MAGYAR NEMZETI BANK

REPORT ON FINANCIAL STABILITY

Update

OCTOBER 2008

Report on financial stability
– update –

October 2008

Published by the Magyar Nemzeti Bank

Publisher in charge: Judit Iglódi-Csató

Szabadság tér 8-9. H-1850 Budapest

www.mnb.hu

ISSN 1586-832X (print)

ISSN 1586-8338 (online)

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

The Magyar Nemzeti Bank's fundamental interest and joint responsibility with other authorities is to maintain and promote the stability of the domestic financial system. The role of the Magyar Nemzeti Bank in the maintenance of financial stability is defined by the Central Bank Act and the Trilateral Agreement between the Hungarian Financial Supervisory Authority, the Magyar Nemzeti Bank (the Central Bank of Hungary) and the Ministry of Finance on the Coordination of Tasks to Promote Financial System Stability.

The Magyar Nemzeti Bank facilitates and reinforces financial stability using 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, 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 lead to vulnerability of the financial system.

The primary objective of the Report on Financial Stability is to inform stakeholders on the topical issues related to financial stability, and thereby raise the risk awareness of those concerned as well as to 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 to thus make a contribution to increasing the stability of the financial system as a whole.

The analyses in this *Report* were prepared by the Financial Stability organisational unit, in cooperation with the organisational units Financial Analysis, Monetary Strategy and Economic Analysis and Payments and Securities Settlements, under the general direction of Director Péter Tabák. The project was managed by Márton Nagy, Deputy Head of Financial Stability. The *Report* was approved for publication by Deputy Governor Júlia Király.

Primary contributors to this *Report* include Tamás Balás, Ádám Banai, Gergely Kóczán, Márton Nagy, Róbert Szegedi, Gábor Szigel and Lóránt Varga. Other contributors to the background analyses in this *Report* include Ákos Bakonyi, Dániel Homolya, Emese Kuruc, Judit Páles, Péter Szűcs and Barnabás Virág. This Report is based on information for the period up to 30 September 2008.

The *Report* incorporates important comments and suggestions by the Monetary Council following its meeting on 6 October 2008. However, the *Report* reflects the views of the contributing organisational units, which are not necessarily identical with the official position of the Monetary Council or the MNB.

Contents

Overall assessment 7

1 Financial market and macroeconomic risks 11

1.1 Fragile international financial system, high risk premia 14

1.2 Deteriorating economic growth prospects 19

2 Risks of the Hungarian financial system 23

2.1 Considerable liquidity risk 26

2.2 Slowing loan dynamics and deteriorating, but still acceptable portfolio quality 28

2.3 Strong resilience to shocks as a result of high profitability and stable capital position 31

3 Actual articles 33

3.1 Foreign financing characterised by deteriorating maturity structure and increasing cost of funds 35

3.2 Liquidity premia remain high in the Hungarian government bond market 37

3.3 Growing bank losses in the government security portfolio 40

3.4 Expansion of broker-led sales in household mortgage lending 43

3.5 Challenges of foreign credit institutions' branches 48

Appendix: Macro-prudential indicators 53

Notes to the Appendix 66

Overall assessment

The Hungarian financial system is stable and has a substantial capital buffer in international comparison, which increases its resilience to risks

The Hungarian financial system has a substantial capital buffer, and therefore strong shock-absorbing capacity. The interbank market is functioning smoothly, and there is adequate forint liquidity in the financial system. There has been no sign of deterioration in foreign currency liquidity, neither in the form of a freezing of markets nor due to withdrawals of funds provided by parent banks. The conditions for accessing foreign funding have clearly deteriorated recently, but funding liquidity has not dried up. While credit portfolio quality has declined, the ratio of non-performing loans to the total portfolio remains low. Finally, the banking sector's profitability is moderating, but its level is still high compared to its European peers.

The risks identified in April have increased to some extent

The spring issue of the Report on Financial Stability identified several key risk factors. It noted that unfavourable funding liquidity conditions in the domestic financial system may persist due to rising global risk premia, and that economic growth may remain weak caused by both international and domestic factors, and that risk-based competition among banks may intensify. Entering into the second year of the sub-prime crisis, financial markets are marked by an increasing degree of uncertainty. Meanwhile, the ongoing adjustment in the financial sector has contributed to negative effects on the real economy. The risks to the operational environment facing the Hungarian financial system identified in April have increased to some extent.

Risk premia remain at high levels due to persistent disruptions in the operation of the international financial system and their implications for the real economy

The international financial system is characterised by a high degree of fragility. Problems with the valuation of structured finance products persist, and the total size of exposures to financial products backed by high-risk assets and the distribution of such exposures across the financial system are still not fully known. In addition, deleveraging by financial institutions has led to further losses through depreciation of financial assets. All of these factors have triggered sustained turbulence in international financial markets. In September, financial markets were hit particularly hard by the fact that numerous major institutions in the US financial system faced severe solvency problems as capital losses more than offset the amount of new capital raised. A general loss of confidence, coupled with a growing sense of panic, has triggered a significant disturbance to the global financial system. The instability of financial markets has prompted the central banks and public authorities in the advanced economies to intervene on a increasingly large scale, especially in the USA. Weak economic growth exposes financial system participants to additional challenges and, therefore, it takes more time for markets to return to normal functioning. Due to the prolonged, painful adjustment process currently taking place in the global economy (correction of global imbalances) and the financial sector (deleveraging), as well as the uncertainty surrounding the success of government interventions aimed at mitigating the negative effects, risk premia required by investors are likely to remain at a high level.

The confidence crisis in Europe has overshot, customer deposits at banks are safe

The confidence crisis on European financial markets continues, posing a threat to the operation of the financial system. Increasing distrust among banks may lead to irrational reactions. European authorities have expressed their readiness to take the all necessary measures to rebuild trust among banks and to restore investors' confidence in the financial markets. Customer deposits have not been

threatened so far in the European Union. The steps taken by the authorities so far confirm the commitment to keep deposits safe in the future as well.

Financial market turbulence has undermined domestic economic performance and threatens financial system stability indirectly through high risk premia

The Hungarian financial system is strongly integrated into the European financial system. There is some uncertainty as to how the liquidity and solvency of large US and European banks will affect the stability of the European parents of domestic banks. Due to the high share of household funds, the liquidity position of these institutions is stronger, and their capital position is more balanced compared with banking groups at the epicentre of the crisis. This mitigates the effects of market turbulence on the foreign-owned banking groups dominating the Hungarian banking sector. Consequently, the market turbulence stemming from the sub-prime mortgage crisis has indirect rather than direct effects on the performance of the domestic economy and the financial sector. Disruptions to the operation of financial systems of advanced economies have caused a deterioration in the growth prospects of the global economy and, ultimately, in the outlook for Hungarian economic growth as well. In addition, persistently high risk premia have contributed to a rise in the external financing costs of the domestic economy. The Hungarian financial sector has been adjusting to the rising costs of forint and foreign currency financing by raising interest rates and tightening credit standards, contributing to a deterioration in domestic growth.

Risk 1:
The risk of permanently low domestic economic growth has increased

The Hungarian financial sector faces weaker-than-expected economic growth. External business conditions may deteriorate further as asset prices, lending and economic activity are on a downward path in the advanced economies and commodity prices are high. Weaker external demand will have a negative impact on domestic economic activity. Other factors may also result in slower growth in domestic consumption The risk of a reversal in the credit cycle in both the household and corporate sectors is increasing, due to the tightening of credit conditions. Reduced investment activity and further weakening in employment are also negative developments.

Risk 2:
Liquidity conditions remain unfavourable

Domestic financial markets are operating smoothly, but participants have been facing transaction costs, which are above-average in historical terms. Liquidity premia in the government securities market continue to be high. The funding liquidity conditions of Hungarian banks have also remained unfavourable. The maturity profile of foreign funding has deteriorated even more, and funding costs have risen significantly after falling at the beginning of the year. The Hungarian banking sector must be prepared to face and adapt to sustained tight liquidity conditions. The Magyar Nemzeti Bank (the central bank of Hungary) is ready and able to ensure the smooth operation of the financial markets and banks in the event that the liquidity situation deteriorates and threatens the stability of the financial system.

Risk 3:
Risk-based competition appears to have stabilised at a high level

Until now domestic banks have tried to maintain profitability by boosting their lending portfolios, and this is associated with increased risk-taking. The fact that credit standards are now no longer being eased and the rise in lending interest rates indicates that the intensity of risk-based competition is no longer increasing. On the other hand, the availability of loans with high LTV ratios, the emergence of increasingly risky products (e.g. unit-linked insurance combined with a foreign currency loan) and the growth in sales via brokers suggest that intense risk-based competition continues. Inadequately trained brokers with improper incentives may contribute to over-indebtedness and, through sales to less creditworthy customers, to increasing credit risk.

Reassessment of risks identified in the April 2008 issue of the *Report on Financial Stability*

	Direction of change
Risk of persistently low economic growth	↑
Persistently unfavourable liquidity conditions in the domestic financial sector	↑
Persistence of intense risk-based competition	→

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

1 Financial market and macroeconomic risks

International money markets are still not functioning normally. Due to the fragile international financial system and the deteriorating macroeconomic environment, risk premia and financing costs are high. The losses of financial institutions (banks, insurance companies, investment funds, etc.) which are related to the sub-prime mortgage market have continued to rise, leading to the restructuring of their balance sheets and deleveraging, i.e. the need to obtain additional funds or to restrict lending if available funds are insufficient.

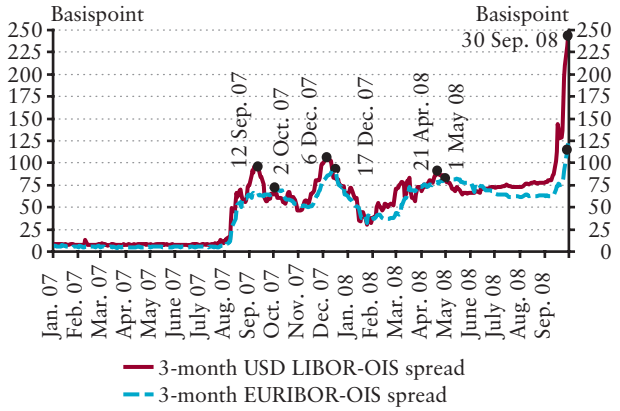
Asset prices, lending and economic cycles are strongly correlated and reinforce one another. In addition to the tightening of bank lending and the fall in the price of housing and financial assets, price shocks from high commodity prices are also leading to weaker economic growth. There is an increasing risk that domestic economic growth will remain sluggish, due to the fragile international financial and business environment and unfavourable internal conditions (investment, labour and credit market factors).

1.1 Fragile international financial system, high risk premia

Liquidity tensions will persist due to the turmoil on the international money markets. The sub-prime mortgage crisis which started in the summer of last year can be divided into four well-distinguished periods, based on the evolution of major turbulence. In the first phase, the initial period of the crisis in August 2007, investors were no longer willing to finance the issue of asset-backed securities, or were only willing to do so at significant costs. Liquidity problems rapidly spread to other interbank markets, including the ones vital to the functioning of the financial system (Chart 1-1). The second period began at the end of last year, when the confidence crisis worsened, due to heightened uncertainty surrounding the magnitude and distribution of the losses affecting financial institutions. The third turbulent period started in the spring of this year, when sales of assets led to a further tightening of liquidity due to the deleveraging of investment banks. This was the underlying reason for the liquidity crisis at the investment bank Bear Stearns.

Chart 1-1

3-month interbank spreads



OIS: overnight indexed swap: swap of 3-month interest rate to 1-day interest rate

Source: Reuters.

The fourth and strongest wave of turbulence stemming from the sub-prime mortgage crisis occurred in the summer of 2008. At the beginning, disclosure of the solvency problems at Freddie Mac and Fannie Mae,[1] two state-sponsored corporations pivotal for the functioning of the US mortgage market, caused market turmoil. In September, however, the bankruptcy of Lehman Brothers and the capital-raising problems of AIG, followed by the unavoidable merger of several US banks resulted in a significant exacerbation of the crisis in confidence. Consequently interbank dollar markets dried up, and interest rates rose to historically high levels. On several days, banks placed their liquidity surplus in overnight deposits at the central bank instead of the interbank market. Several major European banks also need dollar liquidity in order to be able to finance their dollar assets. Besides the dollar interbank market, European banks have indirect access to the necessary dollar liquidity through the dollar/euro swap market. Consequently, the turbulence which emerged in the dollar interbank market rapidly spread to the dollar/euro swap market and the euro interbank market as well. The turmoil in the euro interbank market was also aggravated by the appearance of problems at individual banks.

With the deleveraging process, liquidity tensions are followed by the appearance of solvency problems as well. When analysing banks' leverage, it is also important to take into account the developments affecting off-balance-sheet items. The simple balance sheet leverage of European and US commercial banks has not changed significantly in recent years.[2] In 2005-2007, increased lending did not appear in the expansion of balance sheets due to securitisation, i.e. off-balance-sheet activity. However, taking into account the increased amount of off-balance-sheet items (including the 'shadow banking system'), mainly in the US banking system, modified balance sheets probably expanded, and leverage calculated in this way grew.[3] The deteriorating macroeconomic environment and the assets taken back from

[1] The Federal National Mortgage Association, or Fannie Mae for short, was established in 1938. Fannie Mae was privatised in 1968 and has been working as a listed private company ever since. Its competitor, the Federal Home Loan Mortgage Corporation, nicknamed Freddie Mac, was founded in 1970. Similarly to Fannie Mae, it is a private institution with only implicit federal government support, securitising conforming mortgage loans, in other words operating primarily in the sub-prime market.

[2] The higher leverage of European commercial banks than that of the US banking sector is also due to regulatory and operational differences. In addition to the risk-adjusted capital adequacy limit, clear leverage regulations also exist in the United States. One operational difference is that European banks undertake less risky transactions (e.g. retail banking, government securities transactions) on the asset side, while holdings of off-balance-sheet items are larger in the case of US banks.

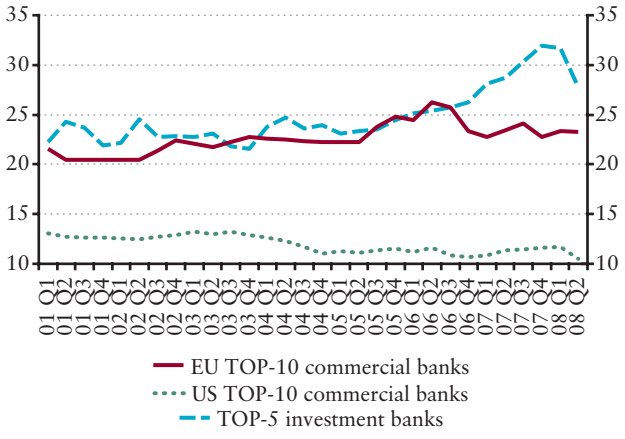
[3] The average off-balance-sheet exposure of US commercial banks compared to the balance sheet total is nearly 60 per cent, while this ratio is 30 per cent for European banks. The difference is partly attributable to the application of the 'shadow banking system', i.e. securitisation, and the different size of the system of structured investment companies.

off-balance-sheet structured investment vehicles (SIVs) may result in a decline in leverage in the future. However, for investment banks with significant asset-backed securities portfolios, balance sheets also show that leverage increased considerably in parallel with the pick-up in securitisation until the end of 2007, then declined markedly with the fall in asset prices in 2008 H1[4] (Chart 1-2). Despite the tightening of balance sheets, the leverage of investment banks continues to exceed the level preceding the build-up in 2004. In the case of investment banks, liquidity risks first turned into market risks and then into credit risks as losses increased mainly due to a decline in the price of on-balance-sheet assets, while in the case of commercial banks, it was due to a decline in the price of off-balance-sheet assets.[5] This trend is well illustrated by the sharp increase in CDS spreads last spring. Although financing costs declined thanks to the crisis management of Bear Stearns by the Federal Reserve, from June they again rose to a particularly high level due to mounting solvency problems in the US financial sector affecting numerous institutions, as well as due to the general loss of confidence in US investment banks (Chart 1-3). In parallel to the appearance of solvency problems, the consolidation of the financial system strengthened in the form of recapitalisation and mergers starting from the beginning of the year.[6]

Chart 1-2

Leverage of foreign banks

(median)



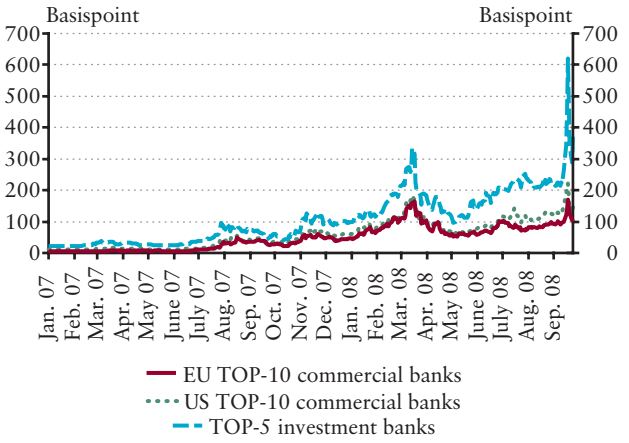
Note: Investment banks: Morgan Stanley, Goldman Sachs, Lehman Brothers, Merrill Lynch, UBS. The TOP-10 banks were selected on the basis of the 2007 balance sheet total. Leverage = Balance sheet total / Shareholder equity.

Sources: Bloomberg, Reuters, Datastream.

Chart 1-3

5-year CDS spread of foreign banks

(median)



Note: Investment banks: Morgan Stanley, Goldman Sachs, Lehman Brothers, Merrill Lynch, UBS. The TOP-10 banks were selected on the basis of the 2007 balance sheet total.

Sources: Bloomberg, Reuters, Datastream.

In developed markets, the magnitude of losses is increasing as a direct effect of the sub-prime mortgage crisis, whereas an indirect effect, the slowing of the global economy, is also reducing the profitability of banks. Large banks in developed countries are suffering increasing losses due to the sub-prime mortgage crisis. Some of the losses are realised, while another part of them stems from the mark-to-marked revaluation of the assets held in portfolios. From the beginning of the sub-prime mortgage crisis to the end of 2008 H1, the total loss of the international banking system amounted to nearly USD 500 billion (Chart 1-4). The losses are mainly attributable to banks within the USA and the euro area. In order to cover the unexpected losses, several banks have increased their capital, assisted mostly by Asian and Middle Eastern sovereign wealth funds. The total amount of recapitalisation has reached USD 310 billion, covering nearly 60 per cent of the losses. As a result of the restructuring of banks' balance sheets, a further increase in the losses related to the sub-prime mortgage crisis is expected. In addition, with the slowdown of the global economy, losses resulting from traditional banking activities, i.e. losses due to the deterioration of loan portfolios, may also come to the fore. As the magnitude of recapitalisation drifts away from the increase in losses, banks may reduce

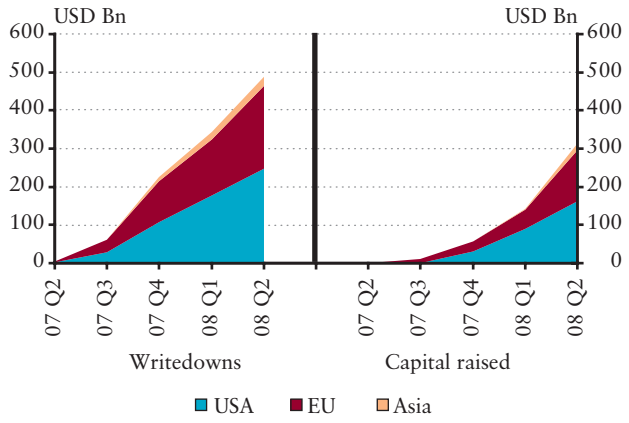
[4] In addition to sales of assets, the tightening of the balance sheet is also due to mark-to-market valuation practices, leading to the gradual depreciation of the portfolio and thus the balance sheet as a whole.

[5] Due to the fact that investment banks can evaluate liquid assets more easily, there may be an increase in the risk of the liquidity of the remaining securities portfolio and the probability of realistic evaluation declining considerably.

[6] In the USA, Merrill Lynch was bought by Bank of America, Bear Stearns and Washington Mutual were acquired by J.P. Morgan, and Wachovia by Citigroup. In Europe, Dresdner and HBOS were acquired by Commerzbank and Lloyds, respectively. Goldman Sachs and Morgan Stanley became bank holdings, which essentially meant the end of the market of independent investment banks.

Chart 1-4

Published write-downs and capital increases of the international banking system in a regional comparison



Source: Bloomberg.

their leverage only by selling assets or tightening their lending activity, leading to further negative effects on the real economy.[7] One significant threat is that further the strengthening and greater frequency of market turbulence may lead to the tightening of credit activity and a considerable fall in economic growth in developed countries through a radical, rapid reduction of leverage.

In most developed countries – the so-called epicentre of the crisis – interventions by the supervisory authorities are becoming stronger and affecting an increasingly wide scope of market participants, due to growing liquidity and solvency problems. Numerous measures have been taken by central banks and governments since the beginning of the crisis. However, in September 2008, as market turbulence increased, a comprehensive and significant set of measures was announced by authorities, primarily in the United States, considered to be the point of origin of the financial crisis, later followed by Europe as the crisis of confidence spread (Box 1-1). Idiosyncratic and systemic interventions by authorities were aimed at mitigating the liquidity and solvency problems within the financial system and thereby reducing the real economic costs.

Box 1-1: Interventions by central banks and governments in the international financial system in the past month

7 September 2008: Freddie Mac and Fannie Mae, the two mortgage loan refinancing government sponsored enterprises (so-called GSEs) are taken under conservatorship.

14 September 2008: The Fed extends the scope of collateral in relation to central bank credit line facilities.

14 September 2008: Lehman Brothers files for bankruptcy protection. Since then, a significant part of its activity has been sold with state assistance to private players.

16 September 2008: The Fed provides credit line of USD 85 billion for the insurance company AIG, in exchange for 80 per cent state ownership.

18 September 2008: The Fed expands the limits of the swap agreements with the ECB and the Swiss central bank, and concludes similar agreements with the Japanese, English and Canadian central banks. Later, the swap agreements are extended to the central banks of other countries as well.

17-22 September 2008: After July 2008, the US Securities and Exchange Commission (SEC) bans the naked short selling of all bank shares once again, then the covered short selling of hundreds of financial shares. In the following days, most European banks also ban the short selling of shares or tighten the relevant regulations.

22 September 2008: The two investment banks (Morgan Stanley and Goldman Sachs) which remain standing after the bankruptcies and acquisitions are allowed the opportunity to give up their earlier form of operation and become bank holding companies.

26 September 2008: Washington Mutual is on the brink of bankruptcy. The US Federal Deposit Insurance Corporation (FDIC) takes charge of it (this was the largest bank failure in US history to date), then sells it to J.P. Morgan.

29 September 2008: The Benelux states increase the capital of the Belgian Fortis Bank by EUR 11.2 billion. Consequently, the three countries acquire a 49 per cent share in the bank's divisions in their respective country. On 3 October, the Dutch government acquires 100 per cent ownership in the Dutch division for EUR 16.8 billion. On 6 October, BNP Paribas acquires the shares of Fortis in Belgium and Luxembourg.

29 September 2008: The British Bradford & Bingley Bank and its nonperforming mortgage loan holdings worth GBP 50 billion are

[7] For further details see: Tobias Adrian and Hyunk Shon Shin (2008): 'Financial intermediation, Financial stability and Monetary policy' Jackson Hole Symposium, Kansas City, US. 21-23 Aug.

nationalised. Its retail banking line of business, including all deposits, is bought by the Spanish Santander Bank.

29 September–6 October 2008: German mortgage lender Hypo Real Estate is granted a EUR 35 billion guarantee by the German government and a bank consortium. On 4 October, the consortium backs out of the deal, but on 6 October a EUR 50 billion state aid plan is approved.

30 September 2008: The Belgian Dexia Bank receives a EUR 6.4 billion increase in capital from the governments of Belgium, France and Luxembourg.

30 September–6 October 2008: The Irish government undertakes a guarantee for all deposits in the 6 largest banks for 2 years. By 6 October, Greece, Germany and Denmark announce guarantees for all bank deposits. At the same time, the cap on insured deposits is raised in the United Kingdom and Sweden.

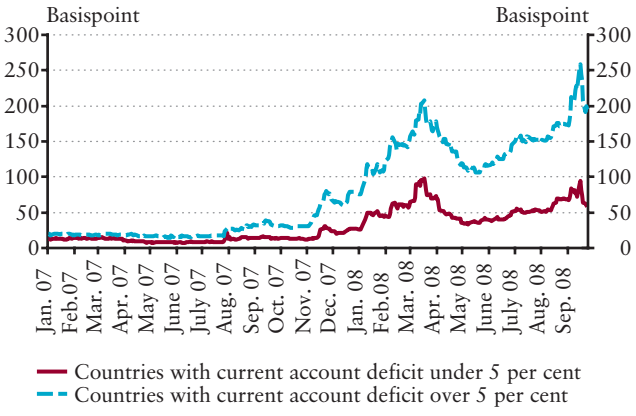
3 October 2008: The US Congress approves the bill containing a rescue plan (the so-called 'Troubled Assets Relief Program') elaborated by the Department of Finance and the Fed. Accordingly, using a USD 700 billion super fund, the state can buy up banks' qualified assets in the coming two years.[8]

Developments in the risk premia of emerging countries are mainly determined by investors' declining risk appetite. Following a significant increase, risk indices corrected lower from last spring, then increased sharply again in early June (Chart 1-5). In addition to the state of the financial system, this may have been caused by the appearance of inflation risk. Inflation fears fuelled interest rate hike expectations vis-à-vis the central banks of developed and emerging countries, which also resulted in a reduction in investors' risk appetite. But it was the growing crisis of confidence in the international financial system and growth-related concerns which again played the main role in the September turbulence. As a result of the spreading of market turbulence and the increasing trend of 'flight to quality', investors are less and less inclined to believe that emerging, so-called peripheral countries, can manage to avoid the impact of the relentless increase in risk premia and the economic slowdown. In respect of the increase in risk premia, investors differentiate between emerging countries to a greater extent, considering countries with high external imbalances more vulnerable.

Chart 1-5

5-year CDS spreads in emerging Europe

(median)



Note: Countries with high current account deficit (over 5 per cent in 2007): Bulgaria, Croatia, Estonia, Hungary, Latvia, Lithuania, Romania, Turkey. Countries with low current account deficit (under 5 per cent in 2007): Czech Republic, Poland, Russia.

Source: Thomson Datastream.

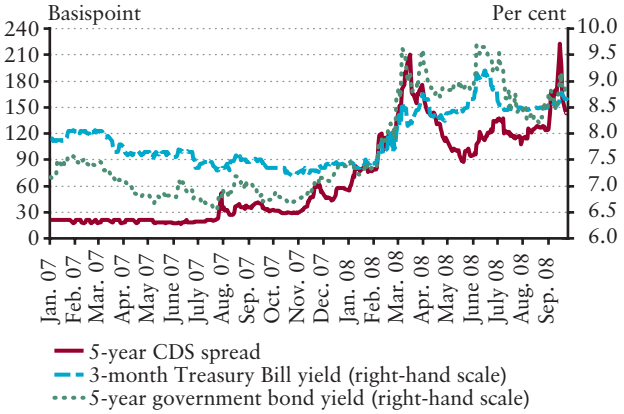
Foreign parent banks of the Hungarian banking sector have not shown any disturbances in functioning so far. In the developed part of Europe, the effect of the sub-prime mortgage crisis has mainly been felt through the direct exposures, the correlation of interbank markets, and the rising financing costs. It is uncertain how the liquidity and solvency situations of US and European large banks and the crisis of confidence will affect the stability of the European parents of Hungarian banks. Only some parent banks have been directly affected by the market turbulence so far, but the magnitude of the losses of these institutions is negligible. The impact of the market turbulence on foreign banking groups playing a key role in the Hungarian banking sector is reduced by the fact that, due to the high ratio of household liabilities, their liquidity situation is relatively better and their capital position is more balanced than those of the banking groups at the epicentre. The role of revenues from traditional activities (for example from retail business) was greater in their business and in the increase in income in recent years, which is also strongly attributable to robust credit expansion in the Central East European region.

[8] Under the terms of the program, the state can buy up qualified assets portfolios up to a value of USD 700 billion from financial institutions. In exchange for this, the state receives option warrants for shares from the companies participating in the programme, to have a percentage of later profits, if any. In the event that the whole programme (following the reselling of assets) posts a loss after five years, they will examine the possibility of subsequent contributions by the participating financial institutions. As part of the plan, the federal deposit insurance coverage limit is increased (from USD 100,000 to USD 250,000), and numerous branches of industry not involved in the financial sector are granted tax reductions.

Market turbulence affects the Hungarian money markets in an indirect manner. The increase in risk premia triggered by market turbulence has a significant impact on the volatility of the Hungarian money markets, as well as on Hungary's financing costs. The continued turbulence keeps Hungary's CDS spreads (Chart 1-5), the external financing costs of Hungarian banks and the expected yields of forint assets elevated. This latter appeared in the short and long forint interest rates increasing in most of the turbulent periods (Chart 1-5) and, to a smaller extent, in the temporary exchange rate depreciation. High foreign exchange and forint financing costs result in high bank loan and deposit interest rates. At the same time, the decline in the liquidity of international financial markets is reflected in the increase in the liquidity premium of the Hungarian government securities market, as well as in the shortening of the banking sector's liabilities.

Chart 1-6

Domestic CDS spreads and the yield of forint government bonds



Source: Reuters.

1.2 Deteriorating economic growth prospects

The deterioration of international business prospects is mainly the result of three significant shocks. Due to the shocks affecting the financial system, lending conditions are becoming tighter. Households and corporations adjust their consumption and investment decisions to the restricted financing possibilities and this reduces the performance of the economy. The decline in asset prices, including that of housing, mitigates household consumption and aggregate demand, mainly through the wealth effect. Finally, historically high commodity prices also lead to significant cost shocks, which also causes a slowdown of the economy.

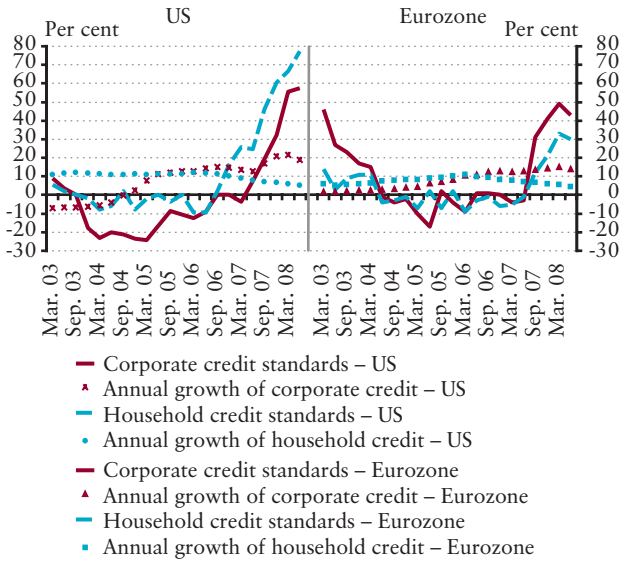
In parallel with the decline in asset prices, the risk of a slowdown in foreign lending is also increasing. In terms of outstanding loans, the USA and Europe show a similar picture. The annual increase in loans to households has been slowing since early 2006, and at the end of 2008 Q2 it already showed very weak dynamics. Growth in corporate loans, however, did not begin to decline until the last quarter, and this decline has started from a high level (Chart 1-7).

On the supply side, the strong dynamics in corporate loans is partly a result of utilising earlier loan agreements and the narrowing of alternative financing opportunities (capital market sources, LBOs[9]) in Europe,[10] while the demand side follows the investment and housing market cycles with a delay, which also affects the cyclical developments in corporate loans and household loans.[11] The deterioration in the conditions of access to loans increases the risk of a turnaround in the lending cycle and a further slowdown in lending.[12] As a result of the increase in the cost of funds, nominal interest rates on loans are increasing, and due to the restructuring of balance sheets, more and more banks are reducing their loan supply (Chart 1-7). The rise in the price of credit is characteristic of the euro area, while tighter non-price conditions are characteristic of both the euro area and the United States (Chart 1-8).

In developed countries, economic agents face not only revaluation of their financial wealth, but also a fall in

Chart 1-7

Growth of credit and the change of credit standards

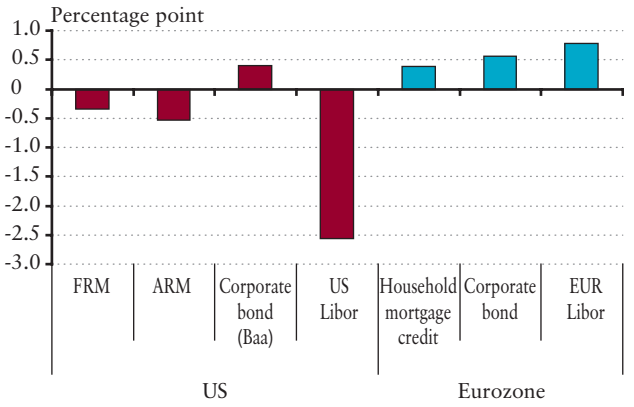


Note: In respect of standards the positive/negative value shows the net percentage of banks tightening/easing.

Sources: FED, ECB.

Chart 1-8

Change of loan interest rates between June 2007 and June 2008



Note: FRM: 30-year interest rate fixing mortgage loan, ARM: 1-year fixing mortgage loan, LIBOR: interbank interest rate.

Sources: Freddie Mac, FED, ECB.

[9] Leveraged buy-out.

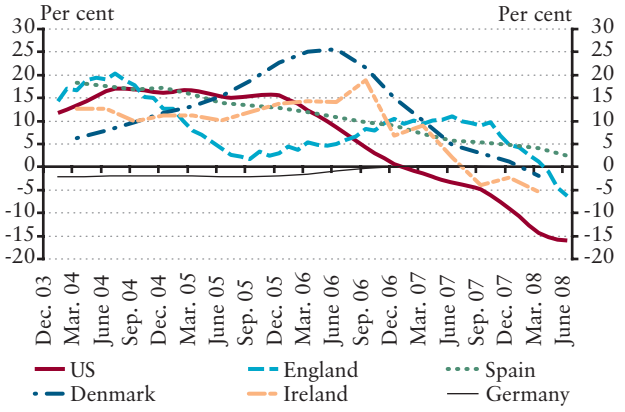
[10] Financial Stability Review, ECB (June 2007).

[11] Over the past 25 years, the corporate credit cycle followed that of the household sector with a lag of four quarters on average. For further details see: 'The cyclical pattern of loans to households and non-financial corporations in the euro area'. *ECB Monthly Bulletin,* Box 6, June 2007.

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

Chart 1-9

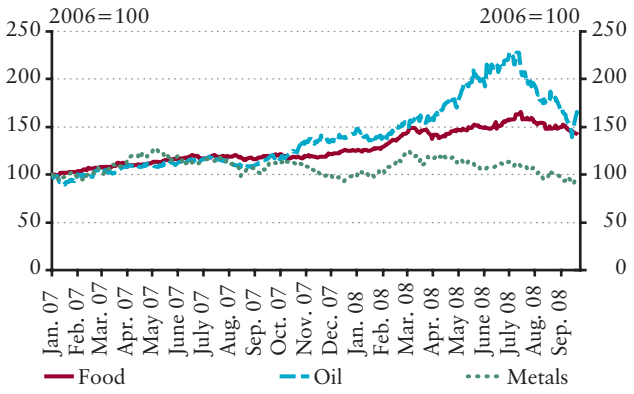
Annual nominal growth of home prices



Sources: BIS, S&P.

Chart 1-10

Commodity prices



Note: Commodity Research Bureau Spot Index, Brent, London Metal Exchange Index.

Source: Bloomberg.

the growth rate of housing prices. The development of the sub-prime mortgage crisis is a result of the rapid deflation of housing prices in the USA.[13] However, an upswing in lending and a rapid rise in housing prices followed by a slowdown in dynamics are also characteristic of a number of West European countries (Chart 1-9).

Housing prices have a significant negative effect on economic growth through the wealth effect (consumption financing) on the one hand, and through the tightening of credit supply (as the value of collateral declines) on the other hand. The biggest downturn in the housing market is taking place in England, Ireland, Spain and Denmark. The housing market turbulence has avoided the largest economy in Europe, Germany, where prices are close to stagnating.[14]

High commodity prices lead to cost shocks. Global oil and food prices increased drastically until mid-July 2008 (Chart 1-10). Although a significant correction took place later, the current price levels are still higher than those preceding the summer of 2007. In addition to the gloomy situation in the housing and credit markets, developments in world market prices of food and energy also strongly undermine the prospects for international economic growth.

Due to the unfavourable international environment, Hungarian growth prospects are deteriorating. An important question is to what extent emerging countries, including Hungary, can separate themselves from these effects. As Hungary's degree of financial and foreign trade integration is high, the impact of these shocks cannot be avoided (Chart 1-11). According to the forecast in the spring issue of the *Report on Financial Stability,* the Hungarian economy is likely to grow by 2 per cent in 2008 and by 3 per cent in 2009. Hungary's economic growth accelerated in 2008 Q2 as a result of one-off, temporary effects (strong agricultural sales, positive correction of public services, mainly in respect of health services), which render slightly higher growth probable, compared to the earlier projection. However, the weakening of external demand already observable will gradually reduce the performance of Hungary's economy this year and the next. In 2008 Q2, GDP growth in euro area countries, which constitute the most important region in terms of Hungary's export performance, already slowed strongly (Chart 1-12). According to the ECB's latest forecast, the euro area growth rate may only be between 1.1 and 1.7 per cent this year instead of the earlier estimate of 1.5-2.1 per cent, and between a mere 0.6-1.8 per cent next year instead of the 1-2 per cent projected previously.[15] Although the country composition of Hungary's exports is gradually changing – with a growing weighting of Central East Europe and Russia – the slowdown in European economic growth is felt increasingly in Hungarian business activity, namely in waning growth in foreign trade turnover and a narrower gap between the growth rates of exports and

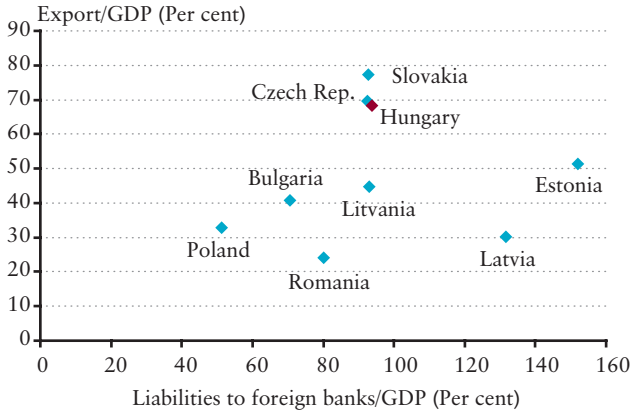
[13] The decline in housing prices in the USA may continue. The Case-Shiller Home Price Indices futures foreshadow a further 15-20 per cent decline in housing prices by end-2010. By end-2010 the expected prices may be identical with those from 2003, but may still considerably exceed the 1997 level, which preceded the rapid increase.

[14] In addition to the housing market, prospects for the market of commercial real estates are also deteriorating substantially in Western Europe. As a result of the considerable decline in yields, lending is contracting, and the issue of commercial mortgage-backed securities is also decreasing.

[15] ECB Monthly Bulletin (August and September 2008).

Chart 1-11

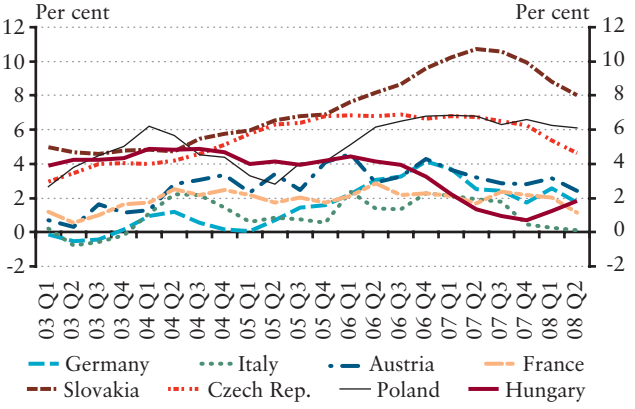
Level of foreign trade and financial integration in the countries of the region



Sources: BIS, Eurostat.

Chart 1-12

Annual real GDP growth in Hungary and its main export partners



Sources: BIS, Eurostat.

imports. As a result of these effects, according to the August projection of the Magyar Nemzeti Bank, GDP growth may reach 2.2 per cent[16] in 2008 and 2.6 per cent[17] in 2009. Looking at international economic activity, the sub-prime mortgage credit market crisis may last longer and its real economy effects may be more severe than expected and this constitutes a downside risk. Due to the September turbulence and the growing turmoil in the international financial system, further revisions of analysts' growth forecasts for the US and the global economy are to be expected.

In addition to slackening external demand, internal factors may also contribute to persistently weak economic growth in Hungary. According to the MNB's forecast, Hungarian demand may increase slightly in the coming years, but tighter domestic lending conditions may result in a slower and smaller rise in household consumption and corporate investment than expected. Weaker-than-expected external economic activity and the increasingly subdued outlook also lead to low investment activity. As a result of the energy price shock, the increase in minimum wages and slowing economic activity, the profitability of the Hungarian corporate sector continues to fall, and companies are adapting in the labour market primarily by adjusting their workforce. The low and declining level of employment also increases the risk of a slowdown in domestic demand.

[16] Based on data adjusted for calendar effects.
[17] Quarterly Report on Inflation (August 2008).

2 Risks of the Hungarian financial system[18]

[18] The analysis reviews the developments among banks and specialised credit institutions, excluding MFB, KELER and Eximbank. The update does not include the analysis of financial enterprises, other institutions playing a role in financial intermediation (insurance companies, investment funds and pension funds) and risks of the payment and settlement systems.

The Hungarian financial system faces numerous difficulties. The liquidity risk of the domestic financial markets and the financing risk of the banking sector have not improved substantially. Government security yields are characterised by a permanently high liquidity premium, while banks' dependency on foreign funding is increasing, their maturities are becoming shorter and financing costs remain high. All of these factors lead to an increase in high liquidity risk and a deterioration of lending conditions. In addition to the negative effect of the weaker-than-expected macroeconomic performance and the numerous cost shocks, increasingly difficult access to loans may contribute significantly to a slowdown in private sector lending and a more rapid deterioration of portfolio quality. The persistence of risk-based competition is also a negative factor, as it increases the vulnerability of the domestic banking sector. One positive factor, however, is that the resilience of the domestic financial system to shocks remains strong; in other words, banks' profitability is satisfactory and their capital position is stable.

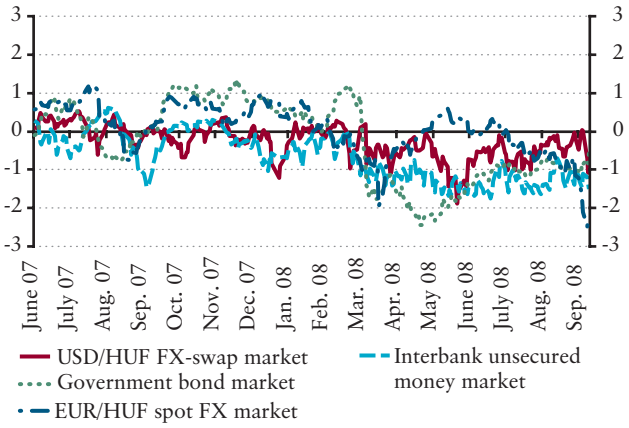
2.1 Considerable liquidity risk

The liquidity of the domestic money markets is not improving, and the government securities market is characterised by a permanently high liquidity premium. Of the price factors, the increase in the bid-ask spread caused the March decline in the aggregate liquidity indicator presented in the previous Report, mainly in the government securities market, and to a lesser extent in the uncollateralised interbank and the forint/euro spot markets. Although the bid-ask spread in the government securities market slightly narrowed after May, the magnitude of the spread is still quite high by historical standards (Chart 2-1). One negative phenomenon is that a permanent 50 basis point differential has developed between government securities and interest rate swap yields, indicating the continued existence of a high liquidity premium.[19] Another adverse factor is that the uncollateralised interbank market is characterised by transaction costs which permanently exceed the historical average, while the bid-ask spread in the forint/euro spot foreign exchange market has been increasing rapidly since June. Through the market risk, the persistence of the unfavourable liquidity environment also has a negative effect on bank portfolios.[20]

Chart 2-1

Bid-ask spread indices of the major domestic financial markets

(exponentially weighted moving average)



Note: 0 represents the historical average. The decline in the indicator means that the market became less tight.

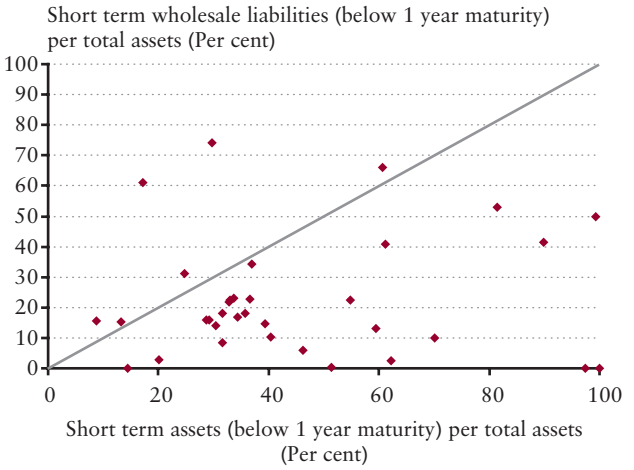
Source: MNB.

Banks' short-term liquidity management is adequate. Presuming that there is no new debt issued, the quality of banks' short-term liquidity management is reflected in the maturity matching of existing assets and liabilities. Compared to assets, the more market liabilities of a bank become mature, the higher the financing requirement and renewal risk may be. Chart 2-2 illustrates that at the end of 2008 H1 the majority of banks and all large banks were under the 45-degree line. This means that if there were no new debt issues, these banks would not have net financing requirements in the money market next year.

Chart 2-2

Maturity mismatch at domestic banks

(June 2008)



Source: MNB.

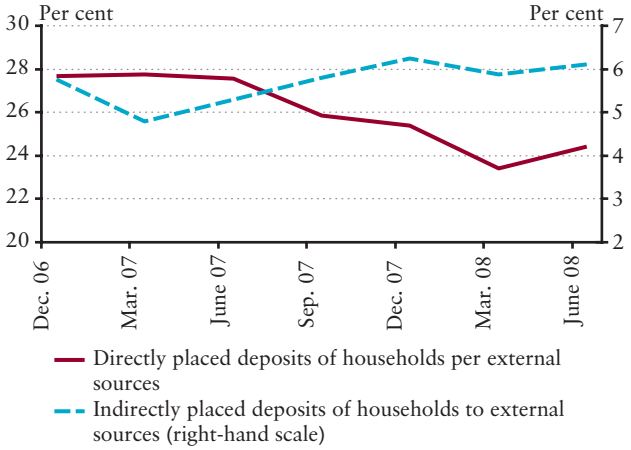
Competition for retail deposits is increasing. Owing to deteriorating financing conditions due to the sub-prime mortgage crisis, the domestic banking sector's demand for stable and relatively cheap retail deposits to finance new loan issues has increased considerably. By raising the interest rates on deposits and with a series of interest rate campaigns, it has been possible to arrest the decline in the ratio of household deposits within external liabilities (Chart 2-3). There are two ways for the banking sector to obtain sources from households: directly, through household deposits, and indirectly, through the bank deposits of investment funds (re-channelling). A significant part of liabilities from customers flowing to banks directly was placed in foreign exchange deposits in 2008 Q2, due to households' altered exchange rate expectations and the fact that due to the losses resulting from the turbulent period, customers rearranged their assets into safer banking

[19] See details in *Actual Articles* in Chapter 3.2.

[20] See details in *Actual Articles* in Chapter 3.3.

Chart 2-3

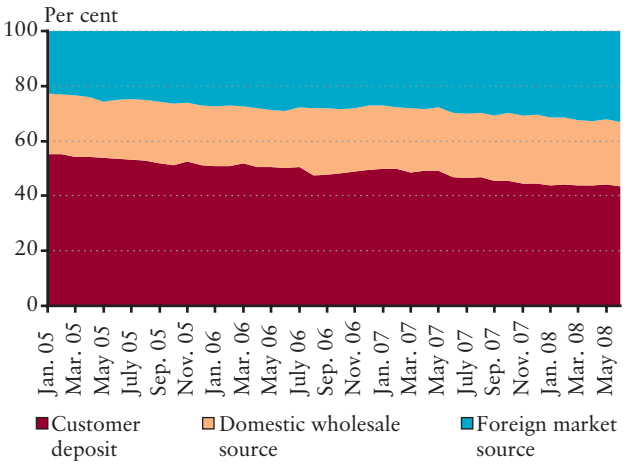
Household deposits placed directly and indirectly in the domestic banking sector



Source: MNB.

Chart 2-4

Funding structure of the domestic banking system



Note: Customer deposits contains only the household and corporate deposit placed directly.

Source: MNB.

products. Although in the case of investment funds an overall significant withdrawal of capital took place in 2008 Q2, the market share of guaranteed and money market funds continued to increase. These funds are the most important means of re-channelling the resources of banks. This is the underlying reason why the holding of resources channelled back to the banking sector increased, despite a decline in the assets of investment funds.

Due to the growing cost of funding and increased renewal risk, dependency on foreign resources may hinder further credit growth. As the expansion of household deposits still lags behind the growth rate of lending, the use of foreign funds by the domestic banking sector has continued to increase. The share of foreign funds within external funds already exceeds 35 per cent (Chart 2-4). A positive development is that parent banks continue to prefer Central East European countries which achieve high growth and profitability (including Hungary) in their group-level liquidity allocations. However, foreign funding conditions are clearly worsening. Compared to the levels of early 2007, funding costs are still very high and the residual maturity of foreign liabilities is becoming shorter. Banks fund themselves from foreign resources with increasingly shorter maturities, which, due to the increase in renewal risk, make the sector increasingly vulnerable to international money and credit market turbulences.[21] The banking sector must be prepared for a permanent deterioration in financing conditions and adapt its market activity to the unfavourable conditions. In addition to the development of liquidity management, reconsidering business strategies and restraining credit growth may be necessary.

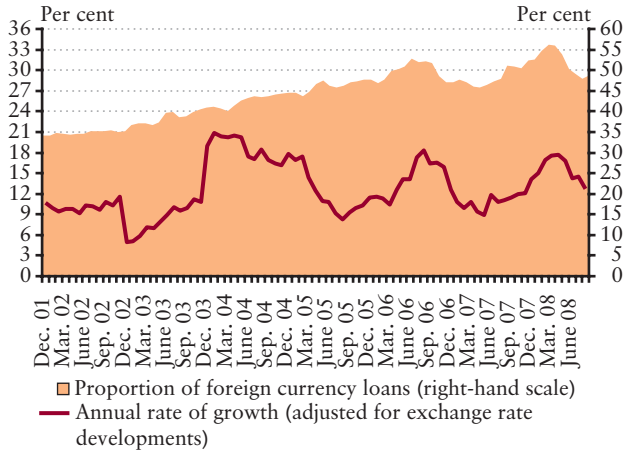
[21] See details in *Actual Articles* in Chapter 3.1.

2.2 Slowing loan dynamics and deteriorating, but still acceptable portfolio quality

Corporate lending growth is slowing, and the proportion of foreign currency loans is decreasing. In 2008 Q1, the growth rate of corporate lending was still accelerating, but in Q2, in parallel with the international trend, it swung back (Chart 2-5). There may be both demand and supply reasons behind the deceleration in corporate lending. From the demand side, the slowdown in corporate lending may be attributable to the low business confidence indices indicating unfavourable business activity data, the decline in investment growth and the fall in industrial production. In respect of the supply side, the underlying reason may be the significant tightening of lending conditions, which, at certain banks, also means definite restrictions on the domestic corporate loan supply, partly due to liquidity reasons.[22] The forint appreciation in the first half of this year resulted in a considerable rearrangement in lending structure. The main reason was that the companies which had so-called 'multicurrency' loans changed their debts to forint loans. However, short-term, liquidity-financing forint loans were observed within new borrowing as well. The shift in the currency structure of loans may be due to companies' altered exchange rate expectations.

Chart 2-5

Outstanding corporate credit of domestic banks

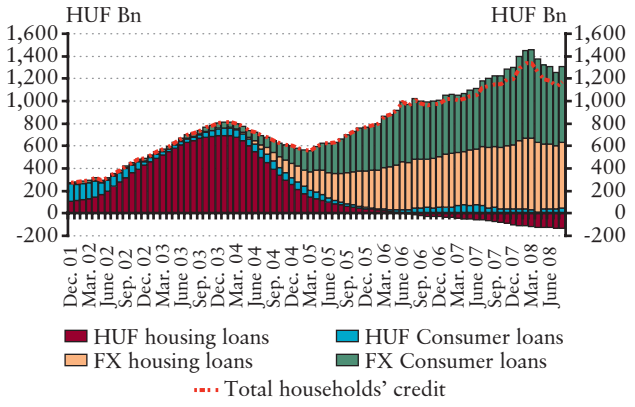


Source: MNB.

Signs of a slowdown are apparent in household lending as well. As opposed to non-financial corporations, the growth rate of domestic bank loans is still higher than GDP growth in the household sector, although it is slowing down due to the base effect. Nonetheless, in addition to the increase in outstanding loans, it is also worth examining the developments in annual net borrowing (annual change in outstanding loans), which better reflects the actual trend. Annual net borrowing increased until 2008 Q1, and then diverged from the trend of previous years and declined. This may indicate a change in the trend or the weakening of consumption smoothing (Chart 2-6). Unfavourable income prospects[23] and the increase in lending rates make it difficult for households to maintain consumption and investment from loans. The high debt burden-to-income ratio may also lead to a shift in the lending trend.[24]

Chart 2-6

Annual change in outstanding household bank credit



Source: MNB.

Appreciation of the forint affected households' borrowing behaviour less than that of corporations. Despite the strengthening of the exchange rate, the trend of foreign currency lending remained unchanged. On the one hand, this is due to the fact the ratio of household loan products which allow a modification of the currency is

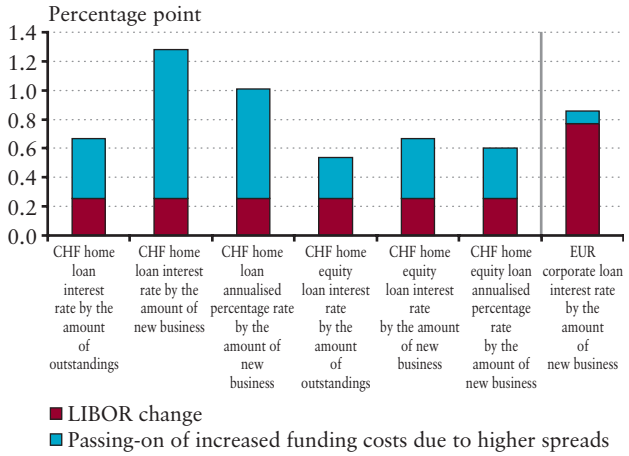
[22] See details in the MNB's survey: Senior Loan Officer Survey on Bank Lending Practices (September 2008).
[23] Box 1-1, Quarterly Report on Inflation (August 2008).
[24] Report on Financial Stability (April 2008).

negligible. On the other hand, the maturity of household mortgage loans is characteristically 10-20 years, thus the main driving force behind the decision is not the exchange rate movement, but the difference between the instalments stemming from the difference between domestic and foreign interest rates. A positive development is that the rise in lending in Japanese yen seems to be tapering off. The reason is that, due to increased risk, banks are terminating or reducing sales of JPY loan products.

Lending conditions are being tightened. Mainly due to increased funding costs, lending conditions are deteriorating in Hungary as well. As far as price factors are concerned, contrary to our expectations, interest rates on loans increased drastically for both households and corporations (Chart 2-7). Compared to developed markets, the increase in lending rates was higher due to the increase in risk premia. In terms of non-price conditions, the household and corporate sectors show different pictures. In the corporate segment, the tightening trend already started last year, and continued later in the year as well (Chart 2-8). In the recent period, banks gradually tightened the conditions of housing loans in the household sector, but eased conditions for consumer credit. As for consumer credit, this earlier trend seems to declining or stopping: no further significant easing can be expected this year. The current escalation of the financial crisis carries a high risk. The increase in funding costs triggered by market turbulence may result in further tightening of price and non-price lending conditions.[25]

Chart 2-7

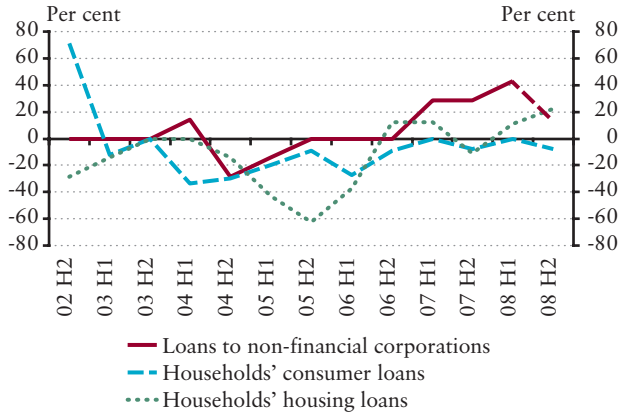
Growth in loan interest rates from June 2007 to June 2008



Source: MNB.

Chart 2-8

Changes in credit standards in the Hungarian banking sector



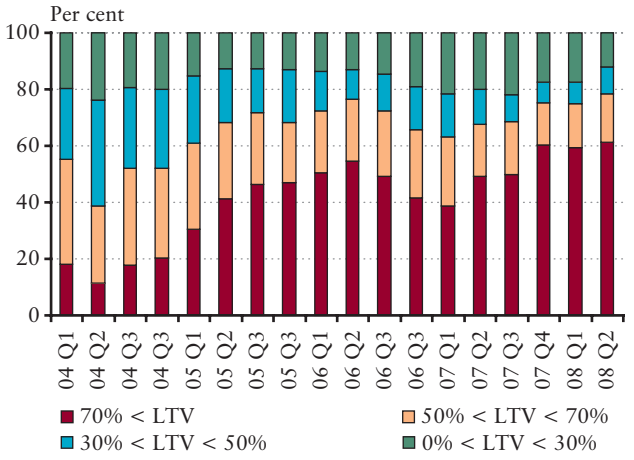
Note: In respect of standards, the positive/negative value shows the net percentage of banks tightening/easing. Positive values indicate a majority of tightening banks.

Source: MNB.

Risk-based competition continues to be strong. The intensity of risk-based competition has not increased, but it has remained strong over the past period. Although the increase in the ratio of new housing loans with an LTV above 70 per cent came to a halt, it is stabilising at a high level (Chart 2-9). The easing of the lending conditions to households stopped. However, unit-linked products continue to gain ground; investments related to mortgage loans are

Chart 2-9

Households' new housing loan distribution by LTV



Source: MNB.

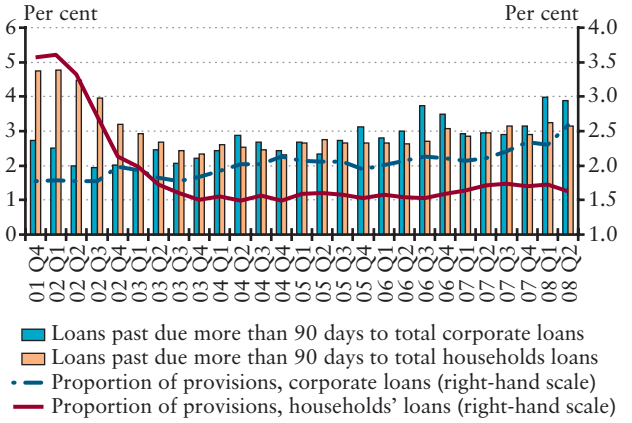
[25] Following the decline, the CDS spreads of domestic banks' foreign parent banks increased markedly in September, and reached the March levels. Accordingly, the 150-180 basis point increase in costs of foreign funds calculated in the April *Report* remained. Interest rates on loans increased by 60-120 basis points by June. As a result of more increases in the cost of funds, a further increase of a similar magnitude is expected in the future.

particularly popular. The upswing in selling through agents is also strong. Within sales, in addition to unit-linked products, loan refinancing is playing an increasing role. Adequate sales through agents add to the availability of loans and forms of savings, and reduce the cost of changing banks. However, improper agent practices increase the risks to financial stability. Agents with inadequate incentives and qualifications may contribute to excessive indebtedness and to an increase in credit risk as a result of selling to less creditworthy customers.[26]

Loan portfolio quality deteriorated slightly, but this trend may accelerate as a result of the slowdown in lending. Based on loans overdue for over 90 days and the loan loss ratio, deterioration in both corporate and household loan portfolio quality continued in the first half of this year (Chart 2-10). Although the household portfolio improved in Q2 2008, this may be considered a temporary development due to one-off effects.[27] Due to the unfavourable macroeconomic environment and the tightening of lending conditions, the upward trend in the ratio of non-performing loans resulting from portfolio seasoning may accelerate. Cost shocks caused by commodity prices and lending rates may result in an increase of non-performing loans in case of households, while cost shocks caused by wages may have a similar effect for companies. The macroeconomic environment is becoming less favourable, which may also contribute to this. As a result of these two effects, the ratio of loans overdue for more than 90 days, which is also a measure of loan portfolio quality, as well as the ratio of loan loss to the loan portfolio may increase significantly. Hungary's banking sector has sufficient income reserves and loan provisions to cover this portfolio deterioration. However, the increase in credit risk reduces banks' resilience to shocks.

Chart 2-10

Indicators of banks' loan portfolio quality



Source: MNB.

[26] See details in *Actual Articles* in Chapter 3.4.

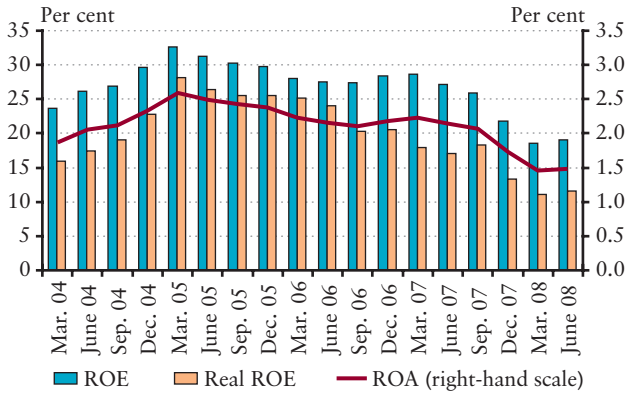
[27] According to the rules prevailing since January 2008, when determining the required loan loss, credit institutions are obliged to take into account the existing collateral as well, while previously this was only an option for banks. As banks tended to use loan loss provisions for profitability smoothing, they often created excessive reserves. The objective of the new regulation was exactly to put an end to this phenomenon.

2.3 Strong resilience to shocks as a result of high profitability and stable capital position

The narrowing of the interest rate spread on loans and deposits and the increase in operating costs reduce profitability from a high level. The banking sector's pre-tax profit declined in nominal terms, in accordance with our expectations. Accordingly, banking sector profitability indicators continued to edge lower: at end-H1 of this year, the ROE and the ROA amounted to 19 and 1.5 per cent respectively (Chart 2-11). Despite the decline, the level of profitability is still high by international standards. At end-2007, the average ROE and ROA of large banks in the euro area amounted to 11.5 per cent and 0.94 per cent respectively. In the same period, the average ROE of EU banks was nearly 14.5 per cent.

Chart 2-11

ROA, ROE and real ROE of the banking sector



Source: MNB.

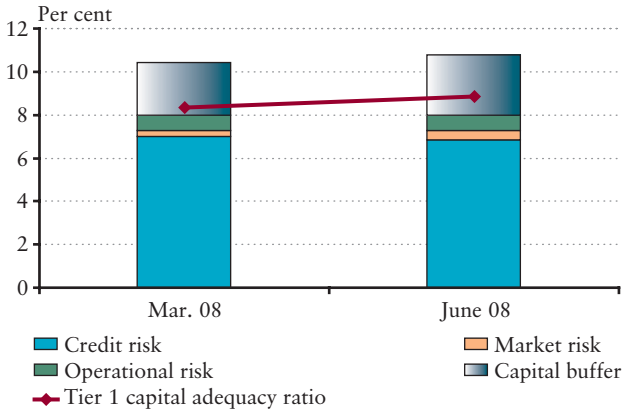
In respect of profitability components, the growth rate of interest income continued to decline. Growth in interest expenditures significantly exceeded that of interest incomes, resulting in a further narrowing of the banking sector spread. Income from fees and commissions remained practically unchanged, while profit on financial transactions declined in nominal terms as well. Operating costs increased sharply, while the negative effect of provisioning on the profit dropped temporarily. Based on the ROE indicators and banks' market weights, individual bank performances tended to decline. One negative phenomenon is that the market weight of banks with a ROE indicator below 10 per cent increased considerably.

Profitability prospects are deteriorating. The domestic banking sector's exposure to asset-backed securities and especially to the US investment bank Lehman Brothers and AIG insurance company is negligible. According to the Hungarian Financial Supervisory Authority, the total exposure of domestic banks to Lehman Brothers and AIG is HUF 20-25 billion, which amounts to nearly 1.3 per cent of the capital of the Hungarian banking sector. Market turbulence only has an indirect effect on banks' current and future performance. Domestic money market turmoil may reduce the profit originating from financial services and transactions. At the same time, the risk of an economic slowdown, rising lending rates and the expected tightening in lending conditions may result in weaker lending activity. As only a part of the increase in the costs of funding is passed on in the lending rates, banks' interest rate spread may also continue to become narrower. In parallel with the slowdown in lending and the trend of portfolio deterioration, loan loss provisioning may increase. All of this may result in a further decline in the profitability of the domestic banking sector.

The capital position is adequate based on the Basel II requirements. The banking sector has been complying with the new Basel II capital adequacy requirements since 2008 Q1. The change-over to the new regime did not result in any significant change in the level of capital adequacy. Capital adequacy ratio (CAR, 10.78% at the end of June 2008) within the banking sector continues to be considered stable; at the system level, the capital adequacy ratio exceeds the statutory minimum of 8 per cent (Chart 2-12). In terms

Chart 2-12

Banks' capital adequacy ratios



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

Source: MNB.

of the distribution of the CAR, most banks have a 9-12 per cent indicator. With active management of their capital, major credit institutions deliberately keep their CAR 1-2 percentage points above the regulatory minimum. Smaller banks which need to keep a substantially higher capital level for compliance with large exposure limits characteristically have a ratio significantly exceeding the legally required minimum.

3 Actual articles

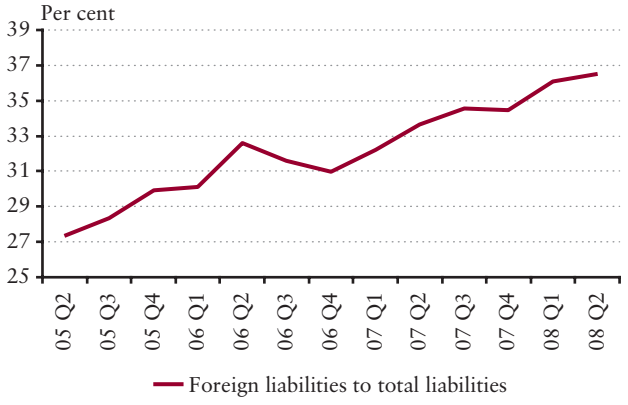
3.1 Foreign financing characterised by deteriorating maturity structure and increasing cost of funds

Domestic savings are lagging behind dynamically growing loan portfolios, resulting in an increasingly growing demand for foreign financing. The mainly foreign-controlled banking sector has been successful so far in ensuring the liquidity and funds required for future growth, but the sub-prime mortgage crisis has had a significant indirect impact on the processes. Widening CDS spreads and liquidity premia have adversely impacted the banking sector not only from the cost side, but also through the substantial reduction of the remaining maturity of foreign liabilities. As the banks face permanently adverse liquidity conditions, it is not expected that they will be able to maintain the existing high loan growth rates.

In recent years we have witnessed significant changes in the financing structure of the Hungarian banking sector. Since domestic savings were unable to keep pace with the dynamically growth in the loan portfolio which partly resulted from the convergence process, foreign funds have been playing increasingly important role in the fund management of banks. As a result of the fiscal adjustment, the savings ability of households continued to decrease and therefore the share of foreign liabilities continued to increase in 2008 within the overall external funds of the banking sector (Chart 3-1).

Chart 3-1

Banking system's foreign liabilities to total liabilities

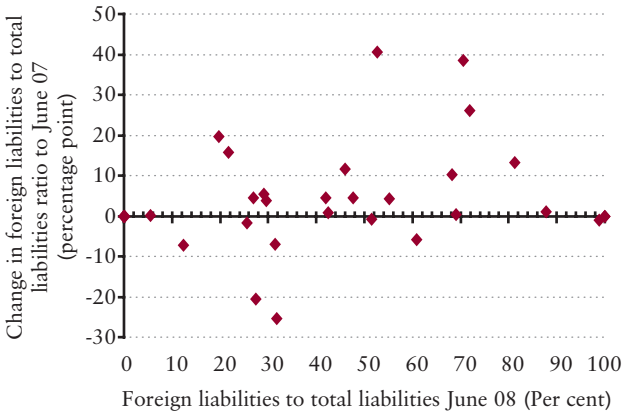


Source: MNB.

Reliance on foreign funds is a general phenomenon that characterises all participants of the banking sector but its extent varies significantly from bank to bank. Even though foreign exposure has decreased for some banks since last year, in general, the role of foreign financing in external borrowings has generally increased for individual banks (Chart 3-2).

Chart 3-2

Ratio of foreign liabilities to total liabilities and changes at individual bank level



Source: MNB.

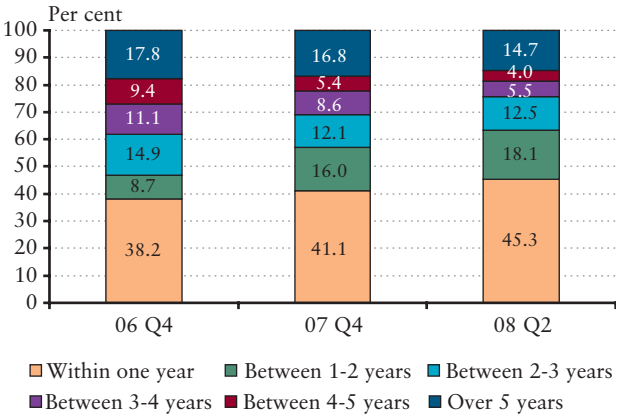
Analysing the foreign financing of the Hungarian banking system, we concluded in the April issue of the *Report on Financial Stability* that – mainly due to the credit market crisis – the maturity of foreign funds decreased from May 2007, and the same trend was observed throughout the first half of the year. As a result, foreign financing[28] (Chart 3-3) continues to be characterised by a significant shift towards shorter remaining maturities.

Along with the steadily increasing proportion of long-term loans (housing loans, home equity loans) in the balance sheet, the reduced remaining maturity of liabilities is an unfavourable factor, particularly due to the fact that the sub-prime crisis may have a longer-than-anticipated impact on the ability of the banking system to obtain funds and on the

[28] While the average remaining maturity of long-term foreign liabilities was still over 4 years at the end of 2006, by March 2008 it barely exceeded 3 years. Although the indicator increased to 3.7 by the end of Q2, it is still below the level observed at the end of 2007.

Chart 3-3

Composition of foreign funding by remaining maturity



Source: MNB.

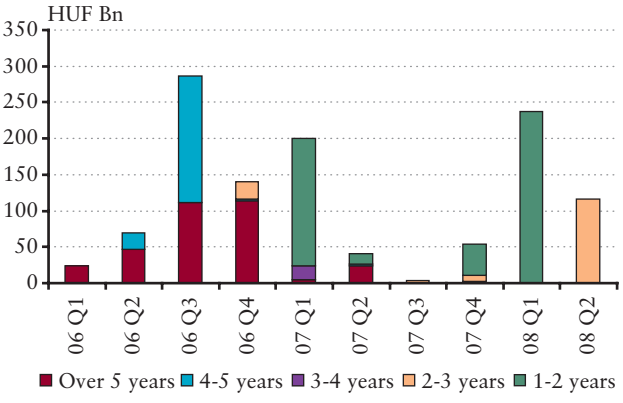
cost of such funds. At the same time, renewal risks may be significantly mitigated by the fact that the majority of the banking sector is owned by foreign professional investors, and nearly 60 percent of foreign funds is provided by the parent banks.

The sub-prime crisis resulted in declining risk appetite, which led to significant liquidity tensions in both money markets and capital markets. Credit institutions either would not be able to obtain long-term funding at all through bond issues, or if they could, the costs would be unreasonably high. As market players anticipated a substantial reduction of liquidity risk premia, they significantly decreased the maturity of new issuances. While bonds with an original maturity of over 5 years were frequently issued before the sub-prime crisis, due to the deteriorating market conditions the maximum maturity we observed from the second half of the previous year was 3 years, which in turn leads to increasing liquidity risks (Chart 3-4).

Negative processes can be observed regarding the costs of foreign financing as well. The lack of confidence in the banking sector, which is most strongly affected by the credit market crisis, led to soaring financing costs. Widening CDS spreads also confirm the increased cost of funds. Developments in the published CDS spreads of the parent banks of domestic banks reflect the impact of the turbulence on the CDS market triggered by the American sub-prime mortgage market crisis, and the faltering confidence in the banking sector. For nearly all banks, spreads continued to increase until the end of the 2008 Q1, decreased moderately by the end of June and then spiked again to reach historic heights in the middle of September (Chart 3-5). At the same time, significant differences could be observed for individual banks. These differences fundamentally resulted from the apparent losses of banks related to the sub-prime mortgage crisis, and the business model implemented by the specific bank.

Chart 3-4

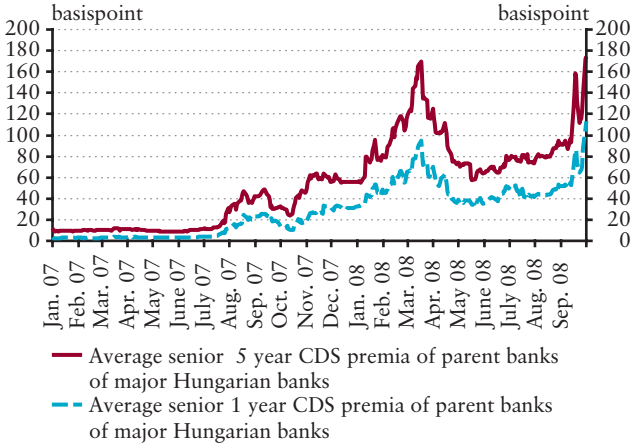
FX-denominated new bond issues by original maturity



Source: MNB.

Chart 3-5

Average senior CDS premia of parent banks of major Hungarian banks



Source: Thomson Datastream.

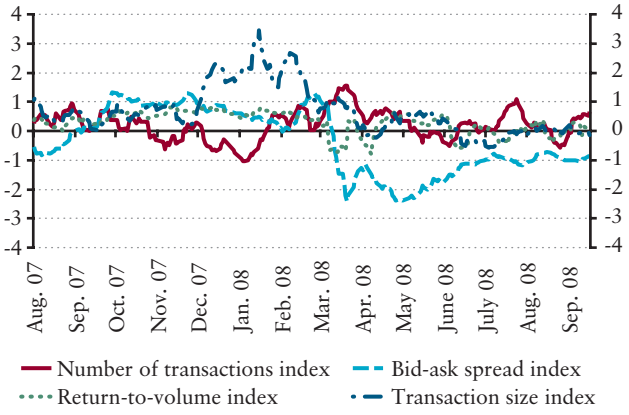
3.2 Liquidity premia remain high in the Hungarian government bond market

While the liquidity of the secondary government bond market has improved slightly in the past six months, its level remains low. The bid-ask spread has narrowed compared to the record level seen in March, but still remains wide. While tightness was improving it remained low, and the decreasing turnover led to a decline in market depth. While the liquidity premium of longer-term government bonds is the highest for 3-5 year maturities, it exceeds 50 basis points across all maturities. In the Central European region Hungary features the highest liquidity premia for government bonds, and the widest bid-ask spreads as well.

As discussed in the April 2008 *Report on Financial Stability*, due to the liquidity problems on government bond market in March, the expansion of liquidity on the Hungarian financial markets came to an abrupt halt. At the time, tight liquidity manifested itself mainly in prices rather than transaction volumes. The value of the bid-ask spread – a price-type indicator capturing the tightness of the government bond market – has somewhat increased since it bottomed out in March; nevertheless, it still stood at a very low level in mid-September (Chart 3-6).

Chart 3-6

Government bond market liquidity indices[29]



Note: A rise in the liquidity indices suggests an improvement in the given dimension of liquidity.

Sources: MNB, KELER, Reuters, DrKW.

Moreover, market turnover has dropped since the beginning of 2008, i.e. the depth of the market has decreased. This is primarily due to the fact that average transaction volumes have decreased significantly since the historic peak reached at the beginning of the year, while the number of deals has not changed notably. While the average daily turnover of the secondary market for government bonds amounted to nearly HUF 300 billion in 2008 Q1, it dropped to below HUF 180 billion in the period since April, approaching the value of the average turnover prevailing throughout 2007. In summary, based on the liquidity indices one can conclude that the liquidity of the domestic government bond market remains low, and only a slow improvement can be observed. Therefore, it is important to find out the magnitude of the liquidity premium that was built into the yields of forint government bonds due to the sustained low level of market liquidity. We can estimate this value on the basis of changes in interest rate swap spreads.[30]

The liquidity problems on the government security market observed in March 2008 were accompanied by a significant widening of the interest rate swap spread, i.e. the difference between the yields of longer-term government bonds and forint interest rate swaps with corresponding maturity. In terms of investors, the forint IRS market and the forint government bond market are highly segmented, however, there is a close relationship between the two markets due to the typically non-resident IRS market makers, whose activity covers both markets. Several factors may influence the value of the IRS spread, which can be both positive and negative. However, due to the close relationship between the two markets, under normal market conditions the interest rate spread typically does not exceed ±10-20 basis points. If the spread is higher than that, taking arbitrage-type positions in both markets will be profitable even after accounting for transaction costs, which eventually results in lower spreads.

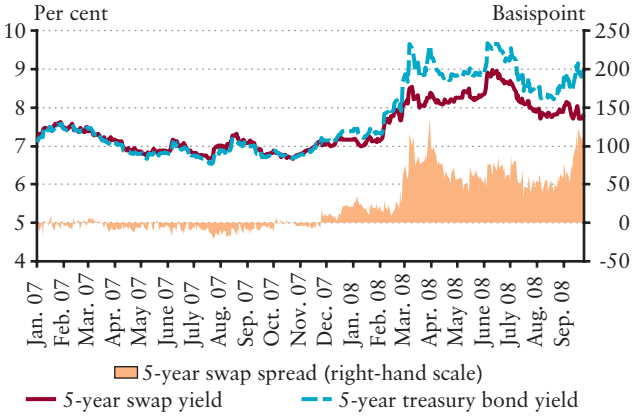
An important determining factor for the value of the IRS spread is the liquidity of the government bond market and the IRS market. The forint IRS market may be considered liquid: according to our estimates its average daily turnover

[29] On the calculation of liquidity indices, see Páles–Varga (2008): 'Trends in the liquidity of Hungarian financial markets – What does the MNB's new aggregate market liquidity index show?', MNB Bulletin, April 2008, pp. 44-51.

[30] For additional information on the relationship between HUF government bond and interest swap markets and on the factors influencing the value of the interest swap spread, please refer to Csávás-Varga-Balogh (2007): 'The forint interest rate swap market and the main drivers of swap spreads', MNB Occasional Papers, 64.

Chart 3-7

5-year treasury bond yield and swap spread

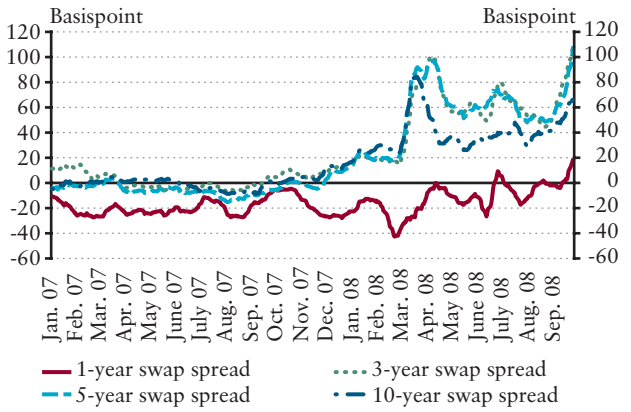


Sources: Government Debt Management Agency, Reuters, MNB calculations.

Chart 3-8

Liquidity premium of Hungarian government bonds of different maturities

(10-day moving average)



Sources: Government Debt Management Agency, Reuters, MNB calculations.

exceeds the turnover of the secondary market of government bonds even under normal market conditions. This is mainly due to the fact that, being a derivative, large interest rate positions may be taken by means of interest rate swaps with significantly smaller credit risk exposure than in the case of government bond transactions. Obviously, the interest rate swap yields contain some liquidity premium, but its value is negligible. By contrast, the liquidity of the forint government bond market may fluctuate significantly. If the liquidity of the government bond market decreases at a similar pace as in March 2008, a liquidity premium will be built into the government bond yields. However, the still liquid interest rate swap yields will not reflect this, as it is the low liquidity of the government bond market itself that prevents the opening of arbitrage positions that would work under normal market conditions. To put it somewhat more simply, in these cases the increase in interest rate swap yields can be considered as the fundamentally established growth of the risk premium expected of forint investments, while persistently high interest rate swap spreads may be a good indication of the liquidity premium built into the yield of government bonds.[31]

From March 2008 both the five-year interest rate swap yield and the five-year government bond yield started to increase, but the growth of the latter significantly exceeded the former (Chart 3-7). This is an indication that a significant amount of liquidity premium was built into yields on Hungarian government bonds. After peaking at 100 basis points in March-April 2008, the liquidity premium of the five-year government bond yield started to drop as well. However, the decrease stopped at around 50 basis points, and by the end of September it reached the March level.

Except for the one-year maturity, a significant increase in liquidity premia could be observed across all longer-term government bond yields (Chart 3-8). 3-5-year government bond yields experienced the highest liquidity premium growth. Following March 2008, the interest rate swap spread first fell rapidly to around 40 basis points on the 10-year maturity, then came to a halt, and by end-September the liquidity premium increased to above 60 basis points again. Based on the observations of more than six months, we may now conclude that starting from March 2008 a persistently high liquidity premium – which exceeded 50 basis points across all maturities – was built into the yield of longer-term Hungarian government bonds.

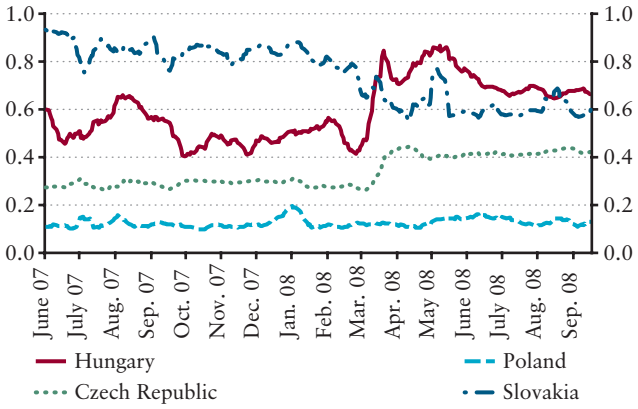
After 2008 Q1, the liquidity of the government securities market declined in several emerging economies in the region, albeit to a lesser degree than in Hungary. The Hungarian government bond market has the widest bid-ask spreads among the Central European states (Chart 3-9). Although the Czech bid-ask spreads also widened somewhat in March and April, in Poland, which also faced short-term liquidity problems, the already low spreads remained practically

[31] It might occur that in addition to the increase in the liquidity premium of government bonds, the increase in the credit risk premium of government bonds also contributes to the widening of the interest rate swap spread, if the latter occurs in conjunction with unchanged swap yields. Since in case of interest swaps, variable interest rates are always defined by the reference interest rates prevailing in the interbank market of the specific country, this situation can occur if the credit risk perception of a specific country and its banking sector deviate significantly from each other. With regard to Hungary we do not see any indication that this may have happened.

Chart 3-9

CEBI bid-ask spread indices of countries in the Central European region

(10-day moving average)

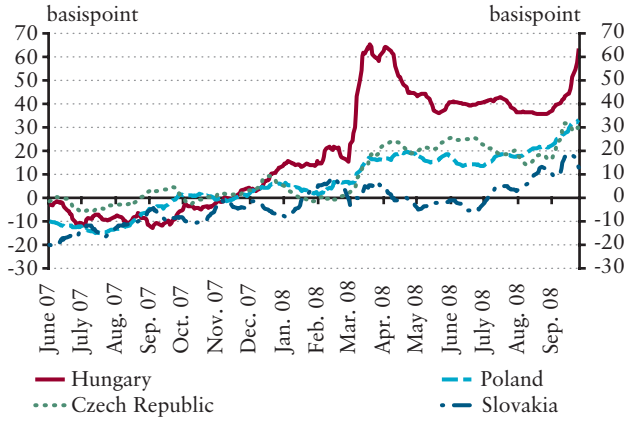


Source: DrKW CEBI bid-ask spread indices.

Chart 3-10

Swap-spread of countries in the Central European region

(10-day moving average)



Source: DrKW CEBI asset-swap spread indices.

unchanged. In fact, the Slovakian bid-ask spreads even narrowed somewhat in 2008 H1, bringing down their value to a level lower than the Hungarian bid-ask spreads, in contrast to the trend observed in recent periods.

Similarly to the widening of the bid-ask spreads, significant yield growth was observed in several countries in the region after March 2008, but the liquidity premium on Hungarian government bonds showed the most striking proportions among the international examples. According to Chart 3-10, even though the liquidity premia of the Czech, Polish and Slovakian government bond yields have also increased in recent months, the levels of interest rate swap yields and government bond yields did not deviate from one another to the significant extent seen in the Hungarian markets.

3.3 Growing bank losses in the government security portfolio

Yields in the Hungarian government securities market demonstrated increased volatility, and their overall level increased sharply. Rising yields depreciated the market value of the government bond portfolios to the extent that they lacked collateral, and even the holders of collateralised portfolios could face losses due to the widening of interest rate swap spreads. Investors holding government security portfolios directly or indirectly through different investment channels suffered significant losses. Due to the increased yields on government securities, banks declared exchange rate losses of around HUF 20 billion in their prudent profit and loss accounts for the first half of the year.[32] The exchange rate losses amounted to nearly 10 per cent of the before tax profit of the banking sector for the first half of the year; and this effect reduced the bank sector level ROE indicator by one or one-and-a-half percentage points in itself. New yield increases observed in September may generate additional losses for domestic banks.

In 2008 H1 the reference yields of the Government Debt Management Agency showed hectic changes across all maturities. In the period of government securities market turbulence in March yields increased substantially, then following some consolidation they either reached or exceeded their March levels by the middle of June. The period between the last week of June and the middle of July was characterised by declining yields, followed by another period of increasing yields in September. Yield increases and their deviation from interest rate swap yield resulted in losses for government securities holders, including banks.

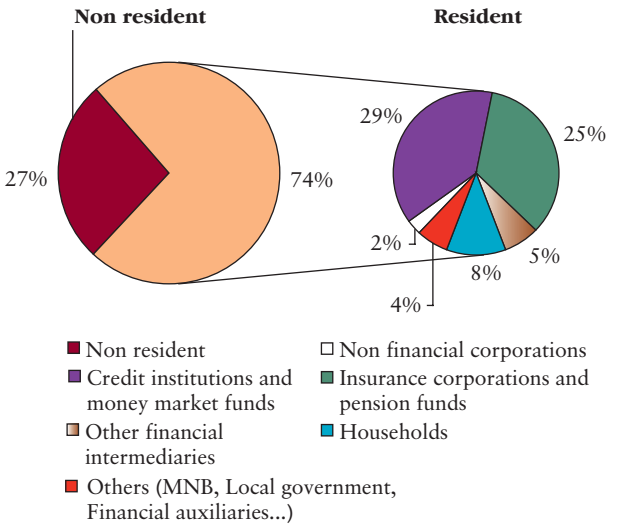
At the end of June, the proportion of non-resident owners within the government security portfolio was 27 per cent; government bond investments were typically preferred. Among domestic securities investors two large sectors can be identified: credit institutions and money market funds on the one hand, and insurance companies and pension funds on the other hand. At the end of June, they accounted for nearly 73 per cent of domestic security holders (Chart 3-11).

Non-resident investors continued reducing the purchased volume, and in Q2 the volume of their government securities holdings decreased significantly. Non-resident investors then started to increase their government securities investments in

Chart 3-11

Government bonds and treasury bills by institutional sectors at the end of June 2008

(at market prices)



Source: MNB.

July and August. Credit institutions and money market funds were major buyers in the first quarter, while the government security portfolio of insurance companies and pension funds decreased in the first quarter and increased in the second quarter, only to drop again at the end of the reviewed period. The decreasing portfolio of pension funds in Q1 was a result of the waning demand caused by the introduction of the optional portfolio system. The increase in the portfolio of other participants was primarily due to the purchases of local governments in Q1. However, they were already in a seller position in July and August. (Chart 3-12).

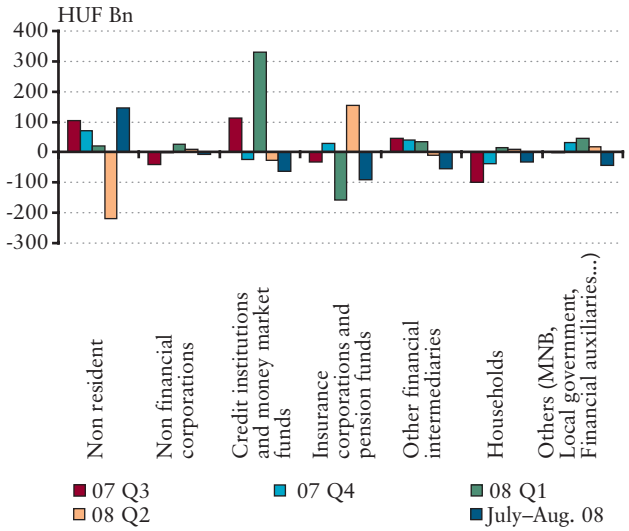
In the case of certain (unit-linked) insurance products, pension funds and investment funds, households bear repricing risks directly. Depending on the applied valuation dates and techniques, investors suffered direct losses from the devaluation of government securities. For government security-based investments, returns were generally negative in H1.

At the sectoral level, the government securities portfolio of banks constitutes 7-8 per cent of their balance sheet total. In

[32] Prudent profit and loss accounts are individual profit and loss accounts of banks, produced in accordance with national accounting standards.

Chart 3-12

Quarterly changes of the government securities portfolio broken down by institutional sectors

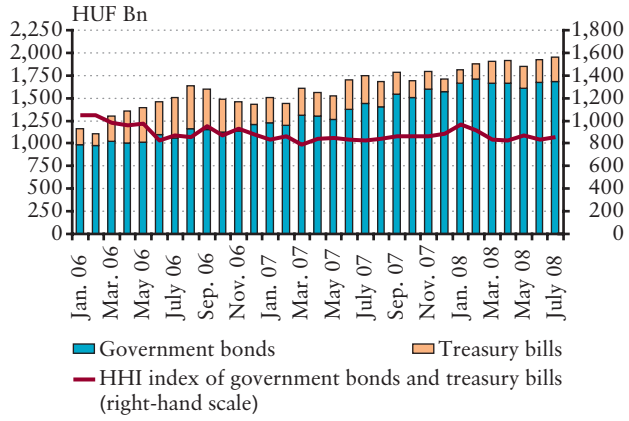


Note: Changes in stocks, excluding revaluation.

Source: MNB.

Chart 3-13

Government bond and treasury bill portfolio of the banking sector and HHI index



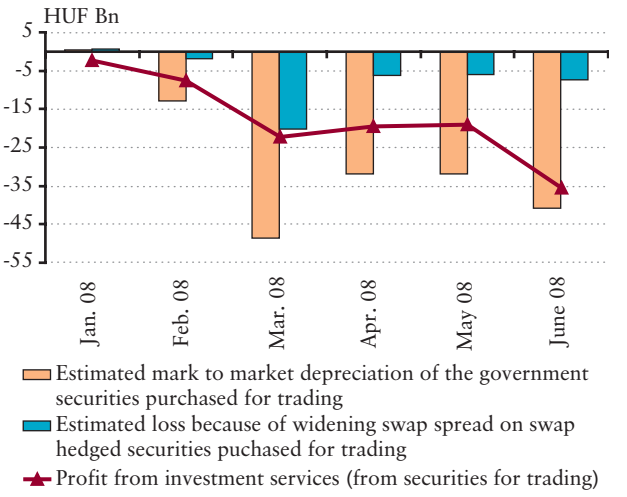
Source: MNB.

2008, the value of the government securities portfolio they held was around HUF 1,800-1,900 billion. The majority of these papers were government bonds with longer maturity, and a smaller part of them was made up of treasury bills. Based on the HHI index, a measure of market concentration, concentration was low in the market of government securities, and during the last 6 months neither the portfolios, nor the concentration changed notably (Chart 3-13).

Based on the assumption that most of the losses were realised on the government securities purchased for trading due to the sale and the potential devaluation of these papers, we estimated[33] the possible extent of changes to the overall market value of the government security portfolio held by the banking sector.[34] In addition, we estimated the potential losses that the banking sector could have realised due to the changes in the interest rate swap spread, if the portfolios had been completely hedged by interest rate swaps.[35] The two estimates indicate the maximum and minimum value of potential losses calculated from the beginning of the year (Chart 3-14). The outcome is similar in both cases, the most substantial theoretical losses would have been suffered in March. We compared these findings to the result of investment services of securities purchased for trading in the profit and loss account of banks. The magnitude of losses thus derived was close to the maximum losses we estimated, nevertheless, only a limited comparison of the two figures is possible, as the affected rows of the profit and loss account do not exclusively contain the result of government securities; moreover, the loss-reducing effects of hedging transactions are indicated in other rows.

Chart 3-14

Estimated depreciation of the securities purchased for trading of the banking sector, and the result of investment services



Source: MNB.

[33] For the purpose of our calculation, we assumed that the end-of-month government security portfolios existed at the beginning of the year, and we made no adjustments to reflect the effect of newly purchased government instruments. Therefore, the monthly revaluation data provide an estimate of the revaluation potential of the specific end-of-month portfolio.

[34] Modified estimated duration * end-of-month government security portfolio * changes in the reference interest rate observed since the beginning of the year.

[35] (Estimated government security portfolio duration – estimated swap duration) * End-of-month government security portfolio * changes in the interest rate swap spread observed since the beginning of the year.

Table 3-1

Losses on government securities in the first half of the year

	HUF Bn
Realized loss from exchange	-29
Loss from revaluation	-1
Effect of hedging transactions	9
Profit and loss effect	-20

Source: MNB.

The profit and loss accounts of individual banks have only a limited ability to consolidate the losses realised on the government securities portfolio and the hedging transactions offsetting them. First of all, they do not contain an instrument-level breakdown and second, individual banks apply different accounting practices and accounting policies. The matter is further complicated by the fact that some banks pursue a so-called 'macro hedge' practice, thus the result of hedging transactions cannot be allocated to cover the losses of specific deals.

In order to gain a more realistic picture of the profit and loss effect on the banking sector, the MNB conducted a survey with the participation of the banks, which together held more than 80 per cent of the government security portfolio of the banking sector at the end of June. The survey requested that as of the end of the first six months of the current year, the banks provide individual exchange loss items with respect to their government security portfolios, and their offsetting items as they appear in the individual profit and loss account they prepared in accordance with the national accounting standards. Based on the received and consolidated figures, the results of the surveyed banks were reduced by a total of HUF 20 billion due to the revaluation of government security portfolios (Table 3-1). As a result of differences concerning the volume of government papers held and the magnitude of delivery repo transactions, the values of disclosed losses consolidated individually were considerably different for the banks surveyed.

For the evaluation of these results, several factors should be taken into consideration. The first factor is the 'macro hedge' practice mentioned above. Some of the banks responding to the survey could not or could not completely reconcile the result of their hedging transactions with the exchange losses; consequently the profit-improving effect of hedging transactions is underestimated. The next item is the large value of realised exchange results. This is largely due to the fact, that according to the Hungarian accounting standards, delivery repo transactions must be booked as a spot purchase and a sale transaction. If a security was purchased as a low-yield paper and sold as a higher yield paper, the profit and loss account will contain an exchange loss, which will be offset by future interest income, provided that the banks hold the paper until maturity. In the first half of the year there were also transactions with the opposite effect: these transactions generated exchange gains, which are also considered in Table 3-1. The low value of realised exchange losses may also be explained by accounting reasons; the prevailing accounting rules significantly restrict the possibility of deducting the depreciation of government securities.

Price losses on government securities did not materially deteriorate the capital position of the banking sector, but was a main component in the decline of profitability indices. The depreciation effect represents about one per cent of the available capital, and four per cent of the free capital buffer of the banking sector. The capital position of the banking sector is stable; declining profitability has thus far provided adequate support to ensure stable operations. The realised losses represent about ten per cent of the disposable pre-tax profit of the banking sector for the first half of the year. Compared to the end of June of 2007, the ROE indicator of the banking sector fell by 8 per cent, declining to 19.1 per cent by the end of June 2008. Losses realised on the government securities portfolio during the first six months account for one to one-and-a-half percentage points of this decline. Considering that yields started to rise again in September, we may assume that by the end of the year banks will have to declare additional losses in their profit and loss accounts, further deteriorating their profitability positions.

3.4 Expansion of broker-led sales in household mortgage lending

In recent years, the share of agents in the distribution of mortgage loans has significantly increased in Hungary, and therefore at present it is considered high even in international comparison. As the expansion of agent sales improves product transparency and puts pressure on interest rates, theoretically this development should imply increasing competition, which should eventually be beneficial for consumers. At the same time, however, sales by agents raise certain consumer protection concerns and in addition, they entail a risk from a financial stability perspective, because the delinquency rate is significantly higher among mortgage loans disbursed through mortgage brokers, compared to direct branch distribution. In this sense, a stronger reliance on the broker distribution channel may as well indicate the continuation of risk-based competition.

In recent years, intermediary agents (brokers) have taken on an increasingly important role in the sale of different financial services, including certain insurance and savings products, as well as credit cards and mortgage loans. This process is a natural phenomenon in the competition of banks, and appeared earlier in more developed markets, too, even though the differences between individual countries are significant.

The use of lending intermediaries has advantages and disadvantages for each participant of the deal. Using a lending intermediary benefits the borrowers, who is relieved from the burden of shopping for and selecting loan products on their own (and later a part of the administration work is also passed on to the agent), and it may also point out favourable refinancing options. This is particularly important for borrowers with less experience in finance as these individuals find it difficult to understand specific loan structures. These borrowers expect the loan broker to provide consulting services also, which are provided free of charge in the Hungarian market in most cases, although it is not always the case. This practice, however, implies most of the risk for the borrower: because brokers are not (only) paid by the borrower but (also) by the bank disbursing the loan (typically in the form of a commission representing a percentage of the principal amount of the loan) they may recommend a product with which they can maximise their own commission, rather than one that best serves the borrower's interest.

Using brokers and lending intermediaries is beneficial for banks, since the services of these agents allow them to reach out to new customers who would not otherwise have visited the branch. This may be particularly important for credit institutions without a large branch network, because they can only access potential borrowers through the services of intermediaries. This distribution channel, however, also has disadvantages for the bank: on the one hand, it is a more expensive form of acquiring customers (due to the broker's commission), and on the other hand, the bank is not able to monitor the skills of brokers as much as it can with its own employees; hence the risk of misinformation and 'mis-selling' is higher. Moreover, as lending intermediaries compare the offers of different banks for the customer, theoretically they increase competition between the banks, which may lead to smaller margins. In addition, brokers may in time persuade their customers to look for more favourable refinancing options, thus the customers acquired through brokers are not only more expensive, they also may be less loyal to the bank.

For brokers, loan mediation may be their primary source of income, but it may also be a supplementary service they provide in addition to a variety of other services. Providing services as a broker may be accomplished with a relatively small investment, which makes it easy for an entrepreneur to enter the market. There are different types of loan brokers, including:

- 'Tied' bank brokers or mobile bankers: they have a relationship with one bank only, and they only offer the products of this bank to their customers.

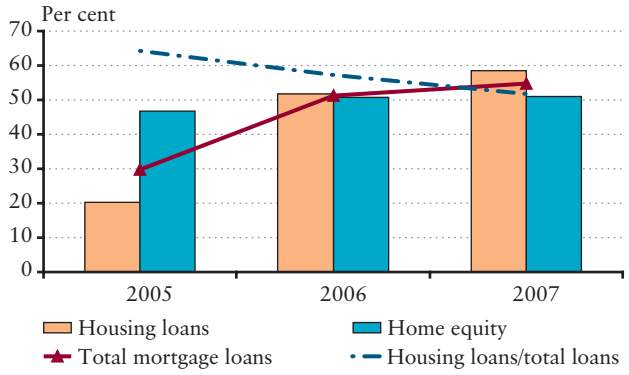
- Independent brokers: they may offer the products of several banks depending on customer needs and/or incentives offered by the banks to them. There are two sub-types of independent brokers:

  – 'Supplementary service' providers: they offer mediation of mortgage loans and other banking products as supplementary services to customers. This group includes real estate brokers, insurance companies and housing loan funds, whose primary activity and primary source of income is not the mediation of bank loans in itself.

  – 'Full-time' intermediaries, independent brokers: they are typically financial consulting firms and networks, whose

Chart 3-15

Proportion of selling agent related new contracts within the mortgage loans, by the number of contracts[36]



Source: MNB.

business model is based exclusively on the mediation of banking products.

The increased activity of intermediary brokers may attract the attention of supervisory organisations for two reasons: on the one hand, experience suggests that certain consumer protection issues arise more frequently in the course of broker sales, and on the other hand, loans disbursed through brokers tend to have worse credit ratings than those extended via branch distribution. From the perspective of financial stability, the more important problem is the latter: the growing share of broker distribution may in fact result in deterioration of the loan portfolio (although the cause and effect relationship is not completely transparent). Since the growth of household loans is still mainly attributed to products secured by mortgage, we will now focus exclusively on that segment. In this context we rely on a survey conducted among commercial banks. The overall share of the banks participating in the survey in all housing loans disbursed in 2007 was 75 percent, and presumably they represented a similar share in the entire mortgage-based loan segment, including home equity loans; thus the sample may be considered representative.[37]

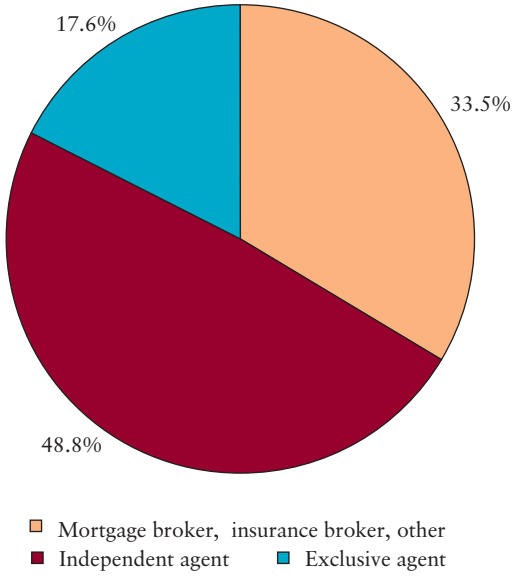
The findings of our bank survey confirmed the upsurge in the use of the broker channel. While in 2005 only around 30 per cent of all mortgage-based loans were sold by brokers and the remaining 70 per cent through branches, by 2007 the share of the broker distribution channel reached 55 per cent, while branch sales dropped to 45 per cent (Chart 3-15).

This dynamic growth in broker-mediated sales may be primarily attributed to their rising share in housing loans. This happened mainly due to the fact, that under pressure from fierce competition, certain players in the banking sector with large branch networks began to rely increasingly on this channel. Another contributing factor may have been the growth of home equity loans within mortgage loans. As early as in 2005, the share of intermediaries in this segment was nearly as high as it is today.

The share of different broker types (bank brokers, supplementary, full-time/independent brokers) in overall broker sales is indicated by Chart 3-16. As the chart shows, the share of bank brokers and mobile brokers is relatively low in Hungary; around 50 per cent of mortgage loan products sold by brokers are sold by independent agents, while about one-third is sold by real estate brokers, insurance companies and housing loan funds. These proportions are more or less the same for housing loans and home equity loans, and compared to 2006 they slightly shifted from independent brokers towards supplementary service providers.

Chart 3-16

Agent related contracts by the type of the agent, by the number of contracts[38]



Source: MNB.

[36] All charts in this section indicate a breakdown by number of contracts. In this way, it is not necessary to exclude the exchange rate effects of FX loans. Data received from individual banks suggest that ratios calculated from number of contracts are very similar to those derived from volume proportions. This is not surprising since the average loan sizes offered by the distribution channels only slightly differ from one another for housing loans (for 2007 disbursements they amounted to HUF 5.9 million and HUF 6.4 million for branch sales and broker sales, respectively), and they are practically the same for home equity loans (HUF 4.8 million).

[37] Eight banks supplied data for the survey: Budapest Bank, CIB, Erste Bank, FHB Jelzálogbank, FHB Kereskedelmi Bank, MKB, OTP, and Raiffeisen Bank. Two banks, K&H Bank and Unicredit Bank, did not provide data.

[38] Of the 8 banks participating in the survey only 6 banks were able to supply data on broker sales broken down by broker type.

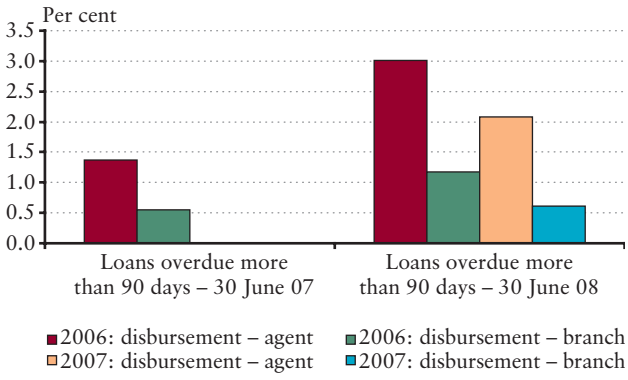
Mortgage loans sold through the broker channel perform significantly worse than those sold through the traditional branch network. According to the 'vintage-based' analysis normally conducted in this case – which examines the quality of loans disbursed in a specific year on subsequent reference dates – at all reference dates the ratio of mortgage loans 90 or more days overdue was more than twice as high for loans sold by brokers than for those sold by branches (Chart 3-17). This difference in loan quality characterises housing loans and home equity loans to an equal degree.

Significant differences can be observed if the delinquency of loans is examined by different broker types. Loans mediated by brokers whose primary source of income is not loan mediation (insurance companies, real estate brokers) perform significantly better. The quality of the loan portfolio obtained by bank brokers is much worse; and even that is underperformed by borrowers acquired through independent brokers.

The relationship between the distribution channel and credit performance may have several explanations. On the one hand, this may result from the higher probability of 'misselling' by brokers. Due to an interest in providing larger loans and being insensitive to credit risk, the broker may make an incorrect assessment of the customer's financial limitations, therefore it may persuade customers to stretch their finances to the extreme, because – as opposed to a branch sales manager – the broker has no vested interest in the debtor's long-term performance. In addition, by gaining knowledge of scoring system of each bank brokers may be able to deceive their systems to a certain degree (e.g. they know which customer might be accepted by which bank).[40] Nevertheless, it is also possible that the borrowers, who turn most likely to mortgage broker have inadequate financial skills, and are consequently a less stable financial position. In this case the rise of broker sales does not trigger higher non-performance ratios but it accompanies them, as a result of the increased risk appetite of banks, i.e. risk-based competition. (It should be noted here that non-performance ratios are not necessarily related to loss ratios: if the return on non-performing loans is nearly a hundred percent – through the collateral sale – bank might not realise bigger losses due to loans sold by brokers).

Chart 3-17

Loans overdue more then 90 days, by their vintage and number of new contracts[39]



Source: MNB.

In international comparison, we may conclude that similarly to Hungary, the share of brokers in mortgage lending in more developed markets is also high, and the share of the broker distribution channel in general appears to show a dynamically rising trend in most countries (however, we have no data available on the possible effect last year's sub-prime mortgage crisis may have had on all this). According to a study produced by the Oliver Wyman Company (Oliver Wyman, 2007)[41] at the request of the European Financial Management and Marketing Association (EFMA), in 2005 the share of the intermediary distribution channel in the overall mortgage loan distribution was nearly 60 percent in the most sophisticated mortgage markets, the United Kingdom and the Netherlands, which is similar to the value observed in Hungary. In other countries, however, this value is more within the range of 20-30 percent, while direct bank sales clearly dominate in certain states (Chart 3-18).[42]

According to the Oliver Wyman study, four major factors may primarily account for the larger share of intermediary distribution in specific markets: 1) fierce competition between lenders; 2) product complexity (which makes the consulting function of brokers more important); 3) low number of branches per capita; 4) poor financial sophistication of population (again, highlighting the consulting function of brokers).

These factors may also be relevant in the explanation of the high ratio of broker distribution in Hungary:

[39] Stock with a delinquency of over 90 days also include contracts cancelled or sold during the period.

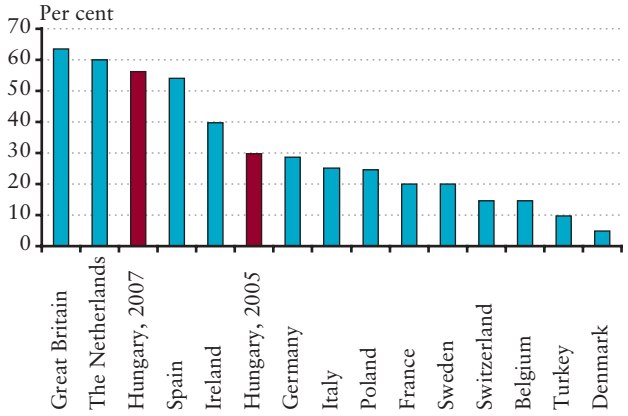
[40] This explanation, however, may seem less probable if we consider that customers obtained through brokers are subject to the same process of credit rating in the bank as the one performed in the branches.

[41] Henk Douna, Simon Low, Achim Dübel: European mortgage distribution – Changing channel choices, 2007, Oliver Wyman – EFMA – Fortis, hereinafter: Oliver Wyman, 2007.

[42] Hungary was not involved in the survey. In drawing conclusions from Chart 3-18 we need to bear in mind that the share of broker sales may have increased in other countries also as, unfortunately, we have no current data available beyond 2005.

Chart 3-18

Proportion of agent related new mortgage loan contracts in 2005 in several European countries



Sources: Oliver Wyman (2007), MNB survey.

- Fierce competition: the Oliver Wyman study used market concentration as an indicator to express the degree of competition, i.e. the market share of the five largest banks. In Hungary this indicator is at a high level, approximately 80 per cent. By contrast, in the UK, which has the highest rate of indirect mortgage distribution, it is only about 60 per cent. On the other hand, if we calculate market share from the housing loans disbursed in 2007 rather than from outstanding portfolio data, we find that the share of the 5 largest players is only 67.5 per cent, indicating more intense competition than would be suggested by the portfolio data.

- Product complexity: even though some of the loan structures offered by the most sophisticated UK and Dutch lending markets are not yet available in Hungary (e.g. adjustable rate mortgage loan, 5-year interest rate fixation, periodical 'payment holidays', etc.), the majority of loans offered in Hungary are FX-based, which is not typical in the more sophisticated markets. Therefore, despite the perhaps less complex product variety Hungary offers, we cannot consider choice between mortgage products to be 'easy'.

- Number of bank branches per capita: with around 16 branches for 100,000 inhabitants,[43] Hungary significantly falls behind the developed markets with a value of about 50 – for example Germany, Italy or Belgium – where the use of the broker distribution channel is more limited; on the other hand, the Hungarian value is more in line with the level measured in the UK, which is around 20. At the same time, we should note that this is not because domestic banks prefer non-branch services, but primarily due to the fact that the financial intermediary market has less depth in Hungary – and in other former socialist states as well.

- Financial skills of the population: with less experience in the arena of market economy, traditional opinion assumes that the financial awareness of the Hungarian population is lower than in Western Europe, however, this hypothesis is not supported by reliable and factual data at this time.

The above factors may account for the high ratio of indirect lending channels in the Hungarian market, while some of them – including fierce competition and the inadequate level of financial awareness – may explain the poorer portfolio quality associated with the intermediary distribution channel.

We have no data available regarding the quality of mortgage loans distributed through the broker channel in other countries. The hypothesis that this may not be simply a domestic phenomenon may be supported by a survey conducted in California, which found that the ratio of non-performing loans within the loans disbursed through brokers is 5.9 per cent, which significantly exceeds the 2.2 per cent value observed for the branch distribution channel (The Orange County Register, 2008).[44]

It is worth looking at the international examples from a regulatory perspective. The information asymmetry existing between the broker and the client is the primary justification for regulatory intervention in the relationship between the participants of loan mediation. There are no uniform international or European Union standards for developing an adequate regulatory environment for loan mediation, and individual countries have differing legislation. Regulations cover three main areas:

- Restrictions on market access: they determine who can perform lending intermediary activities, and under what conditions. Regulation in this regard is typically very lax in all countries: there are no specific rules regarding financial (capital) requirements or the brokers' knowledge or education in finance. In the United States, for example, obtaining the required license is a mere administrative formality (in the state of California real estate agents may automatically act as mortgage brokers).

- Rules concerning the borrower's awareness: the purpose of these requirements is generally to make the broker's

[43] For the purposes of this calculation we excluded the branches of savings cooperatives. As the share of these credit institutions in mortgage lending is extremely low (1-1.5 percent in 2008), they may not be considered market participants.

[44] http://www.ocregister.com/articles/brokers-loans-broker-1910801-loan-percent.

activity more transparent to the borrower, so that the broker acts in the interest of its client, rather than its own. For example, in certain states in the USA, in addition to all costs associated with the loan, the borrower must be also informed on the exact income the broker will realise on the deal (this system, however, also has some imperfections, e.g. with respect to YSP-s[45]). The regulations are similar in the UK (however, the use of YSP is less frequent, as the remuneration of brokers is typically based on the loan amount). In addition, brokers cannot be considered independent brokers in the UK unless they offer the products of several lending institutions at the same time.

- Regulation of the relationship between the lending intermediary and the lending institution (bank): usually to facilitate more competition, there are relevant rules in certain countries that influence the balance of power between the intermediary and the lending institution. For example, British regulations prohibit that banks define commissions on the basis of the performance of customers acquired by brokers (sort of like splitting the margin) which, in addition to facilitating competition, eventually benefits brokers (and borrowers), as they can transfer their existing clients to other lending institutions.

Loan mediation has a relatively short history in Hungary, hence the relevant regulation is rather lax. However, the Act on Credit Institutions and Financial Enterprises makes provisions regarding the framework of general conditions pertaining to the provision of intermediary financial services,[46] and general guidance is also provided by Act CXVII of 2000 on Independent Commercial Agents. These are only high level provisions regarding the general framework of loan mediation, and there are no relevant consumer protection rules in this regard. Similarly, there are no provisions in effect regarding the financial education and professional skills expected of brokers (practically anybody can become a broker), and lending intermediaries are not required to disclose the amount of their commission to the customers. Moreover, there are no rules to define the product variety that may be offered by an independent broker; thus a loan broker may call him/herself independent if he/she is in contact with several credit institutions, but offers the product of only one credit institution per product type. The Hungarian Financial Supervisory Authority (HFSA) is responsible for the supervision of intermediary services, and has paid special attention to these activities due to the recent popularity of this distribution channel. Its control, however, focuses on bank participants rather than lending intermediaries (in contrast, the British Supervision oversees brokers as well).

Of the international examples, we should consider adopting those which improve the transparency of broker's incentives to the customers. It would be a step forward if brokers had to disclose the number of credit institutions whose products they offer, to report in advance the minimum amount of product options they will offer, and to inform the client on the exact amount of commission they would receive on individual products.

On the other hand, regulatory intervention regarding the intermediary-lending institution relationship does not appear necessary at this time: the bargaining position of brokers against banks can be currently considered strong. In the case of several banks, 30-40 percent of total sales by brokers are associated with the three brokers with the largest turnover; in addition to their high share in total sales, their bargaining position is improved by low fixed operating costs.

[45] Yield Spread Premium: the broker receives a YSP if the loan it mediates is more expensive than the minimum expectation of the lending institution.

[46] The Act on Credit Institutions and Financial Enterprises refers to two types of brokers, the main difference between them being that one acts to the benefit, in the name and on behalf of the financial institution, while the second does not take responsibility on behalf of the financial institution and does not manage the customer's funds. Consequently, provisions regarding the activities of the first type are stricter (e.g. they may be performed only by business organisations or cooperatives with legal entity; both the broker and the lending institution are required to apply for a HFSA license). Even if they use brokers for providing financial services, lending institutions are responsible for complying with the regulations and provisions regarding bank secrets and the performance of financial services. In addition, in the case of any offence, the HFSA commences proceedings against the financial institutions.

3.5 Challenges of foreign credit institutions' branches

As many as 9 branches of foreign credit institution have commenced operations since the accession of Hungary to the EU (by contrast, 38 domestic credit institutions operate in a non-cooperative, i.e. limited company form). Of these, former subsidiary banks were transformed into branches in 3 cases. A new development, however, is the European Community Directive[47] *allowing and regulating the cross-border merging of capital companies, which was transposed into Hungarian national legislation in December 2007, and appears to be generating additional transformations. By the end of this year the number of credit institution branches operating in the Hungarian banking sector will increase to 11, and current trends suggest that several other domestic subsidiaries may also choose this option in the years to come.*

The most important characteristic of credit institution branch is that they and their non-resident founder share the same legal entity. Their legal standing (rights), however, are practically the same as those of Hungarian-registered credit institutions with respect to their activity and participation in domestic payment transactions, and their relationship with the central bank. On the other hand, a major difference is that the prudential supervision of branches is the responsibility of the supervising authorities of the country of registration, hence domestic authorities have limited authority and information regarding the activity of the founder, and by association, its branch. Deposits collected by the branch are by default insured by the insurance system of the founder's country of registration, however, supplementary insurance may be requested in the domestic system as well.

The European Parliament and Council Directive 2006/48/EC and the domestic regulation on branches transposing it (primarily the Act on Credit Institutions and Financial Enterprises and the Act on Branches and Representative offices[48]) distinguishes between (and treats the former with special attention) the Hungarian branches of credit institutions with a registered seat within the countries of the European Economic Area (EEA)[49] and branches of other enterprises and credit institutions with a registered seat outside of the EEA countries. This report focuses on the Hungarian branch offices of credit institutions within the EEA, in view of the fact that no other credit institution branches have been established in Hungary thus far, and that the regulations concerning the branches of non-EEA credit institutions and their main characteristic features do not differ significantly from the characteristics of subsidiaries. Therefore, we describe below the characteristics of EEA credit institution branch offices only.

In accordance with the fundamental rules regarding the branches of non-resident enterprises based in Hungary, each branch shall be considered an organisational unit of the non-resident enterprise, which has no independent legal entity, which has been invested with economic independence, and which has been registered as an independent company and a branch of the non-resident enterprise at the domestic Court of Registration (Chart 3-19). The Hungarian branch of the credit institution within the EEA acts on behalf and in the representation of the non-resident founding credit institution. Consequently, the branches of credit institutions within the EEA maintain independent (domestic) balance sheets and economic operations,[50] but from a legal perspective any contract or legal transaction they make shall be considered as a contract or legal transaction made by the non-resident founder credit institution.[51]

[47] This Directive (Directive 2005/56/ EC) and the Act transposing it into national law (Act CXL of 2007) allow a credit institution with a registered seat in an EU Member State to unite its interests in an EU Member State (through merger or fusion) in one company. This is a new way to establish the ownership structure of new branches created in this way. The general legal successor of the domestic credit institution following the merger will be the non-resident credit institution, which establishes a branch for its representation.

[48] Act CXXXII of 1997.

[49] The EEA consists of the EU Member States plus Norway, Liechtenstein and Iceland.

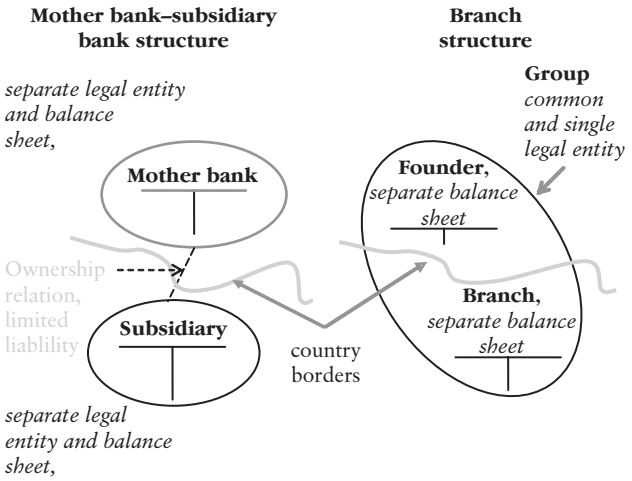
[50] Its special legal standing is also indicated by the fact, that the primary obligation of the branch is to comply with the accounting regulations pertaining to the non-resident enterprise, while at the same time Hungarian law requires that it also prepare an annual report on its activities as a branch, except that in pre-determined cases it may be exempt from the publication and the depositing of the report.

[51] Therefore, even though the branch office is not an independent legal entity, it is a legal subject. It has to be registered as an independent company in the domestic Company Register, i.e. it will qualify as a domestic company and a legal subject, established through registration at the Court of Registry for the purpose of performing economic activity as its business. For the branches of credit institutions within the EEA, the independent company name shall not restrict the right of the non-resident founder credit institution to have disposal over the property and any rights and obligations acquired through its branch office, even under its own company name. Any activity performed by the branch office shall be legally considered as the act of the non-resident founder credit institution itself, 'through its branch office'.

Chart 3-19

The two basic structures of the domestic activities of non-resident credit institutions

(subsidiary vs. branch)



An important principle of the Hungarian regulation, which has been harmonised with Community law, is that all activities performed by the credit institution's branches are subject to the same regulations that pertain to the activities of credit institutions with a registered address in Hungary. Therefore, with the exceptions detailed below, in terms of content and from an economic perspective, credit institution branches may be and shall be considered to have exactly the same rights and obligations as domestic credit institutions with respect to their economic activities, management and balance sheets.

As credit institution branches are not independent legal entities, it is true for all of them that the non-resident founder credit institution is universally and unlimitedly responsible for all liabilities occurring in relation to the activities performed through its branches. In case of bankruptcy proceedings commenced to collect the unpaid debts of a non-resident EEA credit institution accumulated through the activities of its branch, the property of each of its EEA branches shall be involved in the proceedings irrespective of whether the non-resident institution recorded the unpaid debt in its own balance sheet as a founder, or in the balance sheet of one of its branches. Therefore, if bankruptcy proceedings have been commenced against a non-resident enterprise, it may result in the liquidation of its branch (or branches) as well. An important rule is that the proceedings must be commenced in the state where the founder has its registered seat, based on the legislation of that specific country.[52] Thus the basic liquidation process is based on foreign law, and it is controlled by the liquidation officer appointed in compliance with that law.[53]

For a cross-border banking group, there are different financial and administrative *advantages and disadvantages* of establishing a branch vs. maintaining a subsidiary in a given country. Branches do not require their own regulatory capital, as the accumulated capital of the founder (which is typically a significantly higher amount than that of the subsidiary) supports the branch as well. The branch form is more flexible from a taxation perspective as well; as opposed to the parent bank-subsidiary relationship, the legal relationship existing between a founder-branch sharing the same legal entity does not require separate contracts or the formation of transfer prices that comply with the subtle transfer pricing regulations. From the perspective of financing, another advantage is the fact that both market partners and customers may accept the branch more readily as a partner, because in terms of risk it is already equivalent with its founder (e.g. as opposed to subsidiaries, there are no limit issues here, group-level liquidity management is more flexible, etc.). In addition, the branch form has a significant administrative advantage: division of labour within the group (credit institution) is more simple, and easy to implement from a legal standpoint. Moreover, its regulatory / supervisory ('compliance') burden is also lighter: the only intensive communication that is required is with the supervisory authority of the registered seat, through which any communication that may be required with the domestic authority can be performed as well.[54] Another factor not to be overlooked is the fact that branches have a limited number of required officers and committees, and there is no need to set up a separate directorate or supervisory board, as branches are typically managed by one person in charge (chief executive officer) without the participation of any other management body. As opposed to these advantages, however, the disadvantage of the branch form is that the risks and the liabilities associated with its activity are not separated from the founder because of the limited liability corporation form (the founder has unlimited liability). Another disadvantage of becoming a branch is the complicated and expensive nature of the administrative process required for transformation.

[52] Parallel to the proceedings commenced abroad, so-called 'regional' liquidation proceedings must be commenced in the countries of the branches as well.

[53] In practice, this would mean that the assets held at the German branch of a Belgian credit institution shall be also involved in the bankruptcy proceedings commenced on account of the debt acquired by its Czech branch. After the completion of the liquidation proceedings, the founder or its liquidation officer shall dispose over the remaining assets.

[54] Pursuant to the provisions of the Act on Credit Institutions and Financial Enterprises, credit institution branches also pay supervisory fees; the amount of these fees, however, is smaller than in the case of banks or specialised credit institutions. Branches are required to pay only one-tenth of the basic fees paid by banks and specialised credit institutions, while according to our estimates they pay less than half of their variable fees, and a half of their portfolio management fees.

Credit institution branches present several challenges for the central bank and other supervisory organisations. Among other things, branch transformations have an impact on the operation of monetary instruments, the payment system, supervision and deposit insurance.

As the MNB performs operations through its *monetary policy instruments,* it does not distinguish between domestic credit institutions and the Hungarian branch offices of credit institutions within the European Economic Area. Since credit institution branch offices have separate balance sheets and management, they can operate on the interbank forint markets (FX market, depot market, government securities market, etc.), and they can also comply with all technical and operative conditions required of other credit institutions (payment system membership, dealers, KELER securities account, etc.). Therefore, from the perspective of monetary policy instruments, nothing justifies that the MNB should treat credit institution branches any differently than it treats other domestic credit institutions. This approach is consistent with that of the Eurosystem and other European Union central banks.

- Reserve requirements: credit institutions branches with a license for operation or business license, as well as domestic credit institutions are subject to the MNB Decree on the calculation, method of allocation and placement of minimum reserves. Since credit institution branches have their own separate balance sheet, they calculate their minimum reserves on that basis.[55] The regulations pertaining to the minimum central bank reserve requirement do not distinguish between domestic credit institutions and credit institution branches. All domestic credit institutions and branches with a reserve requirement must allocate reserves based on a pre-determined ratio of their liabilities, on which the MNB pays interest calculated at the central bank base rate.

- Eligible counterparties: according to the 'Business terms and conditions of the forint and FX market transactions of the MNB', through its Hungarian branch a credit institution registered in the EEA is entitled to enter into deals with the MNB and perform the same scope of transactions as any other domestic credit institution, provided that it complies with the other technical conditions applying to all organisations.

Regarding payments, similarly to all domestic credit institutions, the branches of credit institutions are included in the credit institution Authentication Table maintained by the MNB, and on the same grounds they can obtain a bank code (better known as 'GIRO code'), which identifies them in the national payment system. The MNB and other operators of the Hungarian payment and settlement systems (GIRO Zrt., KELER Zrt.) do not distinguish branches from domestic credit institutions. They can therefore legally participate in the payment and settlement systems, provided that they comply with the uniform technical requirements pertaining to the system. All three service providers specified above operate according to the principle of equal judgement: the fees they charge for their services are the same whether the participant or customer is a branch or a domestic credit institution. In the domestic payment systems settled by the MNB, credit institution branches are entitled to receive overnight central bank loans against collateral exactly the same way as other credit institutions operating in publicly held company form. Branches are technically connected to the payment and settlement systems the same way as any other domestic credit institution. In the case of EEA Member States, contracts with the Hungarian branches of registered credit institutions are concluded to the credit or to the debit of the non-resident credit institution represented by it.[56]

In addition, credit institution branches are subject to the same prevailing payment regulations as other domestic credit institutions, i.e. with respect to the payment activities of credit institution branches performed in Hungary, Hungarian legislation shall prevail. For the purpose of enforcing its payment regulations, the MNB is entitled to inspect credit institution branches exactly the same way as domestic credit institutions; moreover, it can request additional data regarding the payment activity and other related activities performed by the branch in Hungary.

Regarding the *supervision of credit institution branches*, it can be stated that the prudential supervision of the branches of credit institutions with a registered seat within the EEA is the responsibility of the country of registration ('principle of HOME country supervision'). The purpose of the supervision performed on its activities by the authority of the 'HOST country' is to verify its compliance with the conditions stipulated by the host country for the protection of the common good; therefore, the authority of the country

[55] For branches as well, the amount of the reserve requirement is determined on the basis of the Supervisory Balance Sheet supplied by them.

[56] In the case of credit institution branch offices, there is a specific rule that stems from their legal situation: their participation in the assigned domestic payment and settlement systems requires a case-by-case assessment, depending on whether the founder's country of registration has transposed the EC Directive on settlement finality (98/26/EC) into national law or not. Once this Directive is transposed into the national law of the country of origin, in the case of bankruptcy proceedings against the participant sending the payment order to the system, the Directive will guarantee the legally indefeasible performance of all accepted orders and the protection of the collateral covering the liabilities vis-à-vis the system and its other members.

hosting the credit institution branch office is primarily responsible for consumer protection tasks (e.g. handling consumer complaints).[57]

If a Hungarian branch infringes on prevailing Hungarian regulations or the domestic supervision detects a shortcoming in the operation of the branch, the domestic supervision will give notice to the branch to rectify the irregularity. If the branch fails to comply with the notice, the domestic supervision notifies the supervisory authority of the Member State where the founder's registered seat is located, and may ask the supervisory authority to take the necessary measures. The host supervisory authority is entitled to act directly if in its judgement the irregularity severely jeopardises the stability of the system or customer interests. Such measures taken by host authorities are reviewed by the European Commission ex post, and their justification is assessed retrospectively.

In practice, this means that with respect to domestic branches of foreign credit institutions and the actual activities carried out by them, the supervision of the founder's registered seat is entitled to supervise and understand in depth the group-level activities inseparable for their interpretation.

The establishment of branches also represent challenges from the perspective of deposit insurance. The branch of a credit institution with a registered seat in another EEA Member Country is not required to join the National Deposit Insurance Fund of Hungary (OBA), if it has a deposit insurance in compliance with the relevant European Parliament or Council Directive (94/19/EEC) through its founder, or an equivalent. Otherwise, i.e. if it has no such deposit insurance, the credit institution branch office will be required to join the OBA for the purpose of insuring its deposits.

In addition, the Act on Credit Institutions and Financial Enterprises has regulations covering cases where even though the credit institution branch has deposit insurance in compliance with the European Parliament and Council Directive 94/19/EEC or an equivalent, the insurance that the OBA would provide would be more favourable than the existing insurance system covering the credit institution branch. Namely, if the highest deposit insurance amount, the volume of insured deposits, or the amount of indemnity provided by the OBA exceeds the highest amount, the volume of insured deposits or the amount of indemnity provided by the deposit insurance system covering the branch of the credit institution with a registered seat in another EEA Member State, on the request of the credit institution branch, the OBA will provide a supplementary insurance for the part in excess, provided that the branch complies with the requirements OBA members are subject to and that the credit institution branch has joined the OBA.

EU Member States have a wide variety of deposit insurance systems, however, based on EU convergence rules, the insured amount must be at least EUR 20,000 in all cases. 10 Member States apply the deductible system (typically 10 per cent). Deductibles are not typically applied in the 'HOME' countries of the group of existing domestic branch offices. Overall, the insurance provided by the OBA is generous by EU standards. Deposit insurance companies must complete the payment of the insurance amount within 3 months in all countries.[58]

[57] In addition, it also performs other supervisory activities, for example supervision with respect to the regulations pertaining to the prevention and circumvention of money laundering.

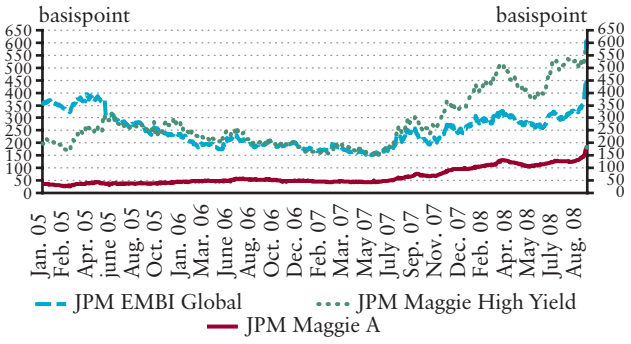
[58] In order to standardise the heterogeneous deposit insurance systems existing in the EU Member States, the relevant Directive is expected to be revised by the end of 2009. Even though no consensus has been reached thus far, the revised Directive may in fact reduce the payment deadline or eliminate the deductible system.

Appendix:
Macro-prudential indicators

1 Risk appetite

Chart 1

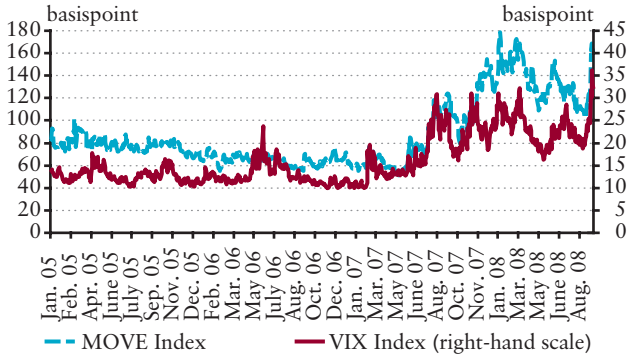
Primary risk indicators



Source: Datastream, JP Morgan.

Chart 2

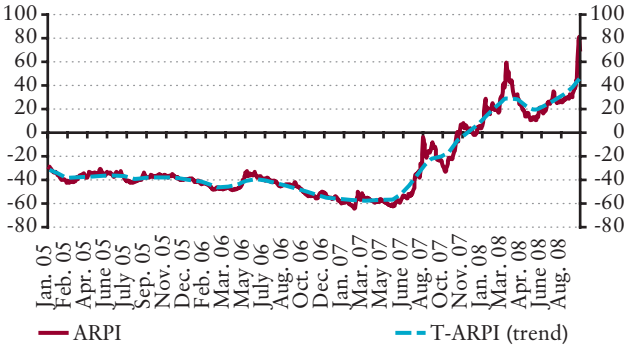
Implied volatility of the primary markets



Source: Datastream, Bloomberg.

Chart 3

Dresdner Kleinwort indicator



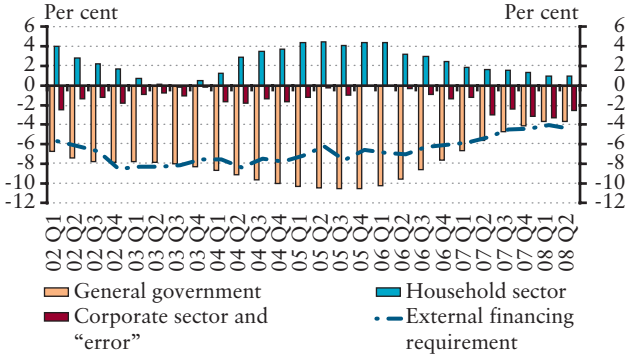
Source: DrKW.

2 External balance and vulnerability

Chart 4

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

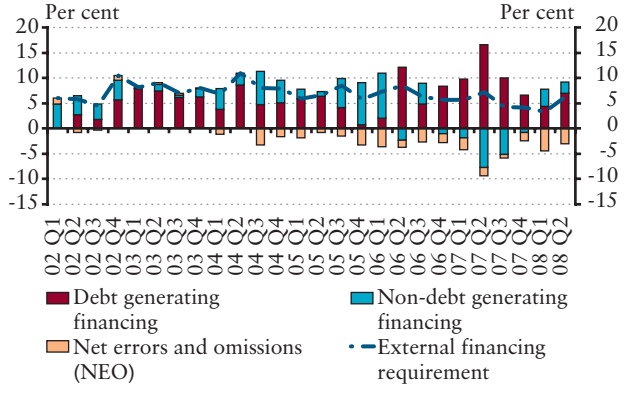
(seasonally adjusted)



Forrás: MNB.

Chart 5

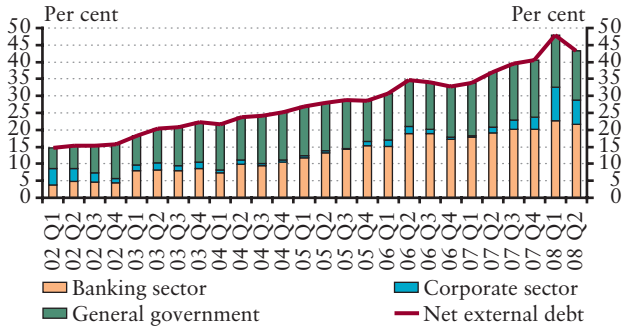
External financing requirement and its financing as a percentage of GDP



Forrás: MNB.

Chart 6

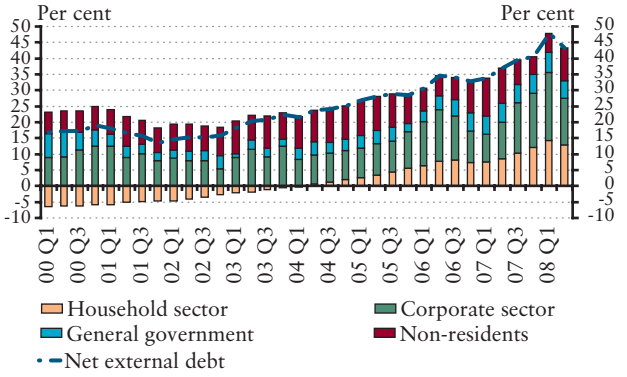
Net external debt as a percentage of GDP



Source: MNB.

Chart 7

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



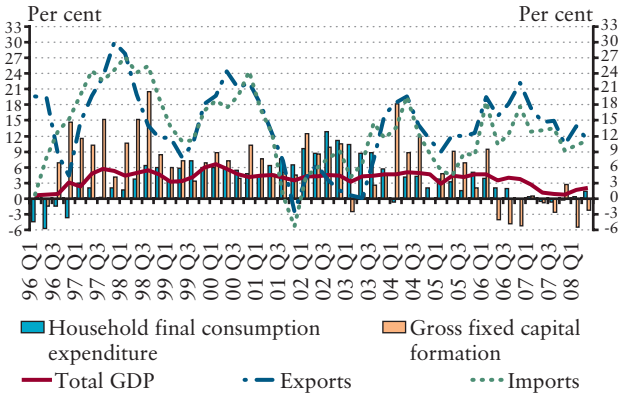
Source: MNB.

3 Macroeconomic performance

Chart 8

GDP growth and its main components

(annual growth rate)

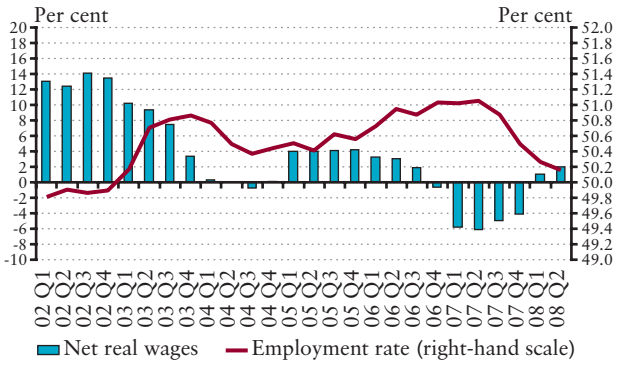


Source: HCSO.

Chart 9

Employment rate and net wage developments

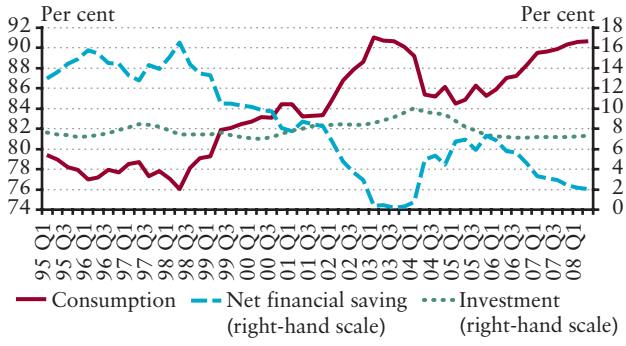
(annual growth rate)



Source: HCSO.

Chart 10

Use of household income as a ratio of disposable income

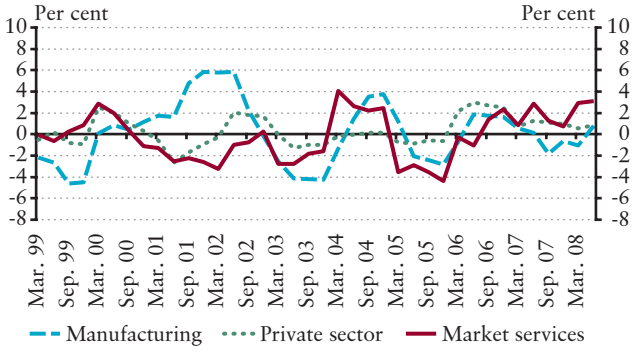


Source: HCSO and MNB.

Chart 11

Corporate real unit labour cost in the private sector

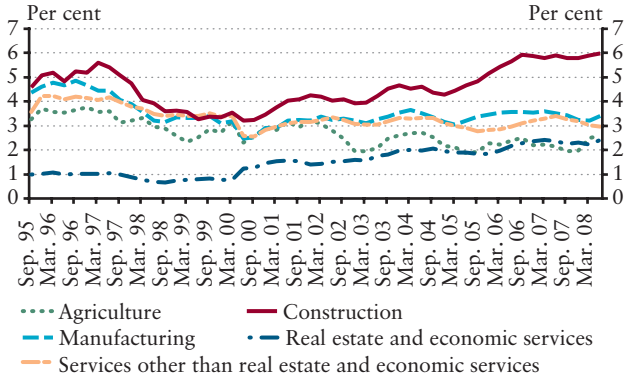
(annual growth rate)



Source: HCSO and MNB.

Chart 12

Sectoral default rates

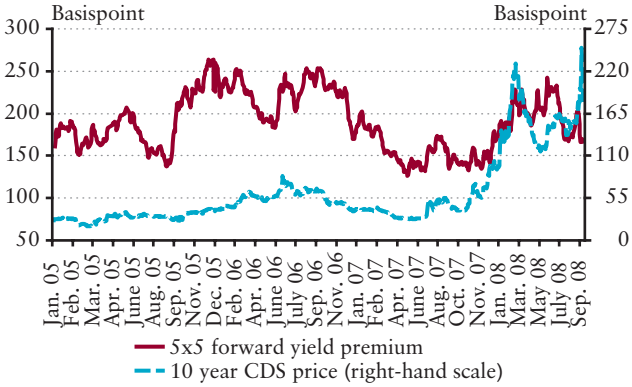


Source: Opten, MNB and HCSO.

4 Monetary and financial conditions

Chart 13

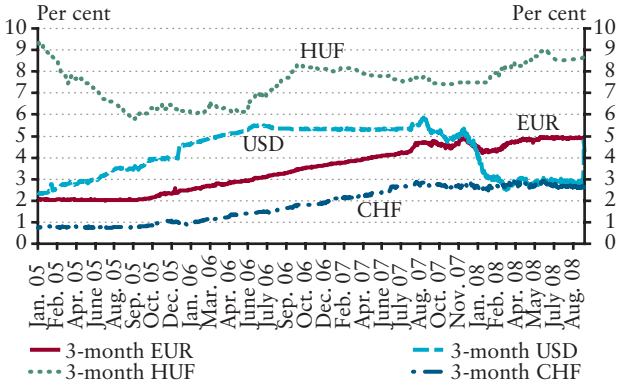
Long-term default risk and forward premium of Hungary



Source: Datastream, Reuters.

Chart 14

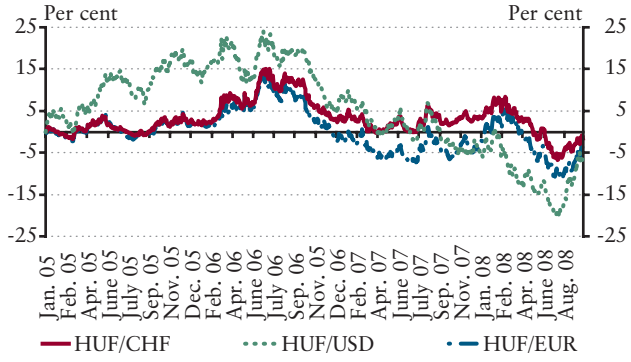
Three-month EUR, USD, CHF and HUF money market interest rates (LIBOR and BUBOR fixing)



Source: Reuters.

Chart 15

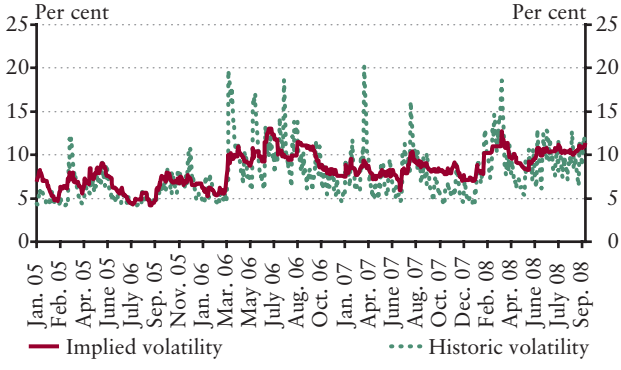
HUF/EUR, HUF/USD and HUF/CHF exchange rates compared to January 3, 2005



Source: Reuters.

Chart 16

Volatility of the HUF/EUR exchange rate

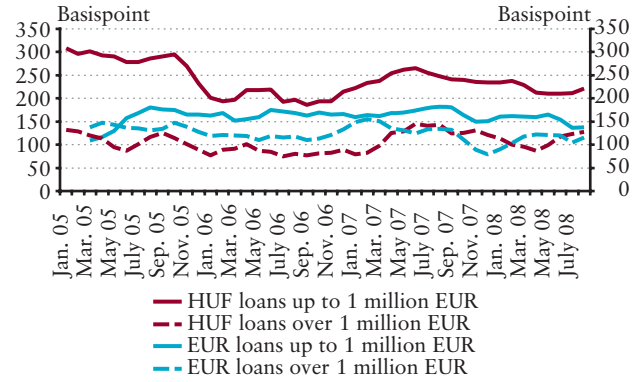


Source: MNB, Reuters.

Chart 17

Interest rate premium of new loans to non-financial enterprises

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

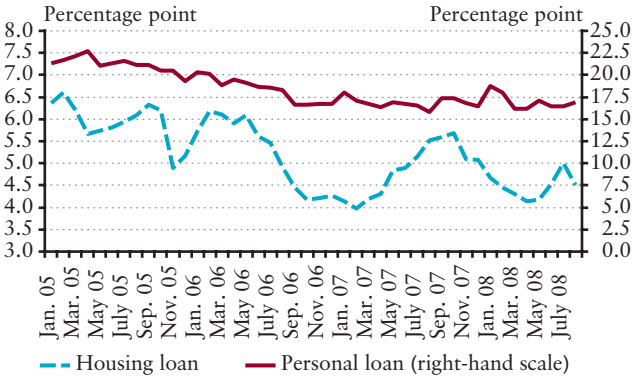


Source: MNB, Euribor.

Chart 18

Interest rate premium of new HUF loans to households

(over 3-month BUBOR)

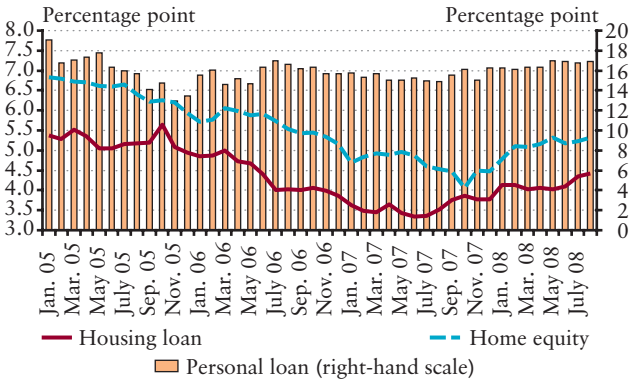


Source: MNB.

Chart 19

Interest rate premium of new CHF loans to households

(over 3-month CHF LIBOR)

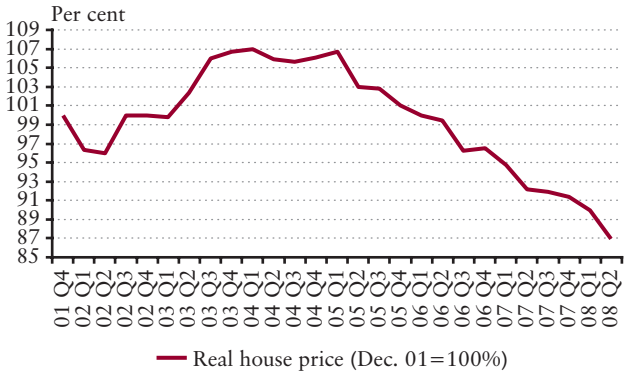


Source: MNB.

5 Asset prices

Chart 20

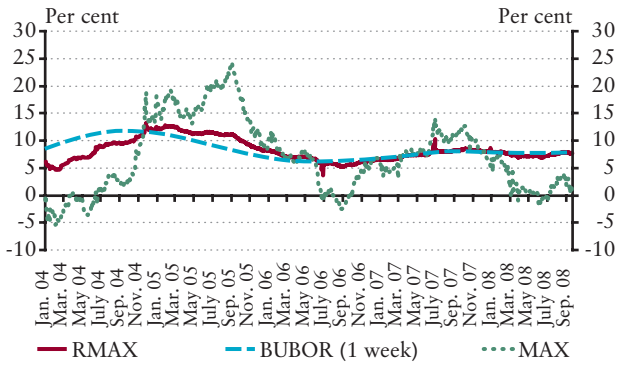
Home prices



Source: Origo.

Chart 21

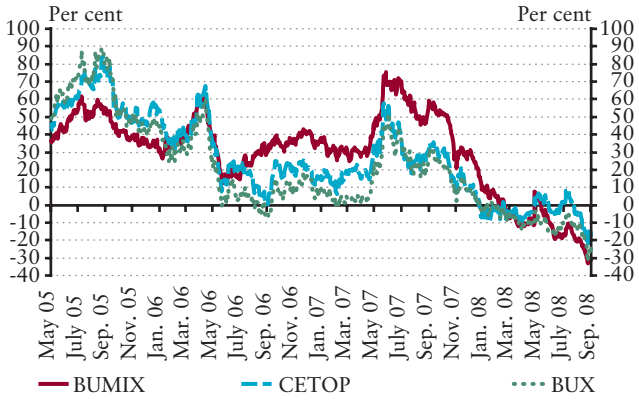
Annualised yields on government security indices and money markets



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

Chart 22

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

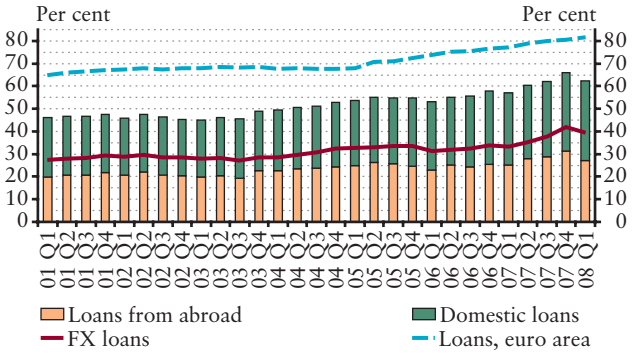


Source: BSE, portfolio.hu.

6 Risks of the financial intermediary system

Chart 23

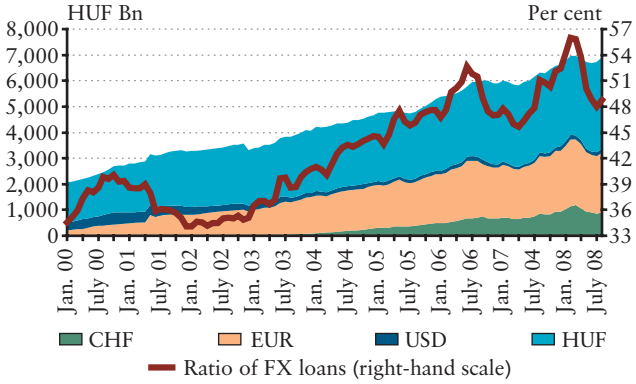
Indebtedness of non-financial enterprises as a percentage of GDP



Source: MNB, Eurostat.

Chart 24

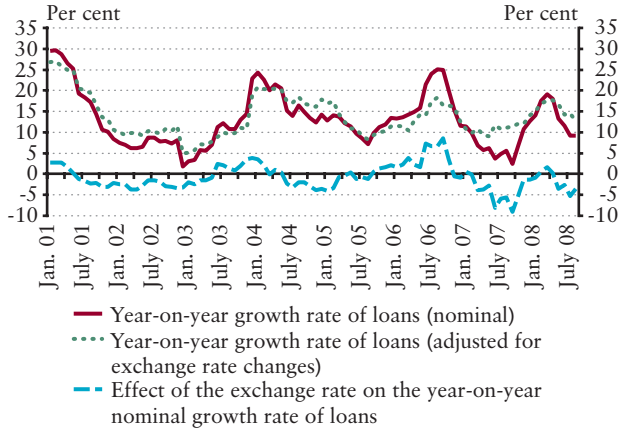
Denomination structure of domestic bank loans of non-financial enterprises



Source: MNB.

Chart 25

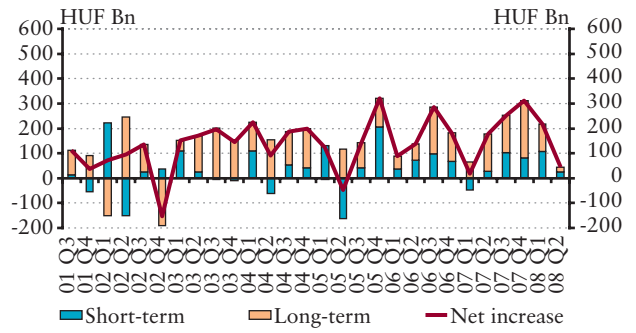
Annual growth rate of loans of non-financial corporations from domestic banks



Source: MNB.

Chart 26

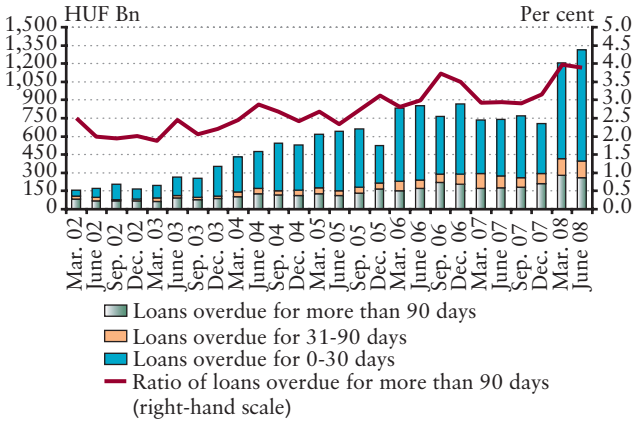
Net quarterly change of bank loan volumes of non-financial enterprises



Source: MNB.

Chart 27

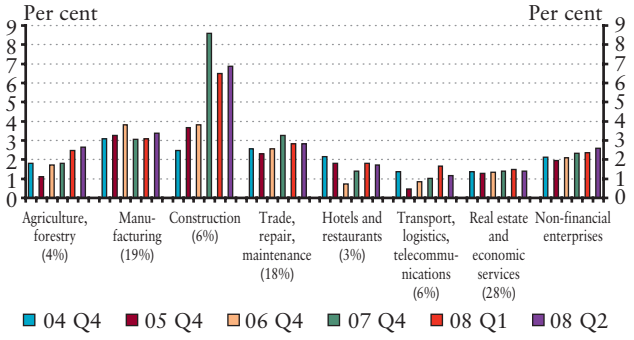
Overdue loans in the corporate portfolio of the banking sector



Source: MNB.

Chart 28

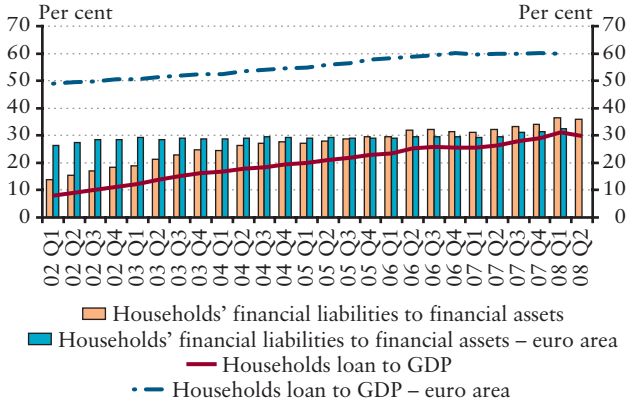
Provisioning on loans of non-financial corporations by industry



Source: MNB.

Chart 29

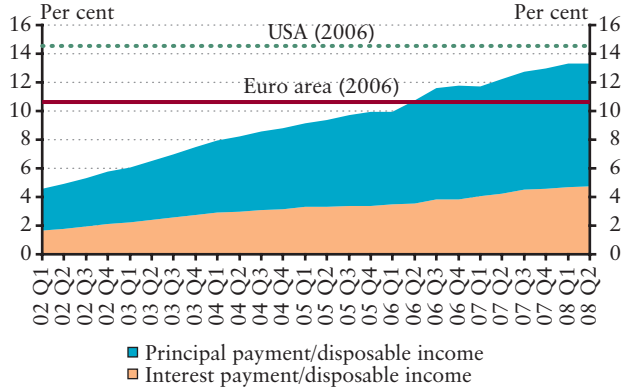
Indebtedness of households in international comparison



Source: MNB, ECB.

Chart 30

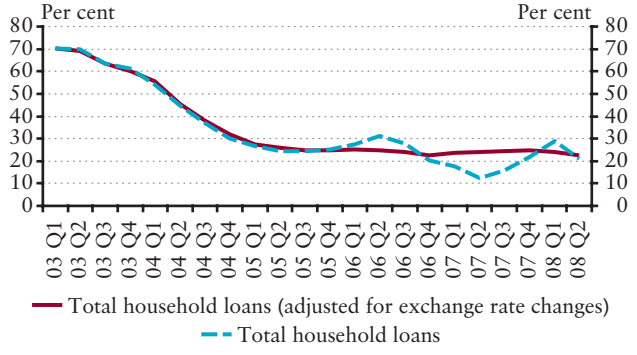
Debt service burden of the household sector as a percentage of disposable income



Source: MNB, ECB, Fed.

Chart 31

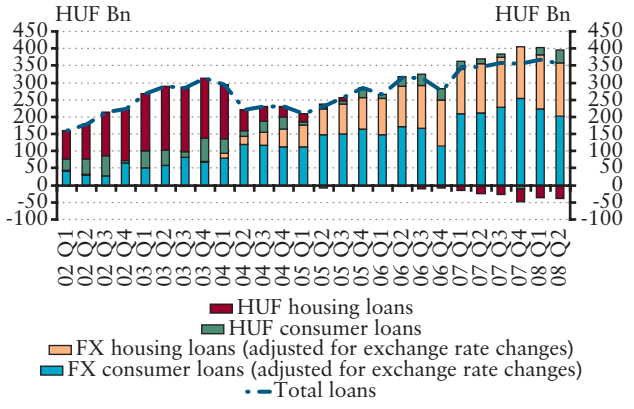
Annual growth rate of household loans



Source: MNB.

Chart 32

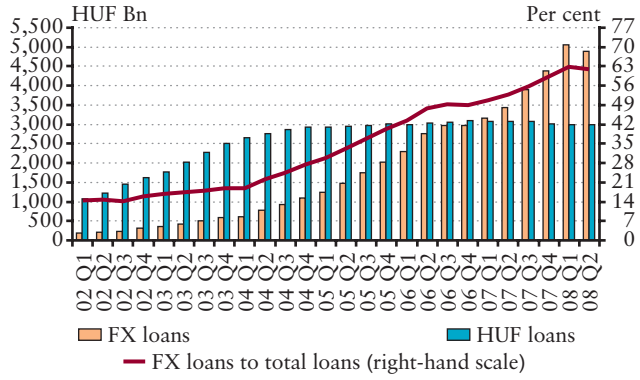
Net quarterly change of bank loan volumes of households by main products and currencies



Source: MNB.

Chart 33

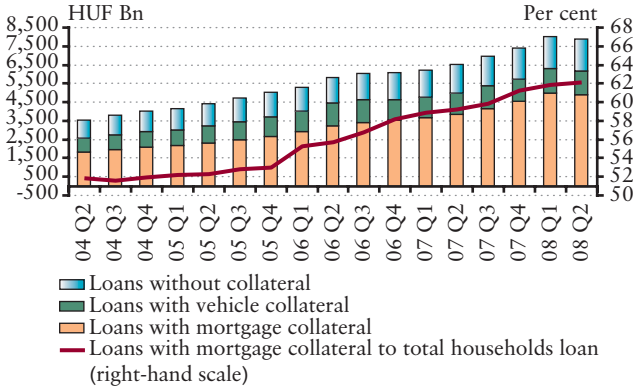
Household loans distribution by denomination



Source: MNB.

Chart 34

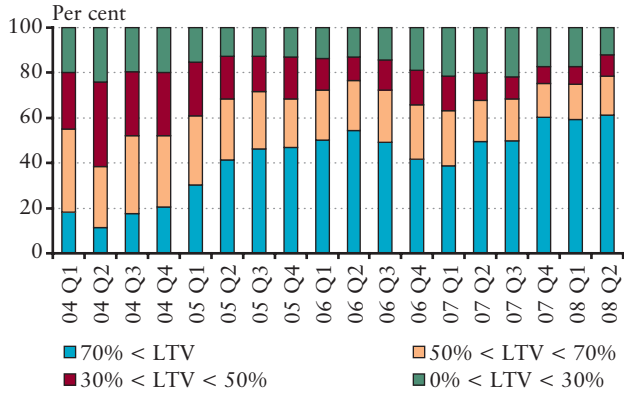
Household loans distribution by collateral



Source: MNB.

Chart 35

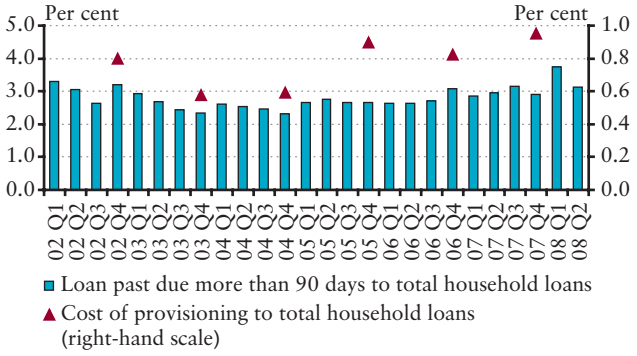
Distribution of new housing loans by LTV



Source: MNB.

Chart 36

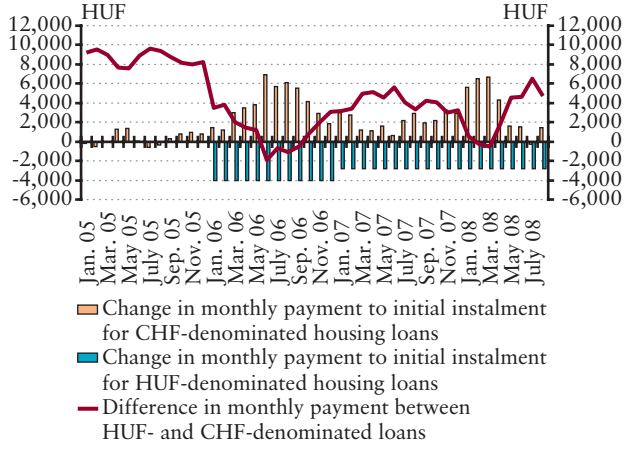
Quality of the household loan portfolio



Source: MNB.

Chart 37

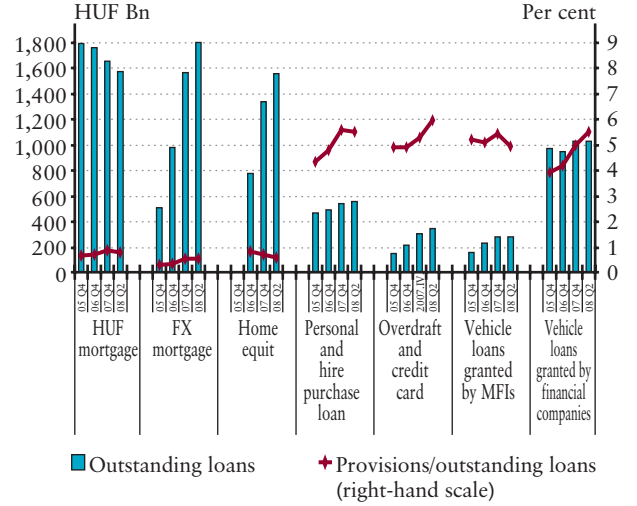
Comparison of instalment payments of CHF- and HUF- denominated housing loans



Source: MNB.

Chart 38

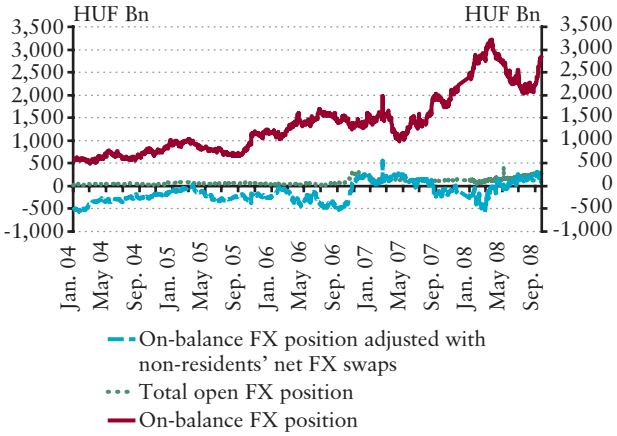
Provisioning on household loans



Source: MNB.

Chart 39

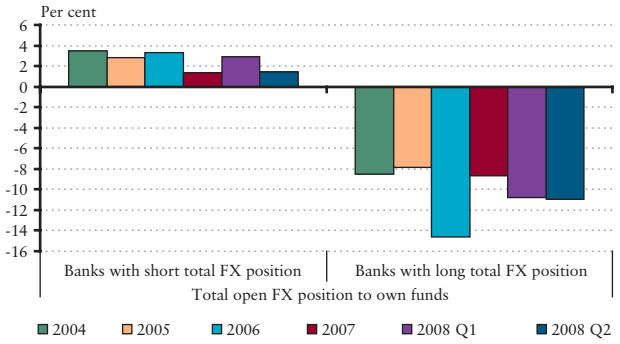
Open FX position of the banking sector



Source: MNB.

Chart 40

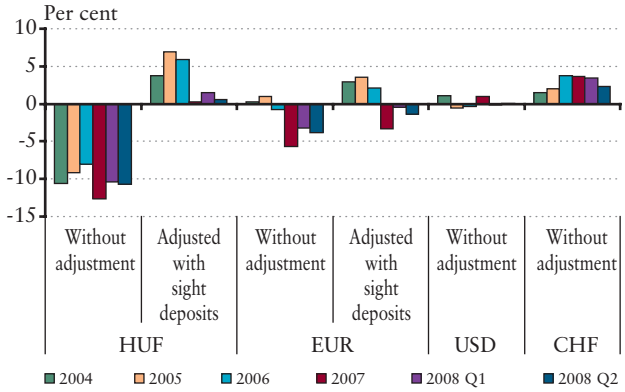
Banking sector's exchange rate exposure



Source: MNB.

Chart 41

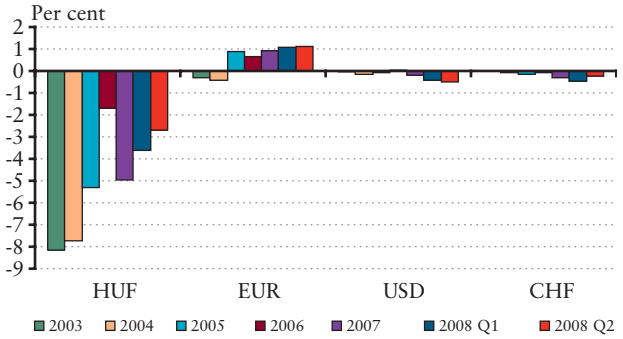
90-day re-pricing gap of the banking sector



Source: MNB.

Chart 42

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

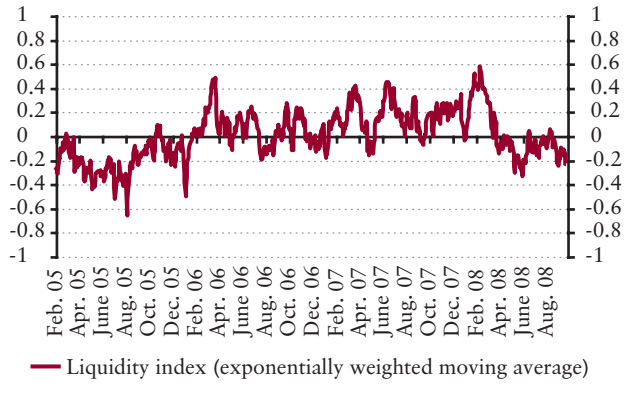


Source: MNB.

Chart 43

Liquidity index

(exponentially weighted moving average)

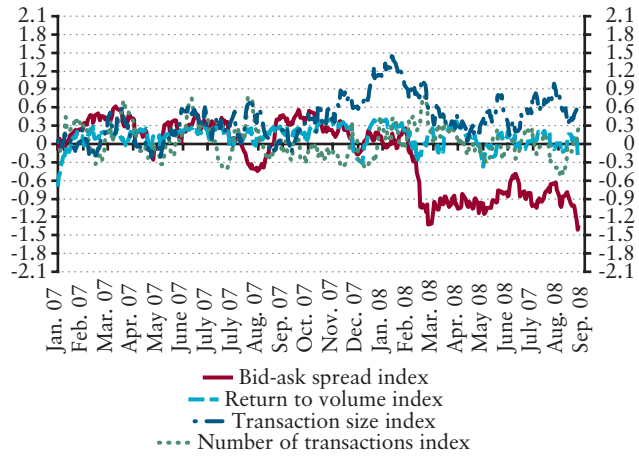


Source: MNB, KELER, Reuters, DrKW.

Chart 44

Liquidity sub-indices

(exponentially weighted moving average)

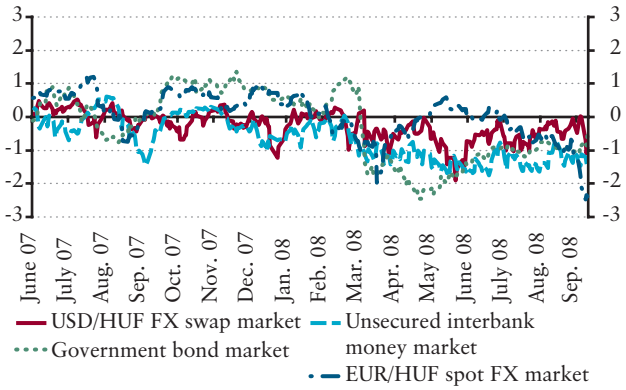


Source: MNB, KELER, Reuters, DrKW.

Chart 45

Bid-ask spread indices of the major domestic financial markets

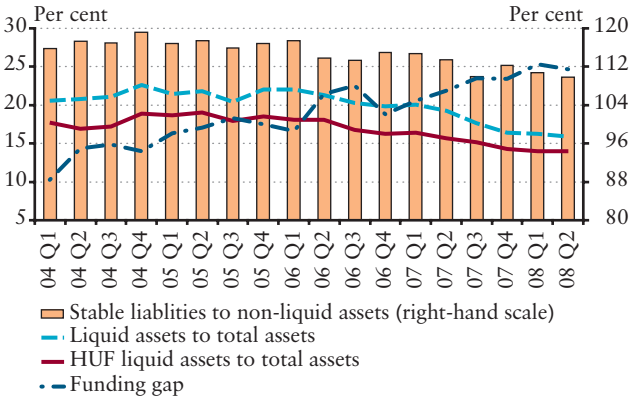
(exponentially weighted moving average)



Source: MNB, KELER, Reuters, DrKW.

Chart 46

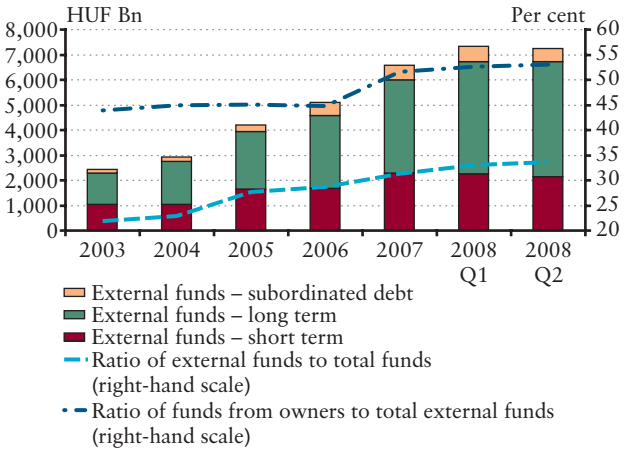
Liquidity ratios of the banking sector



Source: MNB.

Chart 47

External funds of the banking sector



Source: MNB.

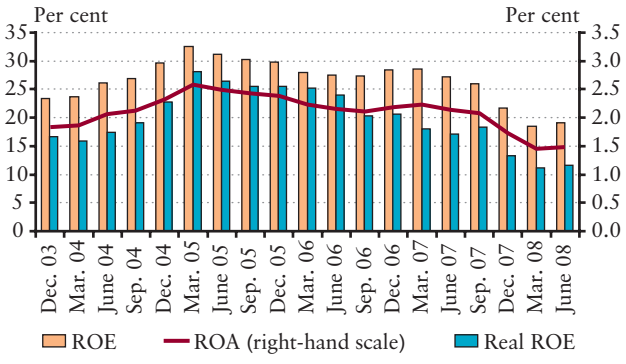
Chart 48

"One month" liquidity stress indicator of the banking sector

Source: MNB.

Chart 49

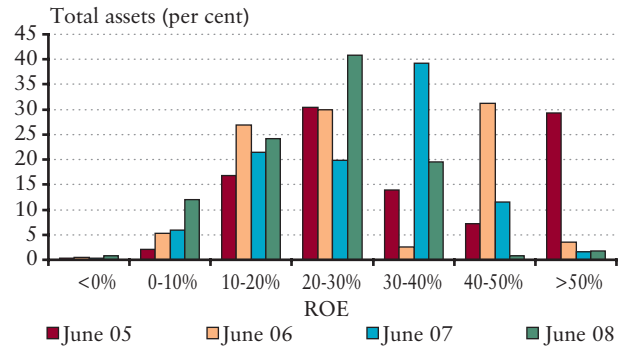
ROA, ROE and real ROE of the banking sector



Source: MNB.

Chart 50

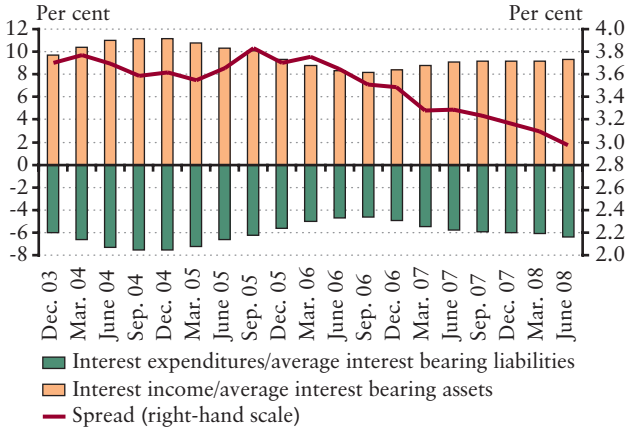
Dispersion of banks' total assets by ROE



Source: MNB.

Chart 51

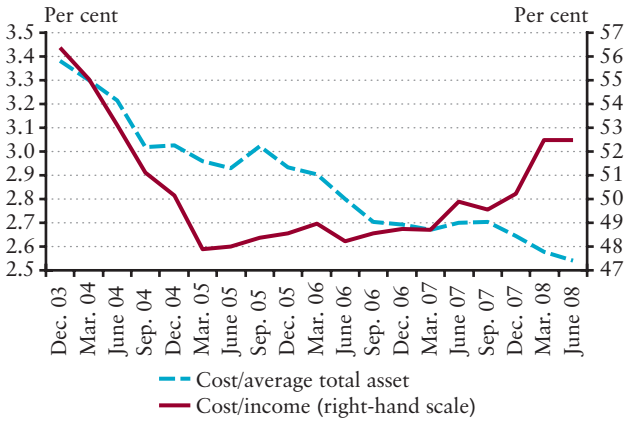
Banking sector spread and its components



Source: MNB.

Chart 52

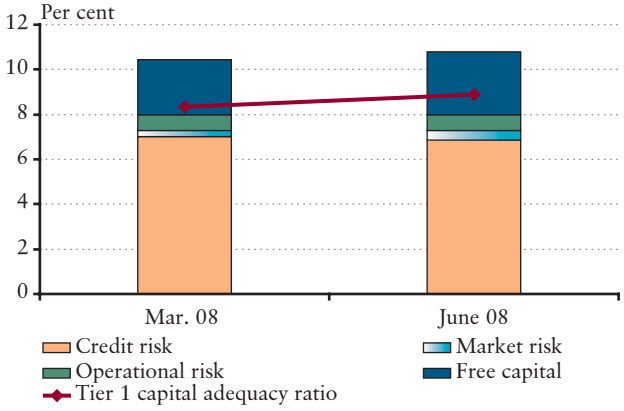
Operating efficiency indicators of the banking sector



Source: MNB.

Chart 53

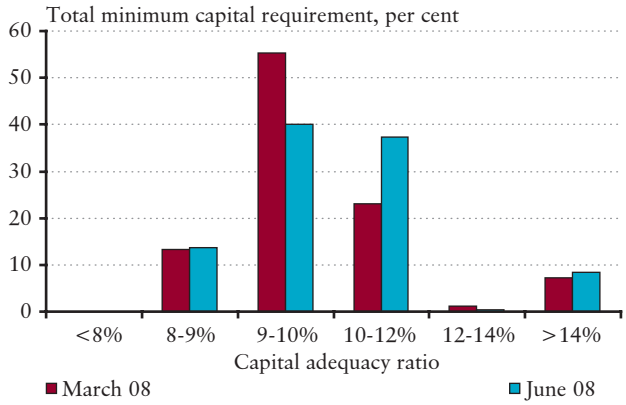
Banks' capital adequacy ratios



Source: MNB.

Chart 54

Dispersion of banks' minimum capital requirement by capital adequacy ratios

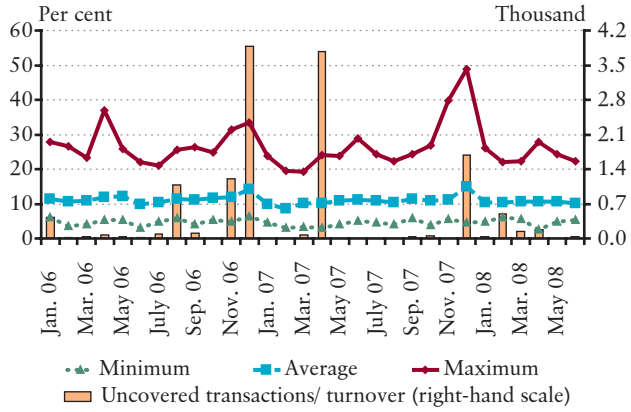


Source: MNB.

7 Risks of the payment systems

Chart 55

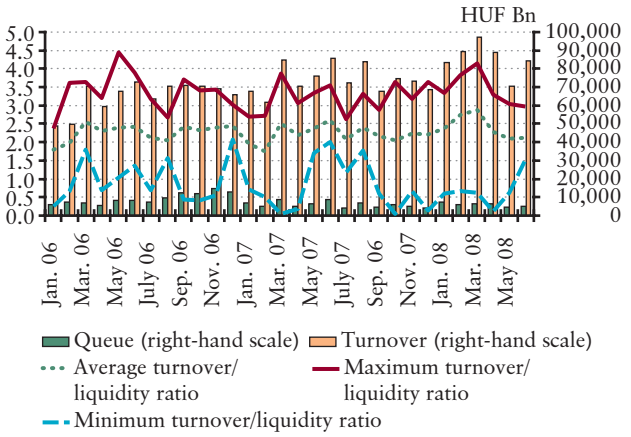
Liquidity needed for settling IBC-turnover as a percentage of available liquidity and uncovered transactions as a percentage of the turnover



Source: MNB.

Chart 56

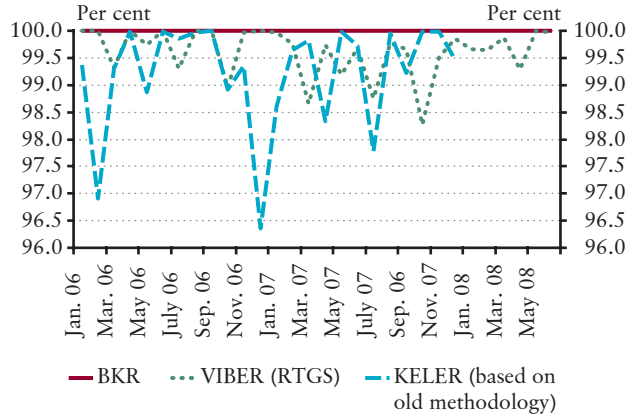
Monthly turnover/liquidity ratio (VIBER) and monthly turnover and queue statistics



Source: MNB.

Chart 57

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



Source: MNB.

Notes to the Appendix

The chart date (e.g. 2007) means the end of the year (31 December) unless otherwise indicated.

Chart 1:
An increased value of the indicator indicates declining risk appetite or increasing risk aversion.

Chart 2:
VIX: implied volatility of S&P 500 (CBOE).

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

Chart 3:
An increased value of the indicator indicates declining risk appetite or increasing risk aversion.

Chart 4:
General government: according to SNA methodology.

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

External financial 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 5:
The sum of components of financing does not equal the financing requirement due to the high volume of the "Net errors and omissions" in the Balance of payments statistics.

Chart 10:
Disposable income is estimated by the MNB using household consumption, investment and financial savings data.

Chart 12:
Number of bankruptcy proceedings of legal entities, aggregated as of the date of publication and 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 10-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 25:
FX loans, exchange rate as of end-December 2000.

Chart 26:
FX loans, exchange rate as of end-December 2000.

Chart 39:
An increase in the swap stock stands for swaps with a long forint spot leg. Based on the daily FX reports of credit institutions. Calculated from swap transactions between credit institutions and non-resident investors. The MNB does not take responsibility for the accuracy of the data. Revisions due reporting errors and non-standard transactions can lead to significant subsequent modifications of the data series. The data series does not include swap transactions between specialised credit institutions, cooperative credit institutions, branches and non-resident investors.

Chart 42:
The interest rate risk stress test indicates the projected result of an extreme interest rate event; in this scenario this event is a parallel upward shift of the yield curve by 500 basis points for the forint, and by 200 basis points for the euro, the US dollar, and the Swiss franc. For the calculations we applied re-pricing data and the Macaulay duration derived from them.

Chart 43:
A rise in the liquidity index indicates an improvement in the liquidity of the financial markets.

Chart 44:
Similarly to the liquidity index, an increase in liquidity sub-indices suggests an improvement in the given dimension of liquidity.

Chart 45:
A rise in the indices represents a narrowing bid-ask spread, thus an increase in the tightness and liquidity of the market.

Chart 48:
Stress scenario: we assume a bank-specific liquidity shock that may originate, for example, from a crisis of confidence. Main assumptions:

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

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

Chart 49:
ROE: pre-tax profit / (average equity – balance sheet profit).

ROA: pre-tax profit / average total assets.

Interim data are annualised.

Pre-tax profit: previous 12 months.

Average total assets: mean of previous 12 months.

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

Deflator: same month of previous year=100 CPI (per cent).

Chart 50:
Pre-tax profit.

Chart 51:
Interim data are annualised.

Interest income: previous 12 months.

Interest expenditure: previous 12 months.

Average interest bearing assets: mean of previous 12 months.

Average interest bearing liabilities: mean of previous 12 months.

Chart 52:
Costs: previous 12 months.

Income: previous 12 months.

Average total asset: mean of previous 12 months.

Chart 53:
Capital adequacy ratio (CAR) = (total own funds for solvency purposes/minimum capital requirement)*8%.

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

Chart 56:
Start-of-day balance adjustments and central bank payments are excluded.

Chart 57:
Due to differences in the nature of the overseen systems and in the calculation methodology, comparing the availability ratios can be misleading. The calculation methodology for the availability ratio of KELER was changed in January 2008. The ratios based on the new and old methodologies are not comparable, which is why we will publish the data based on the new methods for KELER in separate time-series.

Report on Financial Stability

– update –

October 2008

Print: D-Plus

H–1037 Budapest, Csillaghegyi út 19–21.