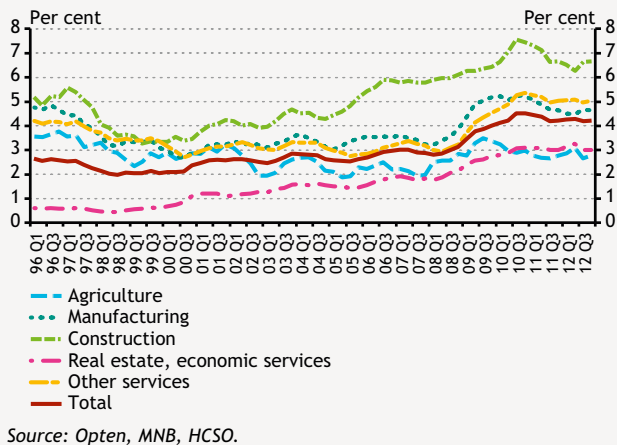
Source: HCSO, MNB.

Chart 11
Corporate real unit labour cost in the private sector
(annual growth rate)



Source: HCSO, MNB.

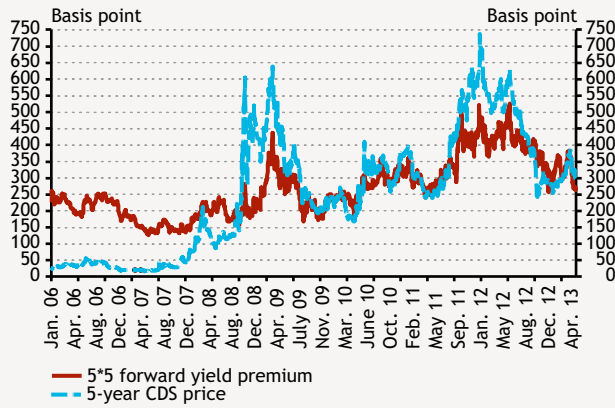
Chart 12
Sectoral bankruptcy rates



Source: Opten, MNB, HCSO.

4 MONETARY AND FINANCIAL CONDITIONS

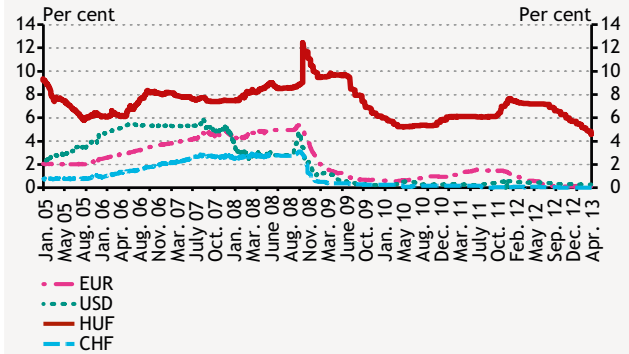
Chart 13
Long-term default risk and forward premium of Hungary



Source: Datastream, Reuters.

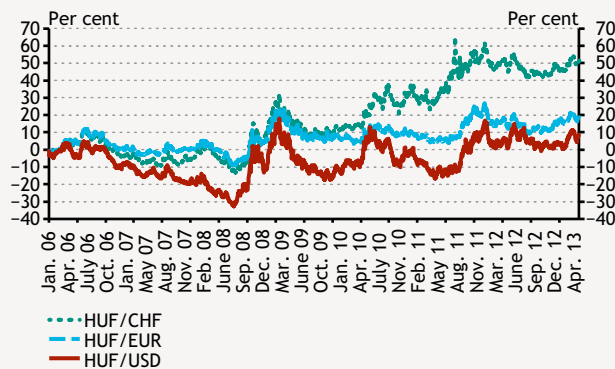
Chart 14
Three-month EUR, USD, CHF and HUF money market interest rates

(LIBOR and BUBOR fixing)



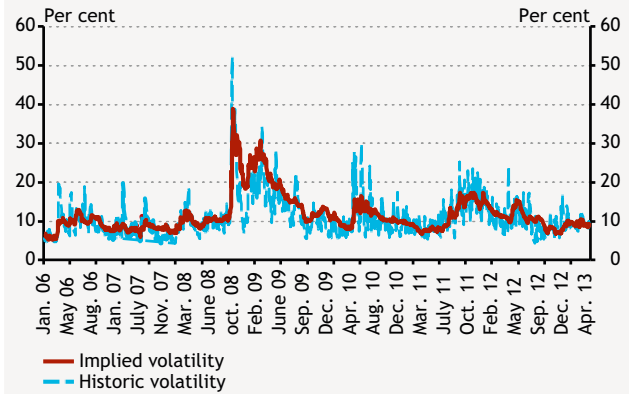
Source: Reuters.

Chart 15
HUF/EUR, HUF/USD and HUF/CHF exchange rates compared to January 3, 2005



Source: Reuters.

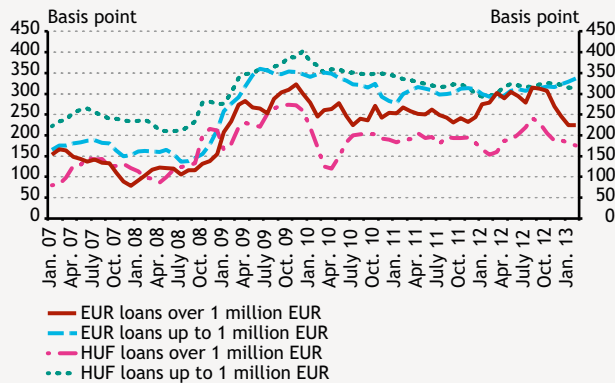
Chart 16
Volatility of the HUF/EUR exchange rate



Source: Reuters, MNB.

Chart 17
Interest rate premium of new loans to non-financial enterprises

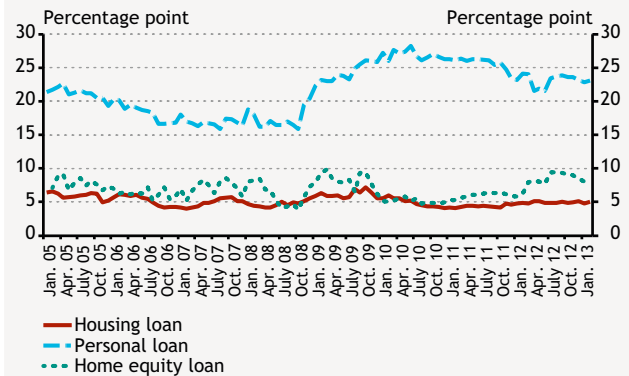
(over 3-month BUBOR and EURIBOR, respectively, 3-month moving average)



Source: MNB, EURIBOR.

Chart 18
Interest rate premium of new HUF loans to households

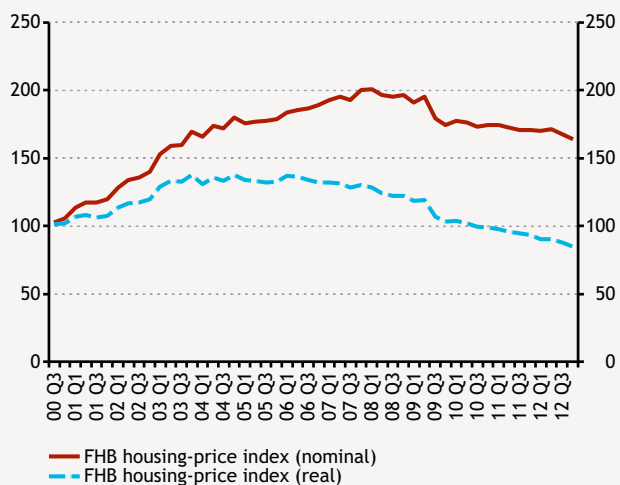
(over 3-month BUBOR)



Source: MNB.

Chart 19
FHB housing-price index

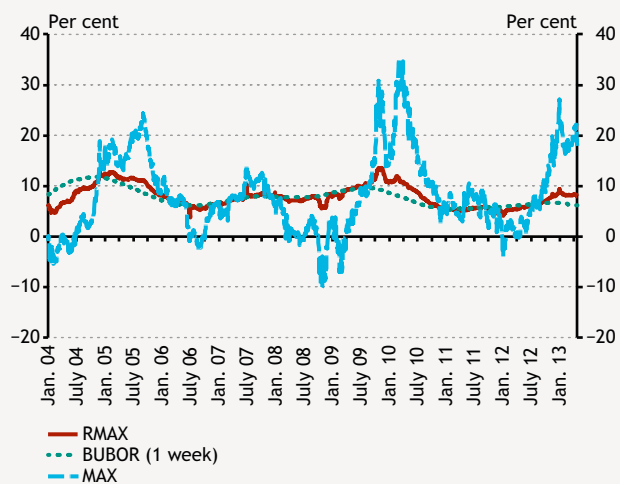
(2000 = 100)



Source: FHB.

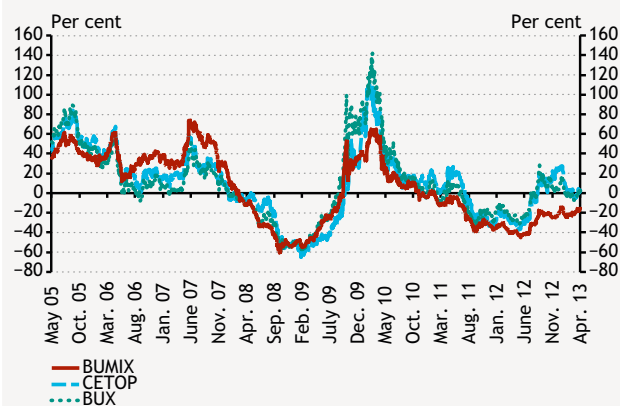
5 PRICES OF INSTRUMENTS

Chart 20
Annualised yields on government securities' indices and money markets



Source: ÁKK, MNB, portfolio.hu.

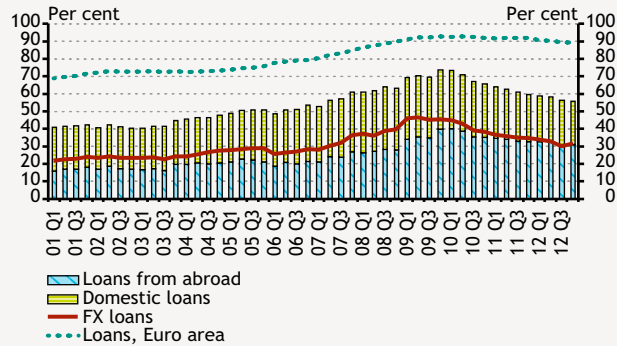
Chart 21
Annual yield of key Hungarian and Central and Eastern European stock market indices



Source: BÉT/BSE, portfolio.hu.

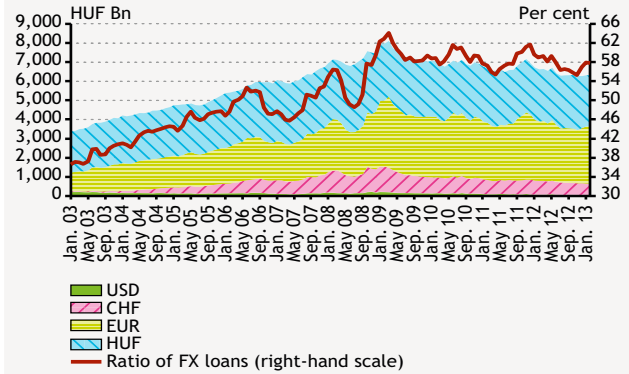
6 RISKS OF THE FINANCIAL INTERMEDIARY SYSTEM

Chart 22
Indebtedness of non-financial enterprises as a percentage of GDP



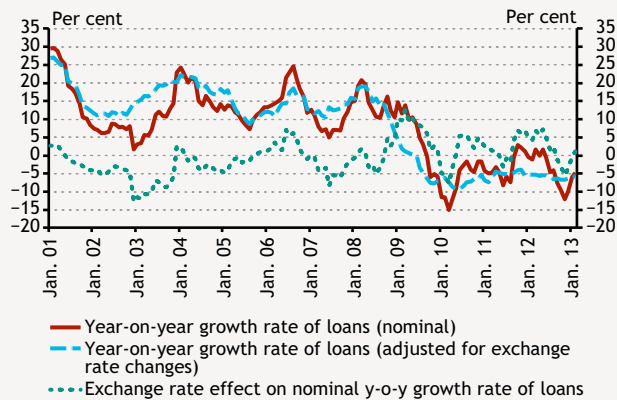
Source: MNB, Eurostat.

Chart 23
Denomination structure of domestic bank loans of non-financial enterprises



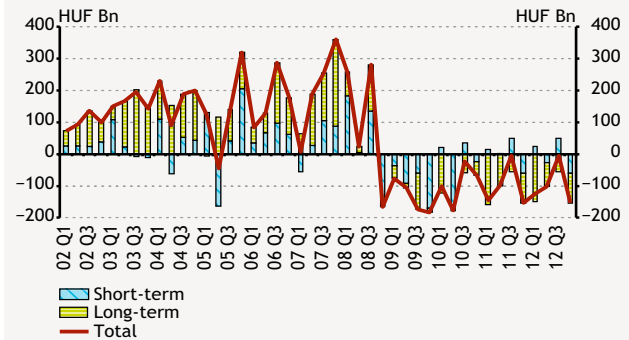
Source: MNB.

Chart 24
Annual growth rate of loans provided to non-financial corporations by domestic banks



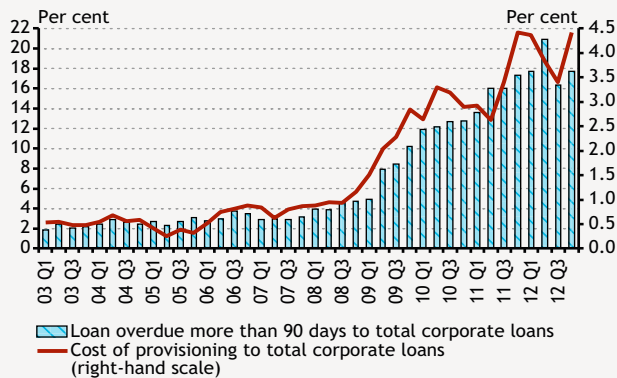
Source: MNB.

Chart 25
Net quarterly change of bank loan volumes of non-financial enterprises



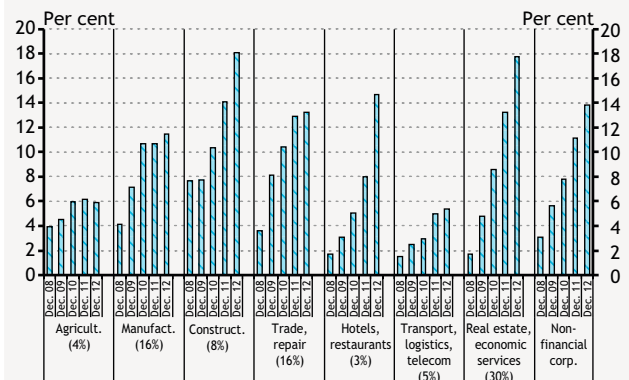
Source: MNB.

Chart 26
Quality of the corporate loan portfolio



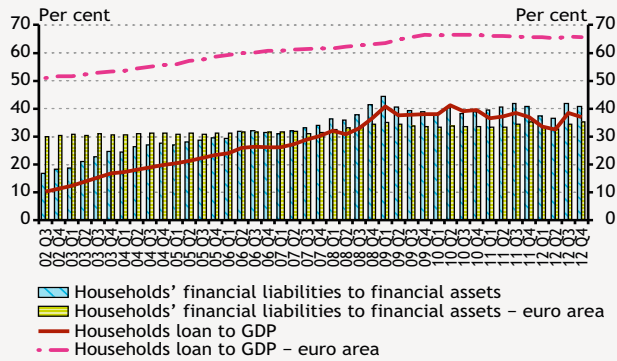
Source: MNB.

Chart 27
Provisioning on loans of non-financial corporations by industry



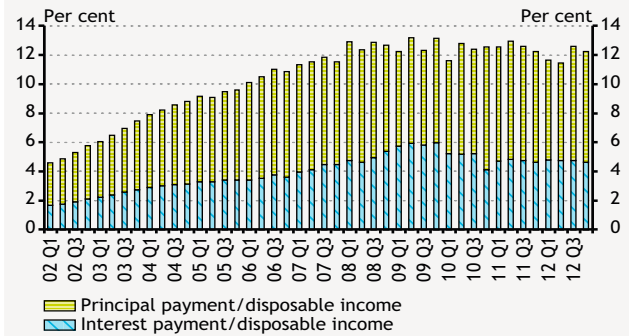
Source: MNB.

Chart 28
Indebtedness of households in international comparison



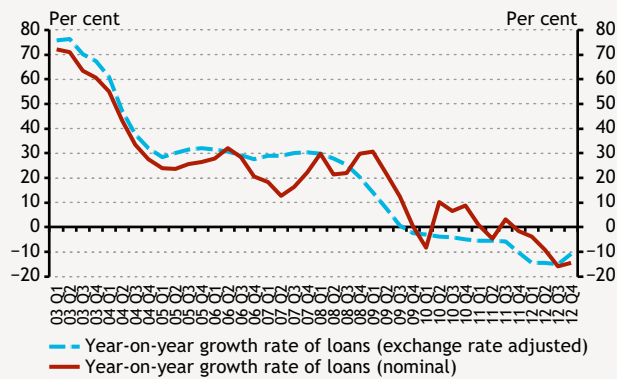
Source: MNB, ECB.

Chart 29
Debt service burden of the household sector



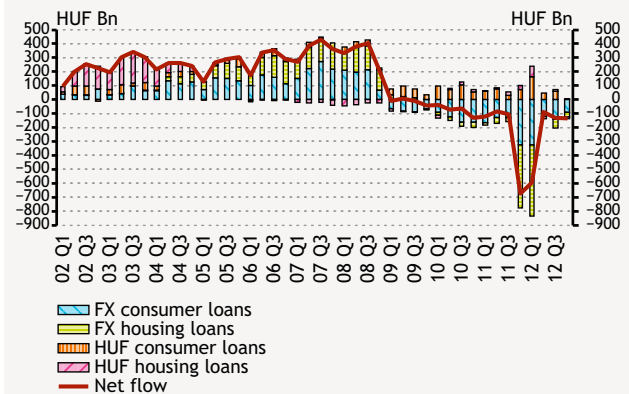
Source: MNB.

Chart 30
Annual growth rate of total household loans



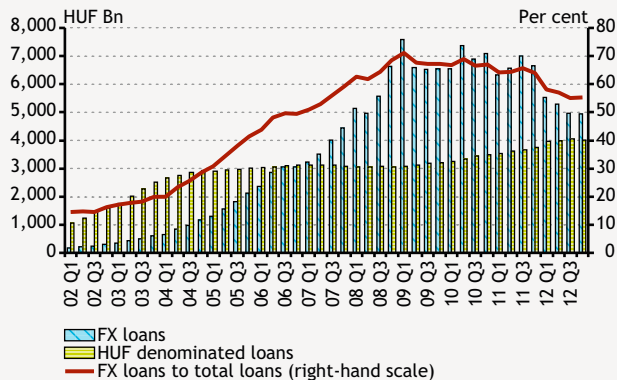
Source: MNB.

Chart 31
Net quarterly change of bank loan volumes of households by main products and currencies, adjusted for exchange rate changes



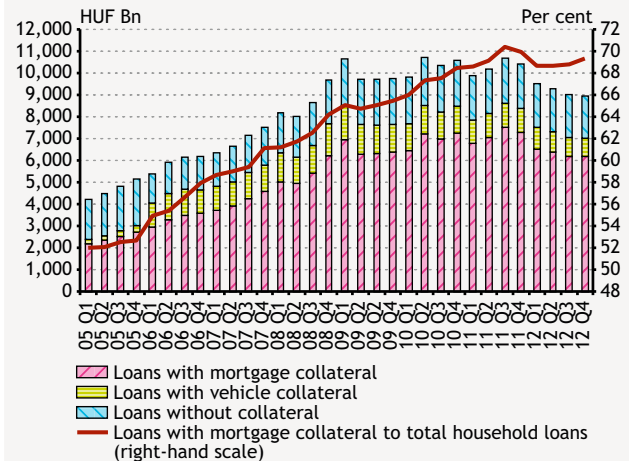
Source: MNB.

Chart 32
Household loans distribution by denomination



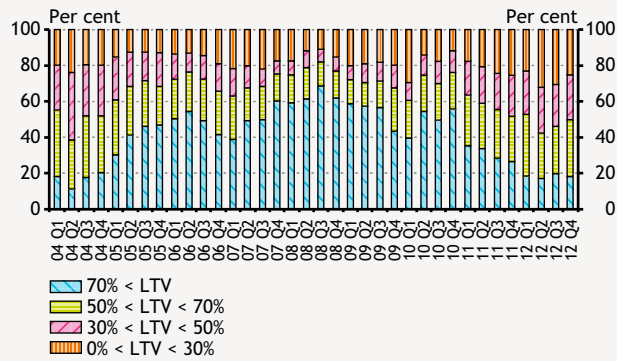
Source: MNB.

Chart 33
Household loans distribution by collateral



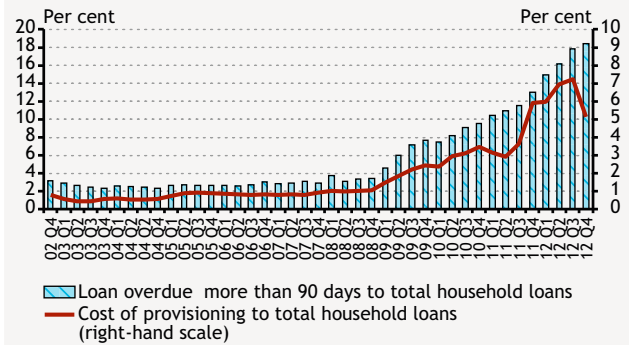
Source: MNB.

Chart 34
Distribution of new housing loans by LTV



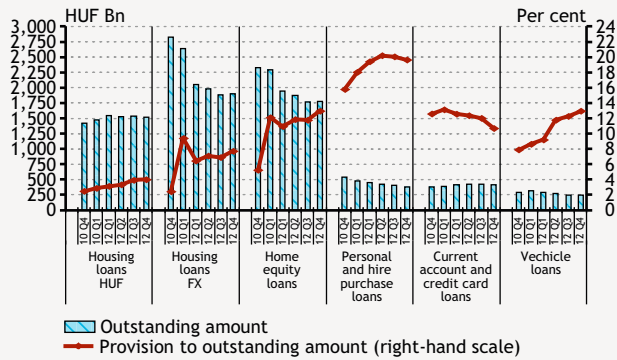
Source: MNB.

Chart 35
Quality of the household loan portfolio



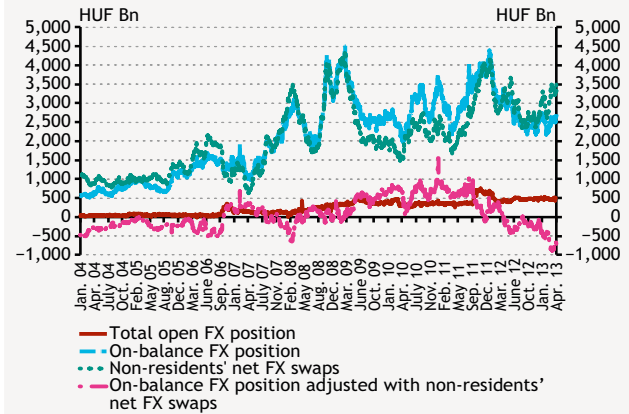
Source: MNB.

Chart 36
Provisioning on household loans



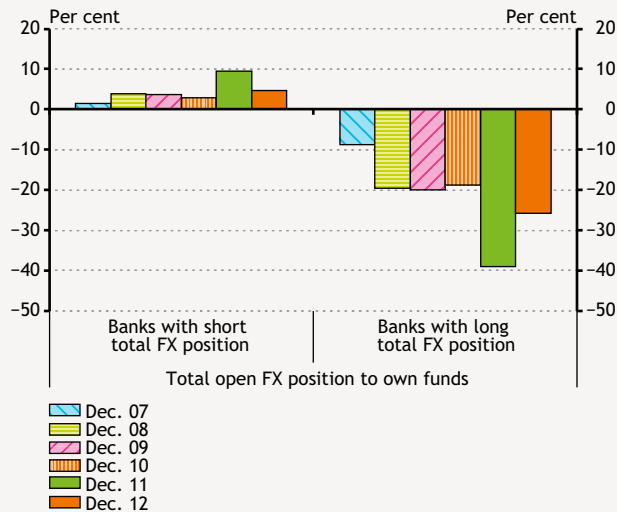
Source: MNB.

Chart 37
Open FX position of the domestic banking system



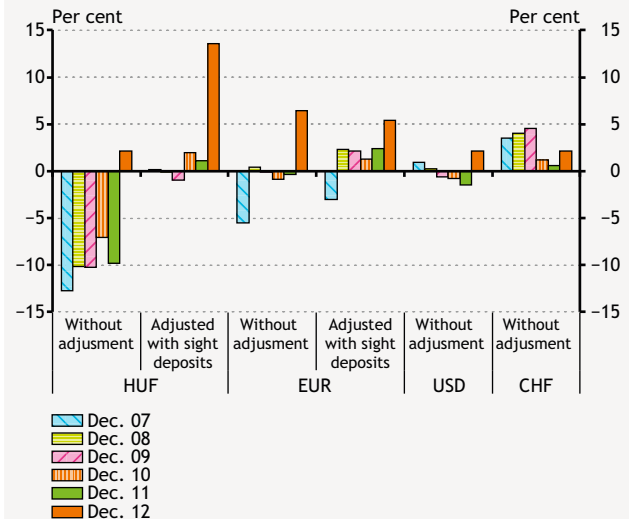
Source: MNB.

Chart 38
Banking sector's exchange rate exposure



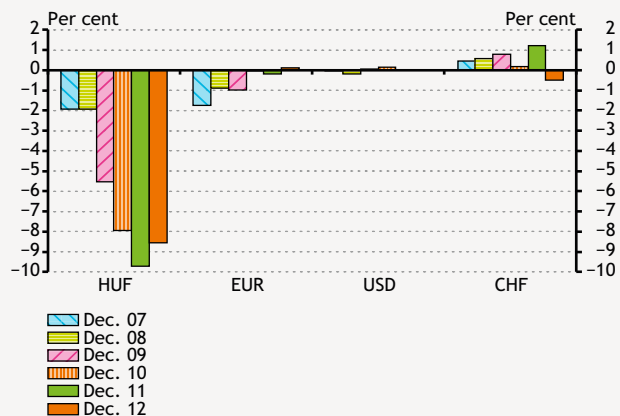
Source: MNB.

Chart 39
90-day re-pricing gap of the banking sector



Source: MNB.

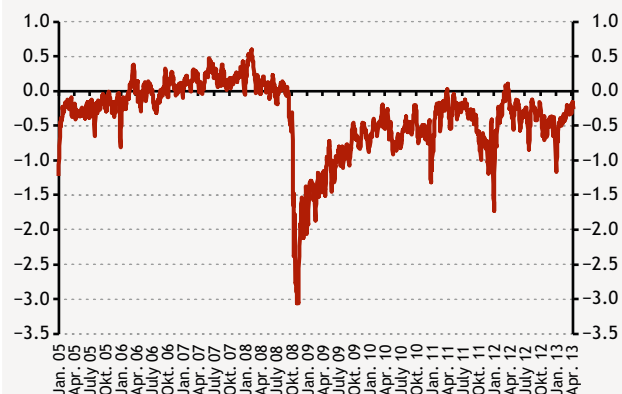
Chart 40
Estimated maximum loss based on interest rate risk stress tests relative to equity



Source: MNB.

Chart 41
Liquidity index

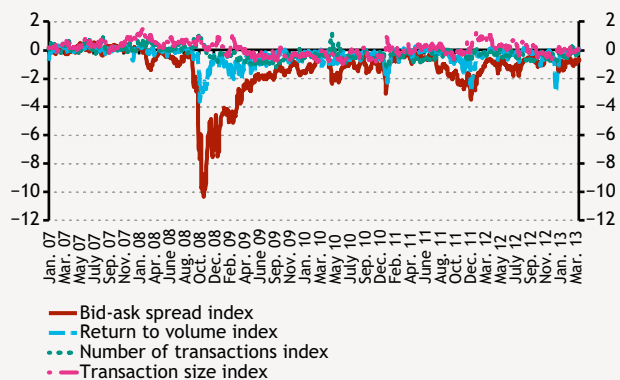
(exponentially weighted moving average)



Source: MNB, KELER, Reuters, DrKW.

Chart 42
Liquidity sub-indices

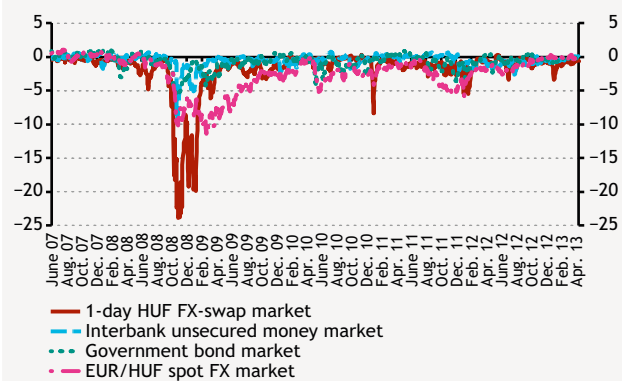
(exponentially weighted moving average)



Source: MNB, KELER, Reuters, DrKW.

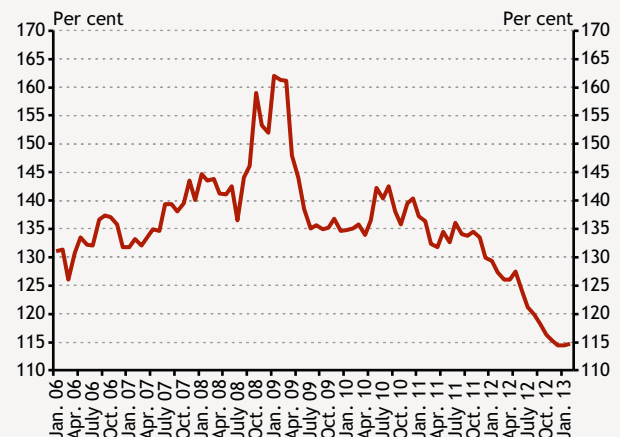
Chart 43
Bid-ask spread indices of the major domestic financial markets

(exponentially weighted moving average)



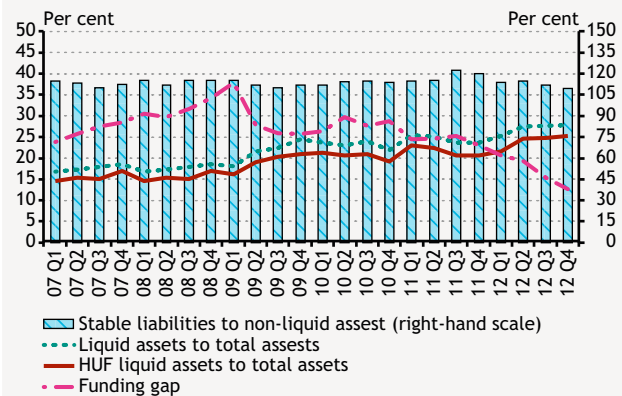
Source: MNB, KELER, Reuters, DrKW.

Chart 44
Credit to deposit ratio of the banking sector



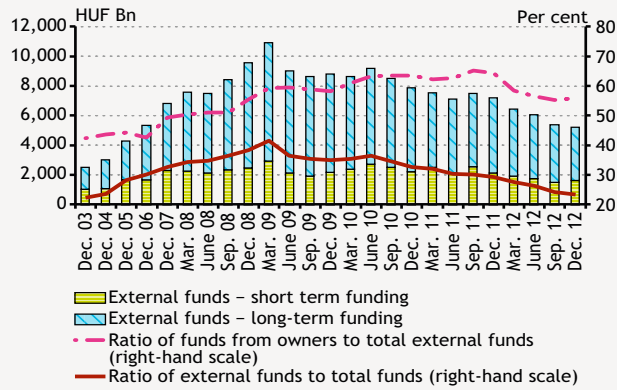
Source: MNB.

Chart 45
Liquidity ratios of the banking sector



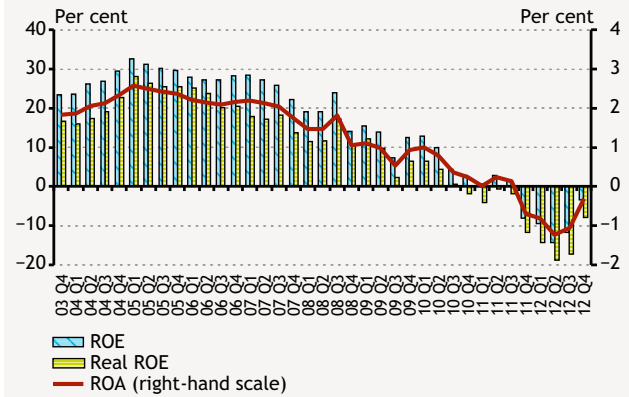
Source: MNB.

Chart 46
External funds of the banking sector



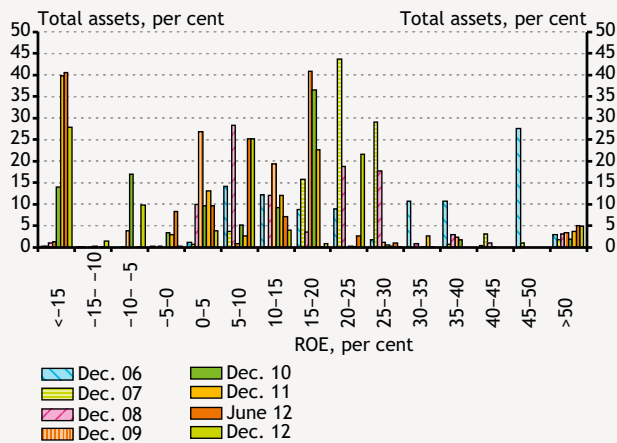
Source: MNB.

Chart 47
ROA, ROE and real ROE of the banking sector



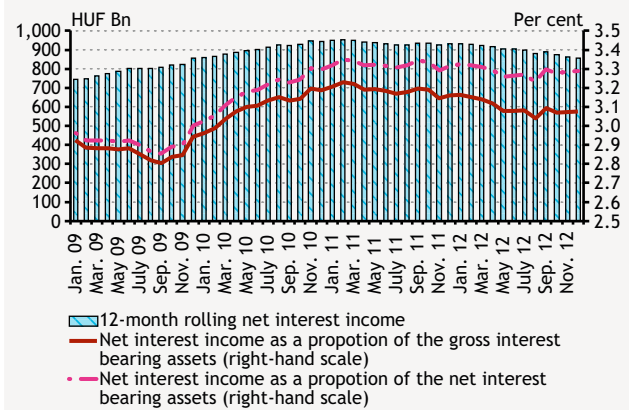
Source: MNB.

Chart 48
Dispersion of banks' total assets by ROE



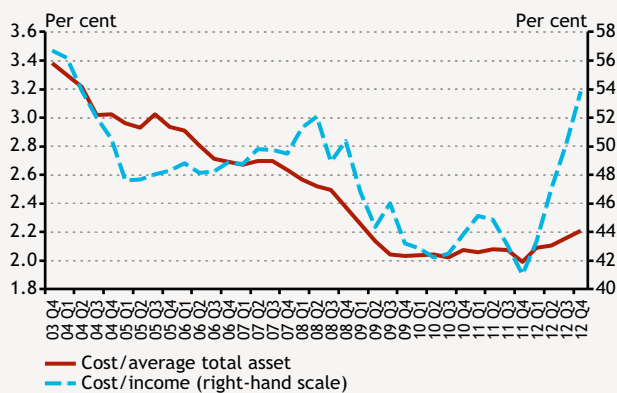
Source: MNB.

Chart 49
Net interest income as a proportion of the gross and net interest bearing assets in the banking sector



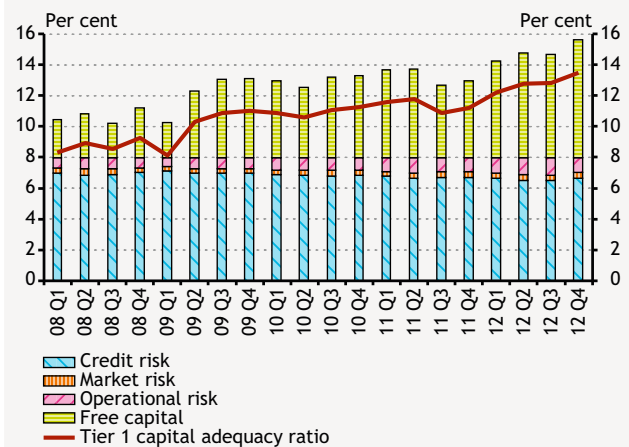
Source: MNB.

Chart 50
Operating efficiency indicators of the banking sector



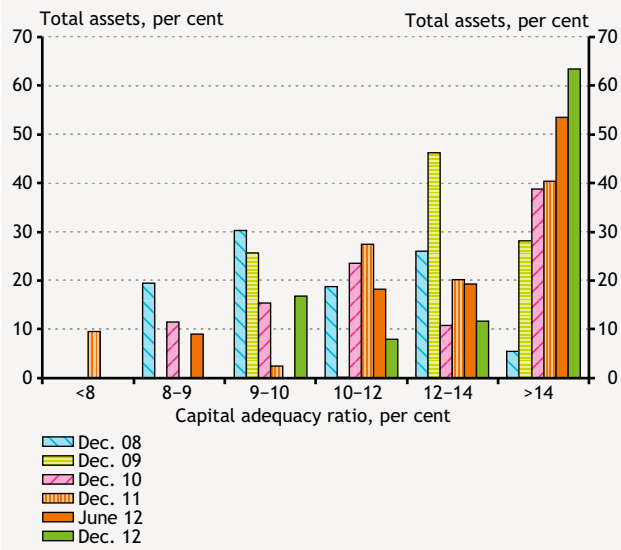
Source: MNB.

Chart 51
Banks' capital adequacy ratios



Source: MNB.

Chart 52
Dispersion of banks' minimum capital requirement by capital adequacy ratio



Source: MNB.

Notes to the appendix

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

Chart 1:

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

Chart 2:

VIX: implied volatility of S&P 500.

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

Chart 3:

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

Chart 4:

General government: according to SNA methodology.

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

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

Chart 10:

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

Chart 12:

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

Chart 13:

The 5-year forward 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 37:

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

Chart 40:

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 41:

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

Chart 42:

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

Chart 43:

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 44:

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 45:

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

Chart 47:

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

ROA: pre-tax profit / average total assets

Interim data are annualised

Pre-tax profit: previous 12 months

Average total assets: mean of previous 12 months

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

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

Chart 48:

Pre-tax profit.

Chart 49:

Based on aggregated individual, non-consolidated data

Net interest income: 12-month rolling numbers, the difference of interest revenue and interest expenditure

Gross interest bearing assets: 12-month average numbers, total exposure

Net interest bearing assets: 12-month average numbers, exposure minus the provision

Chart 50:

Cost: previous 12 months

Income: previous 12 months

Average total asset: mean of previous 12 months

Chart 51:

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

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

REPORT ON FINANCIAL STABILITY

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