



MAGYAR NEMZETI BANK

**REPORT
ON FINANCIAL
STABILITY**

OCTOBER 2005

Report on Financial Stability

October 2005



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the Economics Department,
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Published by: Magyar Nemzeti Bank

Publisher in charge: Gábor Missura

8–9. Szabadság tér, Budapest 1850

www.mnb.hu

ISSN 1586-8044 (printed)

ISSN 1586-8346 (on-line)



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

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

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

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

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Overview of main risks and issues

The predictability of the trajectory and the growth potential of the Hungarian economy is significantly constrained by imbalances of magnitudes which cannot be sustained over the long run. Vulnerability stems mainly from the fact that in recent years the government deficit has remained persistently high and fiscal policy has departed strongly from the path undertaken in the convergence programmes submitted to the European Commission. The budget bill currently under debate in parliament does not envisage measures which would decrease the vulnerability of the Hungarian economy, and according to our information the departure from the convergence path will increase.

Previously, the Government's announced intention to adopt the euro in 2010 and the accompanying fiscal consolidation was considered by investors as a kind of guarantee that the economy would return to the equilibrium path soon. The persistently high government deficit increases the vulnerability of the Hungarian economy through two channels. First, the prospect of entry into the euro area has been less and less able to keep the financing costs of the economy at a low level. Second, due to significant external imbalances arising from the high general government borrowing requirement, government debt and the country's foreign indebtedness have both been rising rapidly. Rising indebtedness in a risky structure and uncertainty surrounding the future adoption of the euro are detrimental to the assessment of risks facing the country and reduce the ability of the economy to weather shocks. Furthermore, obtaining a clear picture of the future path of the economy is rendered more difficult by the fact that the reliability of trade balance – and thus current

account – data has become questionable, as net errors and omissions reached 2.3 per cent of GDP in the last four quarters.

Due to the strong risk appetite prevailing in global financial markets, domestic money markets and capital markets have been relatively stable in the recent period, despite the persistently high twin deficit. However, due to the increased vulnerability of the economy, the negative effects of a potential change in the currently benign international business climate and favourable financing conditions are now judged to be higher than in earlier periods.

In our assessment, a potential correction to global economic imbalances and the high and possibly rising world market price of oil represent risks which adversely affect global economic activity. Such potential shifts in the international business climate may influence Hungary indirectly, through a fall in demand in the country's major trading partners, and directly, leading to permanently sluggish economic growth.

The currently very favourable external financing environment may also change as a consequence of global and country-specific factors. Surprisingly low US long-term yields may soon increase significantly, or global imbalances may start to adjust, which, in turn, may lead to a reduction in global risk appetite. At the same time, the persistence of twin deficits, caused by the postponement of fiscal adjustment, and the potential delay in the adoption of the euro may result in higher required risk premia on forint-denominated investments.

Unfavourable shifts in external financing conditions may lead to significant exchange rate depreciation and rises in yields. As economic agents without natural hedge have built up large foreign

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currency exposure in their balance sheets, any abrupt changes in the forint exchange rate and yields may lead to a significant setback in the rate of economic growth in Hungary.

The unsustainable macroeconomic imbalances, discussed above, coupled with the resulting possible postponement of the adoption of the euro and the fragility of the external economic recovery, on the one hand, as well as a steady build-up in credit risk, on the other, pose risks to banking sector stability. Increased exchange rate uncertainty, in particular, represents the greatest source of risk for banks. This, in conjunction with robustly rising foreign currency lending, may increase the sector's vulnerability. However, banks' shock absorbing capacity is considered to be good, due to their current stable capital position and outstanding profitability.

The domestic banking sector has increasingly turned its attention to households and SMEs. This has led to financial deepening and an easing of customers' liquidity constraints. However, it has also added to banks' willingness to take risks. As a consequence of problems related to information asymmetry, intensifying competition and easing lending standards, the danger of mispricing risks may arise in certain segments of the market. This process may be further aggravated by the fact that households and SMEs, lacking hedges against exchange rate risk, increasingly borrow in foreign currency. Potential exchange rate or interest rate shocks, triggered or amplified by imbalances in the economy, may raise debt-service burdens significantly, which, in turn, may lead to rising credit losses, in particular in the case of households and SMEs.

The low level of households' financial culture may be a factor contributing to the negative effects of macroeconomic shocks. A large number of clients are probably unaware of the risks related to borrowing in foreign currency. Consequently, unexpected losses may lead to a decline in confidence and a deterioration in the loan portfolio.

In addition to the developments outlined above, a potential deterioration in favourable economic conditions may also cause loan impairment and falling profitability. A slowdown in external demand would affect the corporate sector particularly adversely, but due to the declining labour demand it would also worsen households' financial position, thereby increasing banks' credit losses.

Car finance, dominated by financial enterprises, also carries heightened risks, which may affect the banking sector through parent-subsidiary relations and financing links. Foreign currency loan products, accompanied by easing credit standards, have become almost exclusive in this market, where portfolio quality has deteriorated, even in the period of stable exchange rates and yields. If the macroeconomic risk scenarios, discussed above, materialise, credit losses may rise to high levels.

The efficiency of domestic pension funds' operations and the regulations facilitating it are of prime importance from a financial stability perspective. Currently, we perceive risks in both areas. These include pension funds' cost and performance transparency deficiencies, on the one hand, and contradictions between inadequate legal regulation of management systems and day-to-day operations, on the other. The second pillar may be improved by a revision of the regulations currently in force.

1. Macroeconomic risks





1. 1. Basic macroeconomic projection

The operation and stability of the financial system requires economic participants to prepare for changes in the macroeconomic environment. In terms of financial stability, information is not restricted exclusively to the most likely economic scenario: the expected effects of events that are less likely to take place, but can have a major impact on stability, also need to be analysed. At the moment, it is especially important to identify risk factors with a potentially strong impact, as the basic macroeconomic scenario outlined in the MNB's Quarterly Report on Inflation contains a number of strong assumptions, and thus the likelihood of deviation from the basic projection is higher than usual. In our latest macroeconomic forecast¹ (see Table 1-1), prospective macroeconomic developments could be projected only with a far greater degree of uncertainty than is usually the case. This increased uncertainty is due to the fact that current developments in the international financial environment and the Hungarian economy are highly unlikely to be sustainable in the long term. As ample liquidity is available on global capital

markets, risk premia have dropped to historic lows. Thus, despite the rapid, unbroken increase in the Hungarian economy's external debt in the past three and a half years and the lack of effective government measures to stop this trend, over the past 12 months it was possible to finance the economy at constantly decreasing risk premium, and the foreign exchange market was also relatively stable. Backed by a favourable international upturn, under these financing conditions the Hungarian economy grew at 3.5–4 per cent, while the inflation rate fell rapidly.

At what time these macroeconomic developments may come to a turning-point, however, cannot be reliably forecast. It is similarly difficult to tell how smoothly the economy will be able to return to a sustainable growth path, whether a slow and prolonged process will follow, or a more rapid and convulsive adjustment can be expected. First, we attempt to explore the sources of vulnerability in the baseline macroeconomic projection, and afterwards, using risk scenarios, we show the possible economic consequences of a potential disruption

Table 1-1

Projection on key macroeconomic indicators on the basis of the current issue of the Quarterly Report on Inflation

	Actual	Projection		
	2004	2005	2006	2007
Consumer price index (CPI)	6.8	3.6	1.6	2.9
External demand	1.9	1.6	2.0	2.0
GDP	4.0 (4.2)*	3.6 (3.4)*	3.9	3.8
Current account deficit (as a percentage of GDP)	8.9**	7.6**	8.6**	7.6**

*Note: *GDP growth is adjusted for the leap day. Data without adjustment are given in brackets.*

*** According to recently published information the reliability of the current account data declined, as the value of the items accounted for in the net errors and omissions line reached 2.3 percent of GDP.*

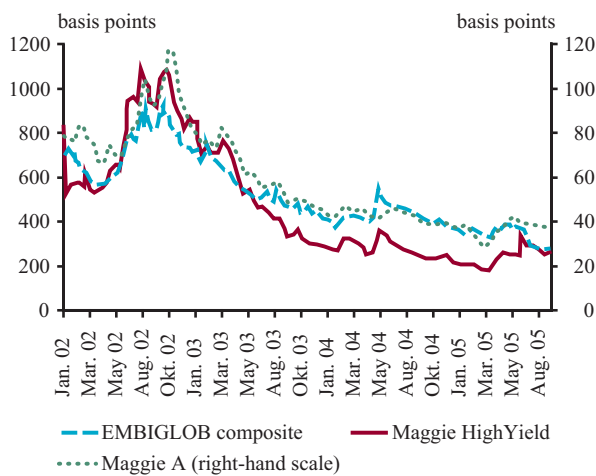
Source: MNB.

¹ See details in the *Quarterly Report on Inflation*, August 2005.

in the conditions that have secured relative stability so far. In our analysis, we examine two risk scenarios: we analyse the potential effects of a slow-down in global growth on the Hungarian economy and we examine what could possibly happen if foreign investors would hold Hungarian assets only under less favourable conditions.

Chart 1-1

Global risk indicators



Sources: Reuters, MNB.

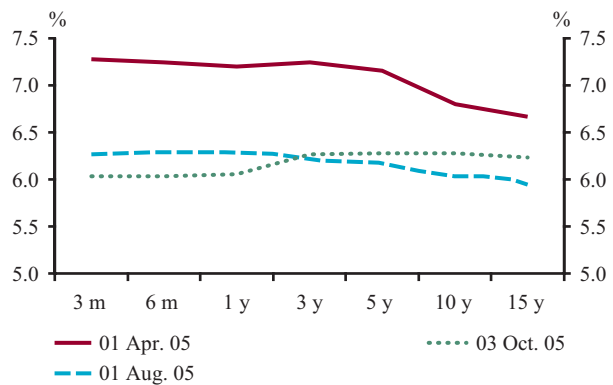
If the capital markets maintain their benign assessment (see Chart 1-1) and the favourable international upturn continues at a low rate of inflation and no difficulty arises in financing the current account, the Hungarian economy can grow at 3.5–4 per cent per year with inflation stabilising at low levels. However, even under this 'basic projection' no major improvement in the external imbalances, and thus no reduction in the vulnerability of the Hungarian economy, can be expected. In the period ahead, the structure of economic growth may turn unfavourable once again, as the main forces boosting economic growth include government fixed investment under PPP arrangements and consumption accelerated by the fiscal measures taken to increase household real income.

The very favourable external financing conditions and the improvement in the inflation outlook were

also reflected in Hungarian yields. Since the last issue of the *Report on Financial Stability*, the entire yield curve has dropped 50–150 basis points; however, since mid-September it increased by 50–70 basis points. Unlike the inverse form that characterised the previous period, it rose above 6 per cent with a slightly positive slope (see Chart 1-2). The current shape of the yield curve suggests that rate-cut expectations have been priced out completely in the short run; nor do market participants expect any easing in the monetary stance over the medium and long run. Furthermore, it can be

Chart 1-2

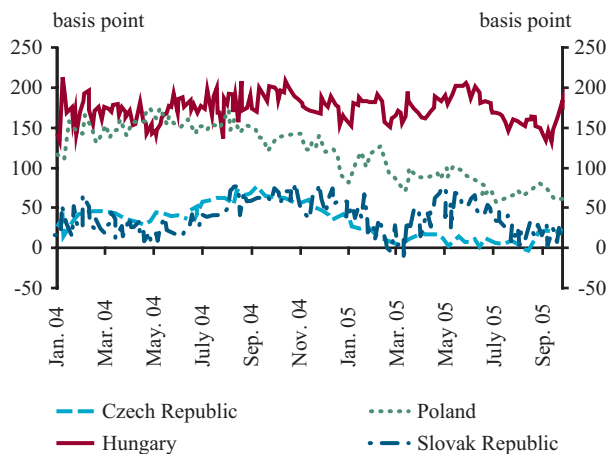
Yield curve at various points in time



Sources: ÁKK, MNB.

Chart 1-3

Forward premia in the region compared to the euro area



Notes: 5-year implied forward rate differentials 5 years ahead.

Source: Reuters, MNB.

observed that due to the vulnerability of the Hungarian economy, market participants permanently demanded higher risk premia compared to other countries in the region (see Chart 1-3). The permanently higher risk premium also reflects that market participants attribute high probability to a shift in the planned euro area entry date of 2010.

1. 1. 1. The twin deficit – the source of vulnerability

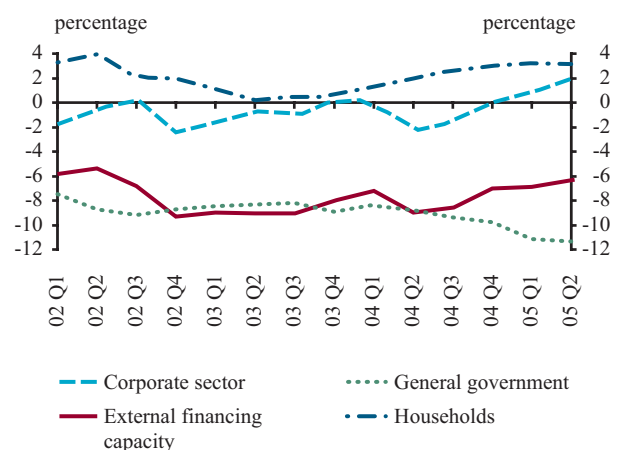
In order to reduce the Hungarian economy's vulnerability and exposure to external shocks, the rise in external and internal indebtedness must be stopped. As corporate sector investments are usually financed by non-debt generating capital inflows, there must be a decline in the financing needs of the household and public sectors combined. However, vulnerability is increased by the growing share of foreign exchange denominated flows within debt-generating inflows as domestic agents increase their exposure to currency risk.

Although 2005 H1 data suggest a decline in Hungary's total borrowing requirement, this has not entailed a decline in the aggregate borrowing requirements of the government and household sectors, and so improvement in the overall external equilibrium seems to be unfounded and not

permanent (see Chart 1-4). In 2005 H1, the slow rise in the financial savings of the household sector was unable to offset the continued increase in the borrowing requirement of the wider general government², thus the aggregate borrowing requirement of the two sectors fluctuated at around 7–8 per cent of GDP. Improvement in the external equilibrium is due to a major fall in the borrowing requirement of the corporate sector, which cannot be directly perceived, but is not typical for economic growth periods. For this reason,

Chart 1-4

Net financing position of various economic sectors



Note: Data is corrected by two distorting factors: before EU-accession the corporate sector has brought forward its import purchases, because of changing customs regime; at the time of EU-accession, the goods of community origin in customs warehouses were recorded as imports.

Source: MNB.

Box 1-1 How large is the bias in the current account due to the change in methodology?

An in-depth examination of the items of balance of payments statistics can provide further information on the reliability of trade data. The net external borrowing requirement of the country can be determined in two ways. 'From the top down': as the sum

of the current account and the capital account, and 'from bottom up': as the sum of the transactions in financial balance. The statistical error originating from the difference between the two approaches is shown in the net errors and omissions (NEO) line

² In a wider sense, the general government includes government organisations, institutions performing quasi-fiscal duties (such as the Hungarian Railways [MÁV] and the Budapest Public Transport Corporation [BKV]), the MNB, and the institutions performing fixed investment initiated and controlled by government, although formally under so-called PPP arrangements.

in the balance of payments. The size of the NEO did not exceed one-half per cent of GDP in the last five years, while the cumulated value of the last four quarters reached 2.3 per cent of

GDP, i.e. the external borrowing requirement compiled from below is higher by this value. Therefore, the developments in financial accounts do not reflect the decline in trade deficit.

the changes required by Hungary's accession to the EU in data provision are considered likely to have played a significant role in the reduction of the external borrowing requirement of the corporate sector and the country.³ Thus, instead of assuming a gradually falling trend in external disequilibrium, the decline can be perceived at most as a one-off development.

The twin deficit has continued to exist, despite the fact that a rapid and substantial reduction in the general government deficit was set as an aim by the Government both in the convergence programme defining Hungary's obligations vis-à-vis the European Union and in the annual budget act, in order to allow for the adoption of the euro in Hungary in 2010 at the latest. The targets were not achieved, the government deficit continuously exceeded the values specified in

the convergence programme, and in 2005 it is expected to reach 7.4 per cent of GDP even according to the Government's plan, which was adjusted in September 2005 (see Chart 1-5.). As the government deficit on an ESA basis⁴ continues to significantly exceed the 3 per cent reference value defined in the Stability and Growth Pact, following EU accession in May 2004, Hungary was subjected to the excessive deficit procedure.

The marked adjustment (raising) of the government deficit target in September 2005 is partly related to the fact that Eurostat drafted a preliminary recommendation with regard to the recording of some budget items. At the same time, the deviation from the original 4.7 per cent deficit target may be much larger, even by 1 per cent of GDP, than the approximately 2 per cent effect of the change in 'method-

Box 1-2 Latest information on the 2005 government deficit

Since the publication of the August issue of the Quarterly Report on Inflation, important information concerning the 2005 ESA deficit has been published, which confirms our doubts expressed several times concerning the previously available ESA deficit figures. The information suggests that the ESA deficit will be much higher than planned earlier, as the Government expects a 7.4 per cent deficit by end-2005, which would exceed the original target of 4.7 per cent by 2.7 percentage points.

One of the significant items (amounting to nearly 1 per cent of GDP) was the 'revenue' from 'selling' the previously-built sec-

tions of motorways to the State Motorway Management Co. Ltd. (ÁAK Rt.), due to which the planned 2005 ESA deficit greatly deviated from the real borrowing requirement of the public sector. Namely, for the general government this transaction would have resulted in a substantial 'revenue' in proportion to GDP. Its statistical assessment was always controversial, as the MNB believed that this was not real revenue expected from outside the general government. The MNB, as a member of the trilateral expert committee set up together with the CSO and the Ministry of Finance in order to calculate

³ See details in Chapter 4.4 in the August 2005 issue of the *Quarterly Report on Inflation*.

⁴ European System of Accounts (1995); for detailed methodological information, see <http://forum.europa.eu.int/irc/dsis/nfaccount/info/data/esa95/en/titelen.htm>.

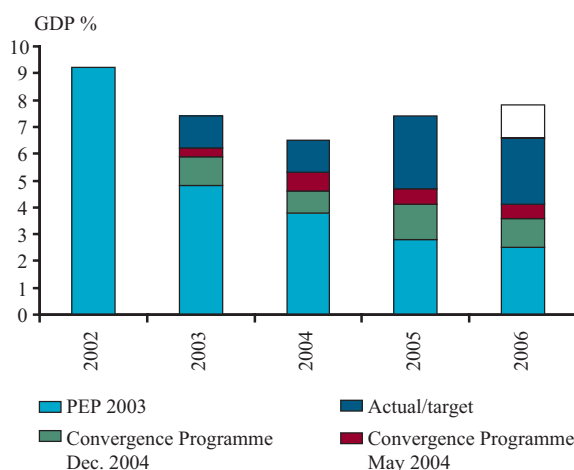
government finance statistics according to the ESA and report them to Eurostat, let the partner institutions know about this in a timely manner, then also expressed its opinion in the regular statistical report sent by the CSO to Eurostat within the framework of the excessive deficit procedure in March 2005. Methodological uncertainty did not allow more than broad-band projections for the ESA deficit in the May and August 2005 issues of the *Quarterly Report on Inflation*.

In order to substantiate the opinion to be submitted to the Ecofin, in the framework of the so-called Excessive Deficit Procedure applied to Hungary, Eurostat carried out (among other revisions) a preliminary inquiry of the acceptability of the transaction reported as a revenue improving the ESA deficit.

Following the consultation with the Eurostat, the Hungarian government decided against including as 'revenue' into the ESA balance the purchase-price related to the planned 'sale' of the previously constructed motorway sections. Due to the fact that early in the year, the construction of new motorway sections was not arranged in Public-Private Partnerships, NA Rt.'s 2005 motorway construction expenditure is expected to remain in the ESA balance, as NA Rt. is state owned established for the purposes of fixed investment projects in motorway construction and is thus included in the government sector. Overall, together with other minor items, the methodological revision initiated by Eurostat increases the 2005 ESA deficit expected by the government by 2.7 per cent of GDP.

Chart 1-5

Government convergence programmes and their fulfilment (ESA deficit as a percentage of GDP)



Note: Based on the 2005 government plan and the 2006 draft budget submitted to Parliament (the effects of a methodological risk involved in the settlement of expenditures related to the acquisition of Gripen aircraft and the motorway construction undertaken by ÁAK Rt., the latter indicated by a white area, are added to the 6.1 per cent target).

Source: FM, MNB.

ology', if the currently perceptible risks continue to exist. On the one hand, on the revenue side the risk of a lower revenue level is perceived to be increasing, and on the other hand, on the expenditures side the risks of higher expenditure at some open-ended items also increased. Moreover, it is questionable to what extent, and especially in what manner, the Government will be able to reduce the expenditure of budgetary units and institutions in the remaining part of the year.

Hungary can meet the requirements specified for the 2010 adoption of the euro if by 2008, the ESA deficit of the government falls below 3.4–3.6 per cent of GDP, depending on the exact revenue losses due to the pension reform.⁵ As fiscal consolidation has hardly progressed in the past three years, increased efforts will be required in the next

⁵ According to the 2004 decision of Eurostat, the ESA deficit cannot be reduced with the revenue losses caused by pension reforms (in certain cases a transitional period of two years were given for preparation, which affects the 2006 deficit for the last time). Thus, in 2008, Hungary's ESA deficit will (once again) reflect the total amount of revenue losses incurred on account of the pension reform. Irrespective of this fact, pursuant to the 2004 reform of the Stability and Growth Pact, in an Excessive Deficit Procedure the adoption of a private pension scheme can be decreasingly considered in the accounts as deficit growth due to a structural reform (provided that otherwise the deficit declines at a significant pace and is close to the 3 per cent reference value). Expressed in numbers, this means that 40 per cent of the revenue losses incurred on account of the pension reform can be considered in the accounts (i.e. added to the 3 per cent Maastricht deficit limit) in 2008. If the revenue losses caused by the pension reform do not exceed 1–1.5 per cent, the targeted (upper) limit may rise to 3.4–3.6 per cent.

few years to adjust the deficit, and the likelihood of successful convergence has declined. As deviation from the convergence schedule adversely affects investor assessment and increases the risk premium, a negative adjustment in the fiscal deficit alone requires increased adjustment and drives up the costs of meeting the criterion in the future.

Considerable risks are seen relating to the future fiscal developments and rapid consolidation. The government has announced a number of planned measures entailing a major deterioration in the fiscal position for several years in advance. The currently discussed 2006 draft budget fails to specify measures to effectively cut the fiscal deficit. The envisaged tightening of operative costs including wages can, at best, offset the earlier announced easing measures (e.g. tax cuts and increased family support) and other determinants (e.g. the acquisition of Gripen aircraft), which have added near 2 per cent of GDP to the 2006 ESA deficit. The 6.1 per cent deficit targeted for 2006, which seems to remain considerably below the 7.4 per cent expected for 2005, conceals the fact that the submitted draft budget fails to indicate the costs of either the Gripen acquisitions (amounting to 0.5 per cent of GDP) or ÁAK Rt.'s motorway construction to be performed in 2006 (amounting to over 1 per cent of GDP).

This accounting approach to expenditure items carries methodological risks: the procurement of Gripen fighter planes constitutes part of the ESA deficit; as to the fixed investment expenditure by ÁAK Rt., whether or not it qualifies as an item that affects ESA depends on a later Eurostat decision. In terms of extended imbalances, it is particularly unfortunate that the reduction in the fiscal deficit, which is currently still surrounded by uncertainty,

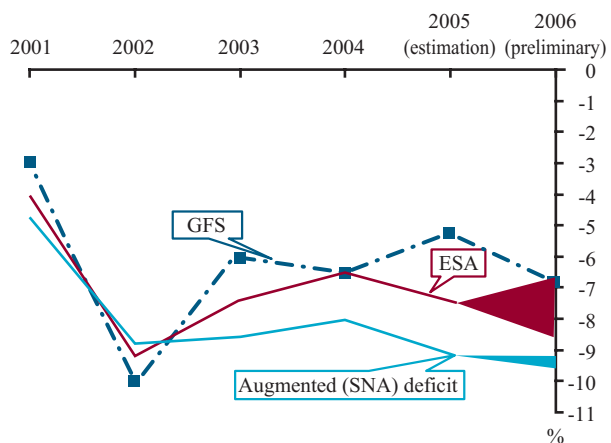
does not involve actual demand contraction; but rather certain items are merely excluded⁶ from the budget defined in accordance with EU regulations. This approach does not reduce the actual external borrowing requirement of general government as a whole. What seems to be a reduction does not, therefore, address the issue of the twin deficit.

Based on the fiscal paths of the past years as well as the 2006 path outlined in the draft budget, we find that the risk that the second announced date set for the adoption of the euro cannot be kept has increased considerably. The government's pledge to introduce the euro in 2010 has influenced developments in the domestic money market via several channels. First, commitment to convergence guarantees that the fiscal deficit and, hence, the current

Chart 1-6

Anticipated outcomes of general government balances for 2006

(As a per cent of GDP)



Note: In GFS government targets; in ESA methodological and implementation risks combined; in SNA the impact of the latter; based on the August 2005 issue of the Quarterly Report on Inflation and data available since then. The augmented (SNA) deficit: cash flow-based general government deficit, excluding extraordinary revenue and expenditure, including off-budget quasi-fiscal activities.

Source: MNB.

⁶ Such change in accounting with no effective impact on demand is the outsourcing government capital investment as PPP and its inclusion in the budget of the Government Debt Management Agency and the carry-over of the debt incurred by state-owned companies. For details, see *Quarterly Report on Inflation*, Section 4.2, August 2005.

Macroeconomic risks

account deficit will decrease significantly in a short time. Second, if the euro is adopted, Hungarian interest rates will approximate to euro yields. Thus, the delay in the introduction of the euro yet again raises the question of how imbalances in the Hungarian economy can be resolved, generating uncertainty in investors as to developments in future interest rates. Therefore, putting off the target date is expected to translate into increased risk premia on long-term forint investments and/or a weaker forint exchange rate, which may set back economic growth (see the risk scenario on changes in financing costs). Third, the delay in the possible beneficial impact of the euro changeover may result in competitive handicap compared to

other countries in the region that do join the euro area. Finally, modification in the schedule for reaching the end of the convergence path may lead to an erosion of market participants' trust, which may entail increasing vulnerability and more volatile capital flows, in addition to heavy external borrowing.

Nevertheless, the current benign global environment of financing, the duration of which is uncertain, may cushion the impact of the aforementioned. Yet, the putting off of the target date means that the Hungarian economy will be exposed to potential changes in investors' risk appetite and the anticipated more hectic capital flows for a longer period of time and against a backdrop of higher vulnerability.

1. 2. Alternative risk scenarios

In an analysis of financial intermediation from the perspective of stability, the consequences of two alternative macroeconomic scenarios are seen as worth assessing. In one of these risk scenarios, an unfavourable turn in the international business cycle would slow growth in the Hungarian economy below the level expected in the basic projection, whereas in the other scenario with presumably more serious consequences, the financing costs of the Hungarian economy would rise considerably.

1. 2. 1. Global economic activity

The basic projection outlined in the Quarterly Report on Inflation is based on the assumption that demand by Hungary's main trading partners will continue to grow at the pace that prevailed in the previous period. Currently, several risk factors can be identified that may considerably slow down the pace of international economic activity. The most significant downside risk to growth is still involved in the eventual adjustment of global imbalances (see Box 1-2) and constantly rising

or persistently high oil prices driven by strong demand and tight capacities. So far the inflationary and growth-moderating impact of rising oil prices can be considered relatively moderate by global standards. As a result of powerful demand pressure, tight capacities and geopolitical factors, petroleum prices have increased by an additional 20–25 per cent in comparison to the previous issue of the Quarterly Report on Inflation. Slow adjustment by the global oil producing capacities and refineries, and a single specific event, the devastation caused by Hurricane Katrina, carry a risk towards considerably reduced oil production and refining in the Gulf of Mexico and simultaneous oil and fuel price hikes. If oil prices settle at steadily high levels or continue to rise, a downturn may set in the global business cycle and stronger inflationary pressure can be expected.

In addition to its impact on oil prices, the natural disaster that has hit the United States may have an adverse impact on global economic growth by slowing one of its main engines in the period ahead of us.

Box 1-3 Global imbalances

While the US current account deficit is at a historic high, over 5 per cent of GDP, certain emerging countries in Asia and some EU Member States (Germany in particular) have considerable surpluses in their current accounts. The US economy is characterised by a massive fiscal deficit and declining household savings. In part, the latter is due to the housing-market upturn prevailing in the US for quite a time, as its wealth effects generates extra consumption by households.

Consumption demand by US households and the public sector give a major impetus to the Asian and European countries with insufficient domestic demand and surplus in their savings/investment balance. In addition it can be established that the currencies of the Asian countries, especially China, are undervalued vis-à-vis the US dollar. Undervaluation is maintained by the Asian central banks' constant intervention in the foreign exchange market. These central banks generally use

the extra USD liquidity raised this way to purchase US Treasury bonds, thus contributing to financing of the current account deficit and generating downside pressure on US long-term yields.

As seen from the above, over the longer term global imbalances result from complex developments that are highly unlikely to be sustainable. Nevertheless, adjustment of

imbalances might start begin quite soon. Although the adjustment of imbalances is indispensable for structurally healthy growth in the global economy, it will presumably entail a decline in US demand. A sudden drop in the globally stimulating effect of the massive US domestic demand may require significant sacrifices related to economic growth in countries heavily dependent on the external economy cycle.

If the economic cycle in Hungary's main trading partners turns unfavourable, the pace of economic growth can be expected to slow in Hungary, as in the past Hungarian economic growth has followed closely the developments in the European Union, moreover cyclical fluctuations even exceeded the corresponding values recorded in the EU⁷ Deterioration in the sales conditions of external markets reduces exports by – typically manufacturing – companies and, simultaneously, corporate profitability. Companies adjust to lower profits by reducing their current production costs, mostly through wage cuts. Initially, this involves limiting the hours worked, and in case of a prolonged external market slowdown, the numbers employed are gradually reduced and consequently, unemployment rises. If a downturn proves to be permanent, companies reassess their medium and longer term investment decisions, which may result in cutting fixed investment expenditures.

In the event of a permanent slowdown in the external markets, corporate sector adjustment modifies household consumption and savings-related decisions through several channels. Slower wage rises limits the increase in households' disposable income, while rising unemployment rates exacerbate uncertainty surrounding expected future earnings. The combination of these two effects

may reduce the sector's propensity to invest and consume, and raise savings in financial assets.

As a result of a slowdown in the economic activity, the current account deficit may decline, due partly to lower borrowing requirement in the corporate sector, and partly to a slight rise in the household financing capacity. Without fiscal adjustment, however, this will not lead to a lasting improvement in the external imbalances.

1. 2. 2. Change in financing costs

The basic projection outlined in the Quarterly Report on Inflation is based on the assumptions that the government will take major adjustment steps in order to offset the deficit-increasing effect of the previously announced measures, and that the economy's persistently high external financing requirement supported by a massive risk appetite and fuelled by households' foreign exchange denominated borrowing can be financed under the current favourable conditions.

The permanently high current account deficit carries a risk in itself, as it makes the Hungarian economy vulnerable to shocks that interrupt external financing. Vulnerability is further increased by the high, predominantly debt-generating borrowing requirement of the general government and cor-

⁷ See: Darvas, Zsolt – Szapáry, György: Business Cycle Synchronisation in the Enlarged EU: Comovements in the New and Old Member States, MNB Working Papers, 2004/1.

porations that can be classified as government interests, as well as foreign exchange-denominated borrowing unhedged against exchange risks by other market participants, especially house-

holds. If under such conditions external financing possibilities narrow or their costs rise unexpectedly, the forint may depreciate and yields may increase.

Box 1-4 Risks carried in financing government duties from loans denominated in foreign exchange

As a result of rapid development in the market of HUF-denominated government securities, from the second half of the 1990s, the government deficit was increasingly, and later on, completely financed from HUF-denominated assets. Thus, a rapidly decreasing part of the general government debt was denominated in foreign exchange. However, 2004 saw this trend turn: once again the government increased the use of foreign exchange in deficit funding.

The overwhelming majority of foreign exchange used for financing fiscal and quasi-fiscal activities is converted by the MNB. Consequently, the foreign exchange risk of the broad general government consolidated with the MNB does not grow, and the forint liabilities of the consolidated general government remain unchanged in comparison with forint-

denominated financing: to the extent the issue of government securities declines, the amounts deposited with the central bank increase. As a consequence, the average maturity of forint-liabilities in the consolidated general government decreases, and the liabilities re-pricing within a year significantly increase.

This carries two different risks to financial stability. One of them is that supply in HUF-denominated government bonds fails to reflect the government's genuine needs, and may thus result in overrated yields in the short term. The other risk is that a considerable increase in quickly re-pricing government liabilities creates a major upside risk in the public sector: an eventual rise in yields promptly and substantially increases the interest.

There may be several factors underlying the risks related to external financing. First, there is a risk that the government offsets the impacts of the currently prevailing fiscal determinations only in part or by illusory measures. In this case, not only with the rise in Hungary's net external debt continue, the current slow improvement in the external equilibrium will be followed by a rise in the current account deficit once again. Due to increasing imbalances and erosion of the government's credibility with regard to the date of adopting the euro, this may push up investors' expected risk premia. A decline in Hungarian economic participants' demand for the forint may also add to the risks related to external financing.

Foreign exchange borrowing of the private and public corporate sectors generates constant demand for forints, and reduces the risk of depreciation in the short term, thereby easing dependence on portfolio capital inflow in the economy. However, it is important to highlight that the global capital market participants find the prevailing risk premium less attractive, and despite the fact that the region is a favoured target of capital markets, non-residents' net forint exposure has not been increasing for a longer time. It follows from the above that if for any reason domestic participants' forint demand declines, dependence on foreign portfolio capital increases, and probably a higher premium will

be charged for the latter. This mechanism alone is unlikely to trigger a premium shock, however, it can increase the impact of a depreciation due to any other reasons.

Moreover, events external to Hungarian economic developments may also increase the costs of financing. An eventual rise in the currently low long-term US yields may reduce global risk appetite through rises in emerging market risk pre-

mia. Reduced global risk appetite for emerging-market assets may result in a drop in investor demand, which may considerably drive up yields and in countries with high current account deficits may ultimately lead to an adjustment in the external imbalances, which can result in serious real economic sacrifices. Potential contagion in the emerging markets may considerably accelerate these developments.⁸

Box 1-5 Temporary ease in dependence on foreign portfolio capital

As the government and households are borrowing in foreign exchange, in the short term Hungary is less dependent on the inflow of forint-denominated portfolio capital, and this supports the stability of the Hungarian forint. As a result of rapid growth in household foreign exchange borrowing, the economy requires significantly less foreign investment in forint-assets than in previous years. While in 2003, 2.5 billion forints were required to hedge the external financing requirement, by now dependence on portfolio capital has dropped near zero due partly to additional foreign exchange borrowing by households, and to a minor extent to an increase in the inflow of foreign direct investment. These are highly likely to have contributed to the recent stabilisation of the forint and decline in yields. This impact was further strengthened by the fact that in financing the budget and quasi-fiscal expenditures (e.g. motorway construction), the government relied on foreign exchange resources to a greater extent than previously.

If for any reason the dynamics of foreign exchange borrowing drops, dependence on portfolio capital may increase in the medium term, and thus involve risks in terms of exchange rate and yield stability. If for any reason the forint exchange rate undergoes a sudden major weakening, households would probably try to counterbalance increase in instalments by reducing foreign exchange borrowing, as it was the case in Poland.⁹ Furthermore, foreign exchange borrowing may also slow as a result of a fast increase in household indebtedness and rapid rise in interest burdens. As the external borrowing requirement has not been substantially reduced on a permanent basis, if the forint demand maintained by foreign exchange loans falls, Hungary's dependence on portfolio capital may increase once again and the market may return to equilibrium with a weaker exchange rate and a higher yield curve.

⁸ See details in Chapter 4.2 in the June 2004 issue of the *Quarterly Report on Inflation*.

⁹ See: the December 2004 issue of the *Report on Financial Stability*.

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Different economic participants may react differently on an unfavourable change in the forint exchange rate and on increasing uncertainty. It is important to note that the forint weakening does not necessarily imply an upturn in exports or economic activity. The possible short-term price competitiveness impact might be offset or even exceeded by the balance sheet effects stemming from open foreign exchange positions.

Based on international experience and estimates of Hungarian sectoral reactions, it is expected that in such a scenario the solvency of economic participants exposed to unhedged exchange rate risks may be undermined, and as a result of adverse balance-sheet impacts, economic growth may slow down significantly. Thus, the Hungarian economy may be more affected in this scenario than in the case of a slowdown in the external business cycle. In other words, a rise in the costs of financing would have more serious effects than a slump in the international economy.

A considerable exchange rate depreciation would only slightly improve profitability in the corporate sector, since their costs consist of imported goods to a large extent, and 60 percent of their liabilities

are foreign currency denominated - implying higher debt servicing costs calculated in forints. The impact could be most severe among naturally unhedged, small and medium size enterprises with foreign currency exposure on their balance sheets.

Households can be affected by forint depreciation through several channels. Increasing debt servicing costs of foreign exchange liabilities and precautionary motives point to the direction of higher savings and lower investment demand, however at the same time households would try to smooth the impact of the economic downturn.

Changes in the general government position are difficult to forecast, as the impact of exchange rate developments on the general government heavily depend on how fast public expenditures and the private sector can adjust. If the depreciation results in slower economic growth, and is not accompanied by higher inflation, the government position would probably deteriorate.

Furthermore, as a result of the recent increase in foreign exchange borrowing in the government sector, an eventual forint depreciation might increase debt servicing costs and have unfavourable valuation effects.

2. Risks of the banking sector

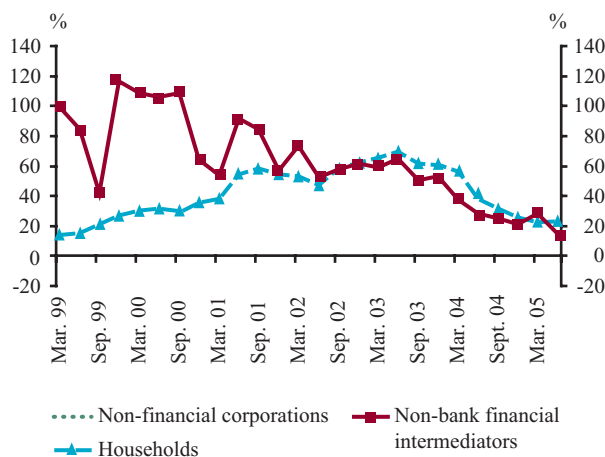




Domestic bank loans to the private sector increased by 16 per cent over the last 12 months, with the growth rate of loans to households, firms and non-bank financial enterprises at 27 per cent, 10 per cent and 18 per cent, respectively. Despite the decline in the buoyant lending dynamics of earlier years, household borrowings, especially in foreign currency, continue to grow strongly (see Chart 2-1 and Chart 2-2). A similar phenomenon can be observed in the SME sector as well. Consequently, the share of these new market segments in banks' balance sheets is expanding.

Chart 2-1

Annual real growth rate of outstanding loans to the private sector

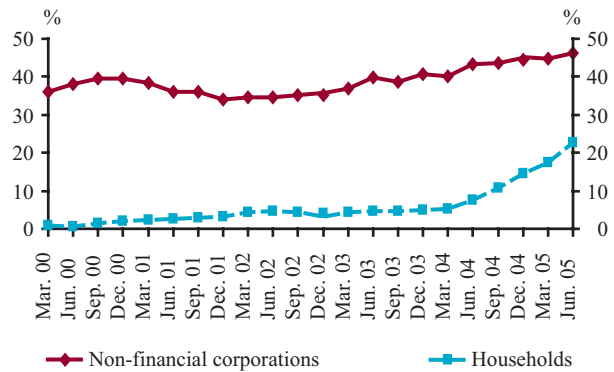


Source: MNB.

As the realised margin in these markets is higher than average, turning to new market segments significantly contributes to the Hungarian banking sector's profitability, which is high even by international standards. However, this benign picture of profitability is explained by a number of individual factors as well, which are not expected to add to the banking sector's profit over the longer term. Banks finance an increasing portion of loans granted

Chart 2-2

Share of foreign currency lending by domestic banks to the private sector within the total bank loan portfolio

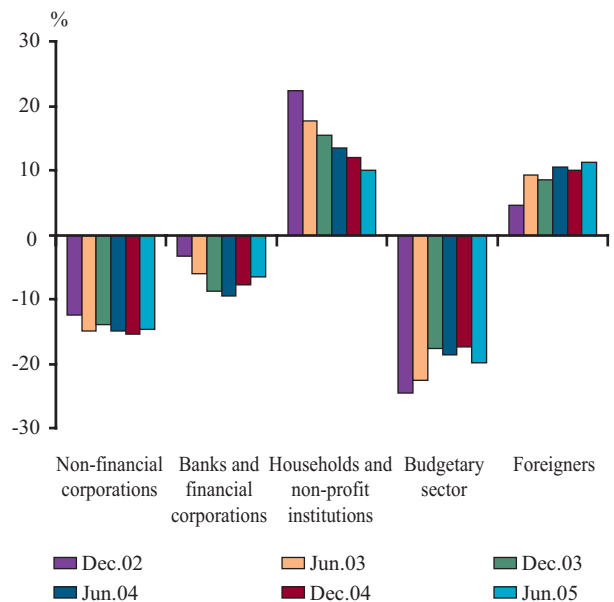


Source: MNB.

to domestic sectors from foreign sources (see Chart 2-3). Due to the dominant role of parent banks in financing and the strong integration of the banking sector, the increasing dependence on for-

Chart 2-3

Net financial position of economic sectors vis-à-vis Hungary's banking sector¹⁰



Source: MNB.

¹⁰ Those balance sheet items where a sectoral breakdown was not available and the role of capital were left out of consideration when calculating the net financial position. The ownership distribution of securities issued by Hungarian banks was not available, but the sectoral breakdown of mortgage bonds, which constitute a large part of the holdings, is available. Considering this, it can be ascertained that the non-resident sector's role in financing would be greater than the value shown in the chart, the net borrower's position of banks and non-bank financial intermediaries would be lower, while the net financial position of non-financial corporations and households would remain broadly unchanged.

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foreign funds is not considered very risky for domestic affiliates. However, the household sector's net financing position vis-à-vis the banking sector may continue to decline, which could increase financing costs and therefore have a negative impact on profitability over the longer term.

Entering new market segments and passing on the exchange rate risk related to foreign currency lending to customers both lead to a gradual increase in credit risks. All this, coupled with

increasingly fierce competition, gradually declining margins and easing in lending standards will have a negative influence on the currently benign picture over the longer term. The magnitude and time of occurrence of potential losses greatly depends on future macroeconomic developments, as both the corporate and household sectors' income position and creditworthiness are external factors for the banking sector.

2. 1. Credit risks

The assessment of future credit risks of Hungarian banks is characterised by a greater uncertainty than in the past. Our analysis is based on the main macroeconomic scenario laid out in the Quarterly Report on Inflation published by the MNB; nonetheless, due to the stability aspect of the analysis, emphasis is also given to alternative macroeconomic paths which are relevant from the aspect of risks. The basic macroeconomic scenario, which can be maintained if several conditions exist simultaneously, does not cause any significant alteration to the risk factors of the corporate and household sectors emphasised in earlier reports. If the basic scenario plays out, the build-up of loan portfolio risks will only lead to a slight increase in the vulnerability of the financial system over the short run, and in this case mainly longer-term risks will dominate.

Nevertheless, compared to earlier expectations, there is an increased probability of deviation from the basic scenario. Possible deterioration in economic performance directly increases credit risk in the corporate sector and, depending on the extent and pace of corporate adjustment, it also has an adverse effect on households' income position, adding to banks' credit losses. Risks generated by possible external financing problems, however, are considered even more important, as – in addition to direct effects – exchange rate and interest rate adjustments have a negative indirect impact on customers' creditworthiness through the repricing of foreign currency and forint loans, and thus also affects the stability of the financial system. In addition to this, it is important to emphasise that the uncertainty surrounding fiscal policy renders the

assessment of corporate and household credit risks extremely difficult.

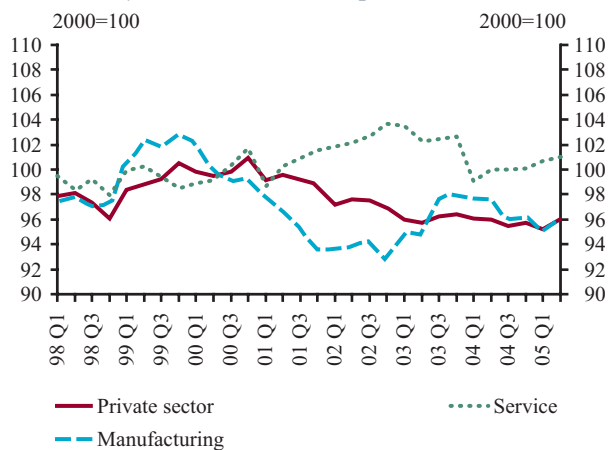
2. 1. 1. Corporate sector

Uncertain income prospects

Developments in the profitability of the non-financial sector in 2005 have been positively influenced by steady growth in economic activity and higher-than-expected Hungarian exports (see Chart 2-4). Following a slowdown at the end of last year, external demand started to strengthen slightly in early 2005, and although current expectations do not envisage any further significant recovery; we expect a slow but steady expansion.

Chart 2-4

Profitability of non-financial corporations



Note: The developments in profitability are approximated using the inverse of the real unit labour cost.

Sources: CSO, MNB.

Developments in business activity and a stagnation in labour demand due to substitution of labour with capital will result in a continued dynamic increase in the productivity of manufacturing companies. This is especially the case in the machine industry, where output is growing considerably, in

parallel with a gradual decline in the numbers of employees. Although adjustment to a lower inflation environment will result in further slowdown in wage inflation and productivity will probably continue to increase rapidly, no significant growth in profitability is expected in the short run, due to falling sales prices.

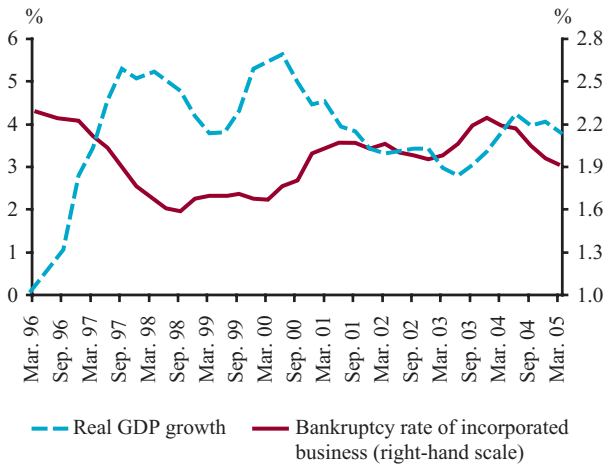
As opposed to manufacturing, a rapid increase in labour use and moderate growth in output will result in low productivity growth in market services. However, due to declining wage inflation and the high growth rate of sales prices in the services sector, stable profitability is expected in this sector as well over the short run. It is important to mention that in respect of output, a dual trend can be observed in market services: production growth in transport, telecommunications and business services can be considered vigorous, due to increasing demand in external markets, while output in commercial services is expanding only moderately, as a result of the subdued increase in household consumption expenditure.

Economic growth, which accelerated last year and then stagnated at around 4 per cent, has resulted in a continuous improvement in the corporate sector's income position. This has contributed to the steady decline in the rate of bankruptcies, especially in the case of large companies (see Chart 2-5).

The basic macroeconomic scenario suggests that in 2006 and 2007 both external and domestic demand may be stronger than this year. This could result in sustained, strong productivity growth in manufacturing and sustained low productivity growth in labour-intensive market services, due to a further increase in the number of employees in the latter. The expected profitability of the tradable sector, however, is characterised by higher-than-usual uncertainty. In 2006, the rise

Chart 2-5

Annual bankruptcy rate of business associations with legal personality and real GDP growth



Note: Annual bankruptcy rate denotes the ratio of the number of newly reported bankruptcy proceedings and liquidations in the preceding 12 months to the number of operating companies. The annual, seasonally adjusted real growth rate of GDP is shown here.

Sources: Opten Kft., CSO, MNB.

in the minimum wage will constitute a cost-increasing shock, while in 2007 the reduction in the social security contribution rates will constitute a cost-reducing shock. The extent and direction of the influence of these shocks on the corporate sector's profitability mainly depend on the character of bargaining positions in the labour market.

It is important to emphasise that the above assessment of the anticipated developments in the corporate sector's income position is based on a fragile basic macroeconomic scenario. In respect of the corporate sector's income position and accordingly developments in Hungarian banks' portfolio quality, it is important to focus on the risk scenarios discussed earlier amongst the various factors causing the uncertainty in the basic scenario. A possible slowdown in external demand would lead to a deterioration in Hungarian banks' loan portfolio via the declining profitability of the corporate sector. Moreover, a possible deterioration in external financing conditions via the depreciation of the forint exchange

rate and an increase in yields would boost the debt repayment burden of uncovered foreign currency loans and forint loans mainly in the SME sector.

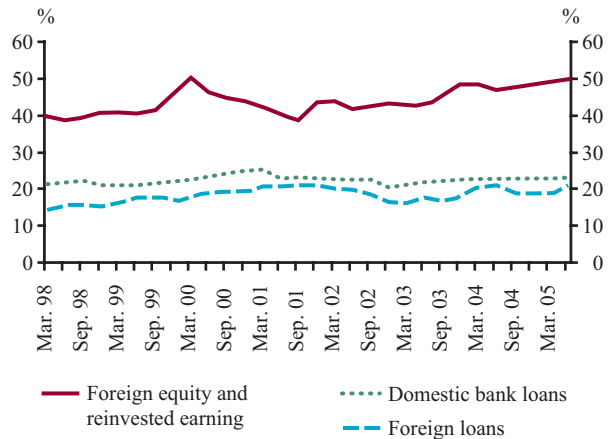
The effect of the government's fiscal policy on the corporate sector over the coming two years can be mentioned a further source of considerable uncertainty. The magnitude and form of the reduction in expenditure to counterbalance the announced decline on the revenue side of the budget is not yet known. Although fiscal adjustment is desirable for financial stability, a possible tightening in state investment and subsidies may adversely affect some sectors over the long run.

Weakening lending

Corporate loan demand is mainly influenced by cyclical factors, namely developments in gross fixed capital formation and foreign trade, which are examined below. However, the assessment is greatly hindered by the fact that, as a result of one-off effects or changes of statistics¹¹, the stated borrowing requirement of the corporate sector declined considerably in 2005 H1, which does not necessarily reflect the real cyclical developments. Statistical data show a pronounced expansion in the corporate sector's fixed capital formation in 2005 H1. Corporate investment and export sales increased markedly, while inventories continued to decline. A pick-up in fixed investment was typical of the transport, telecommunications and business services sectors in particular, while investment activity in manufacturing was not very buoyant. All of this suggests that the sharp increase in investment this year is mainly attributable to public infrastructure developments (motorway construction). At the same time, manufacturing com-

Chart 2-6

Ratio of non-financial corporations' outstanding borrowings and direct investments to GDP



Source: MNB.

panies' export sales grew dynamically. Amidst these developments, one surprise was that the import demand of the economy failed to reach the level of earlier years, when intensive investment and export growth was experienced.¹²

The continued high fund-raising term of the corporate sector is indicated by the fact that despite a slowdown, at an annual level corporations' loans from domestic banks and the volume of inter-company loans is still increasing at 9.5 per cent, a rate close to that of nominal GDP growth, while large corporations' direct borrowing from abroad continues to rise vigorously, increasing by 14 per cent (see Chart 2-6). Demand for direct loans from abroad is mainly generated by those sectors (e.g. machine industry) and/or foreign-owned multinational companies which dominate the export sales of the corporate sector. In contrast to this, the developments in credit demand from domestic banks depend to a large degree on companies in service sectors, mainly SMEs. Thus, when there is an upward trend in business activity, i.e. GDP growth rate exceeds the potential level, it may be considered natural that the growth rate of corpo-

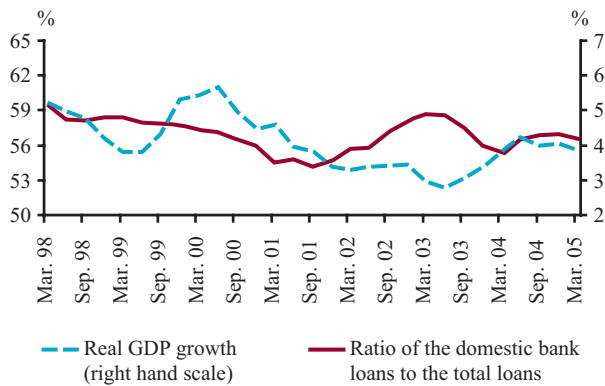
¹¹ See details in the Quarterly Report on Inflation, August 2005.

¹² For details of import data analysis, see Box 4-5 of the Quarterly Report on Inflation, August 2005.

rations' loans from domestic banks lags behind the expansion of direct loans from abroad and that the growth rate of foreign currency lending (15 per cent) exceeds that of forint lending (3 per cent, See Chart 2-7). Despite the increase in outstanding debt, however, the corporate sector's capital leverage is not growing, because own funds are rising faster than foreign liabilities. The increase in own funds is a result of the steady, 15 per cent growth in foreign direct investment in the form of

Chart 2-7

Distribution of non-financial corporations' domestic and foreign lending and real GDP growth



Source: MNB.

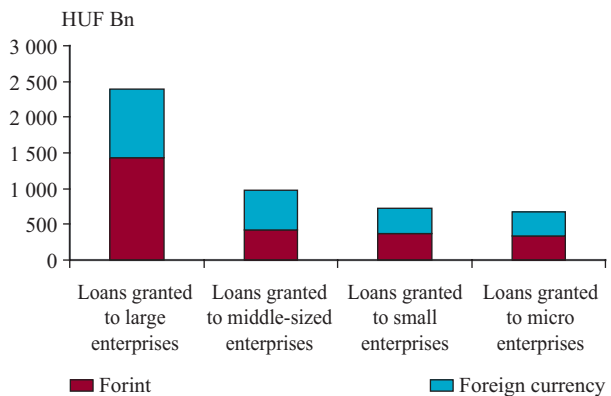
shares and in reinvested earnings. Credit demand is also influenced by structural changes in the corporate sector. Within the corporate sector, the profitability of SMEs which are suppliers or provide services to large enterprises is steadily improving. However, due to limited access to funding, this sector can only finance itself mainly from domestic credit, which results in sustained, strong credit demand. We find it very unfavourable, however, that in the present vulnerable economic environment an increasing portion of the SME sector's bank-based financing is denominated in foreign currency (currently 52 per

cent of total loans are denominated in foreign currency), mainly in Swiss francs, which is presumed to be unhedged; therefore, this increases banks' credit risk via the increase in clients' exchange rate risk (see Chart 2-8).

On the credit supply side, especially in the SME segment, Hungarian banks continue to show an increasing willingness to lend. The findings of the Senior Loan Officer Survey on Bank Lending Practices¹³ suggest that due to the increasingly fierce competition banks are tending to gradually ease their lending standards and conditions, trying at the same time to

Chart 2-8

Distribution of non-financial corporate lending by company size



Source: MNB survey (Aug. 2005).

price the increased risks in the interest rates.

Stagnating portfolio quality, increasing differences between economic sectors

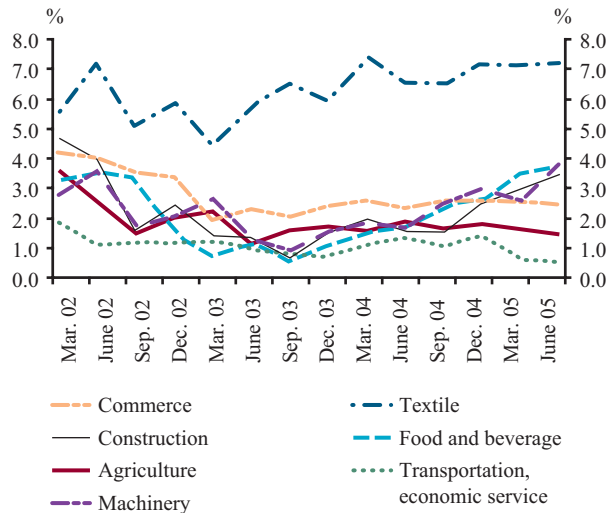
The overall quality of loans granted by the Hungarian banking sector to the corporate sector is not deteriorating¹⁴, but the assessment of current developments suggests that the differences between and within sectors are growing both in terms of companies' assessment and banks' cre-

¹³ Senior Loan Officer Survey on Bank Lending Practices (August. 2005)

¹⁴ The decline in non-performing loans to total loans was due to significant portfolio cleaning. Write-offs amounted to 0.6 per cent of total loans in 2005 H1.

Chart 2-9

Hungarian banks' credit loss rate in major economic sectors



Source: MNB.

dit losses (see Chart 2-9).

Of the sectors showing higher-than-average credit loss ratio (2.1 per cent), due to an increase in bankruptcies and the high stock of payment arrears, a further increase in the share of non-paying enterprises within the portfolio can be observed. However, the development of companies engaged in infrastructure projects is currently being positively influenced by the substantial increase in state investments, especially orders related to motorway constructions and financial aid received from the European Union. Assessment of the future prospects of the construction industry is hindered by the uncertainty related to fiscal policy. Developments in household and public investment are greatly influenced by the form and extent of the government's efforts to offset the announced expansionary fiscal measures which will improve households' income position.

Short-term assessment of the profitability of the food industry and textile sectors is still negatively affected by the fierce market competition and the resulting ongoing consolidation of the market, the

positive effects of which will mainly materialise over the medium term. Differentiation can also be observed within trade; a number of retail shops have gone out of business as consumption is tending to concentrate on major chain stores. In trade, the change in consumer culture and strong market competition will result in a further increase in sectoral concentration.

Examining those sectors where credit losses are lower than average, it can be ascertained that the income position and loan portfolio quality of service sectors which are sensitive to external demand can still be considered favourable. Within manufacturing, an upswing in productivity in the machine industry is resulting in improving corporate profitability. Nevertheless, Hungarian banks' portfolio of loans granted to companies in the machine industry is deteriorating, which is attributable to some large corporations, due to the existing high client concentration. If the global boom continues, no future deterioration of the loan portfolio of sectors sensitive to external demand is expected. After a long time, the loan portfolio quality of agricultural companies is also beginning to show an improvement, due to an increase in the volume of production and the payment of postponed subsidies. Rationalisation of the production structure and an increase in aid from the European Union has resulted in an improved assessment of the sector.

Future assessment of the loan portfolio may also be affected by the changes in outstanding borrowings of clients with overdue payments. The higher the amount and the longer the time of a debtor's default on payment is, the greater is the probability of non-payment and the expected deterioration of the loan portfolio.

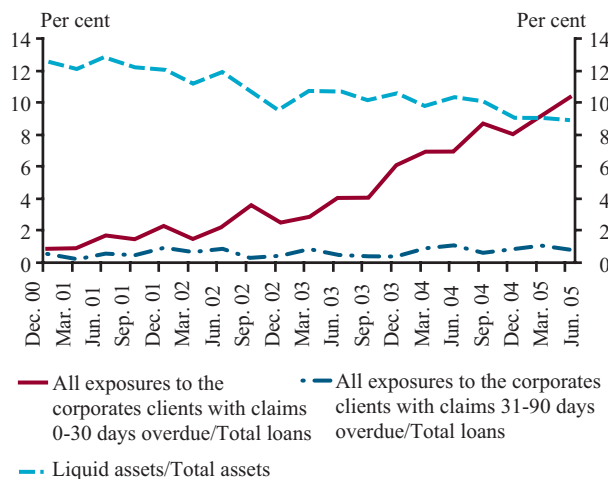
The share of companies with 0–30 days overdue payments in the total loan portfolio has been increasing since early 2002 and at the end of 2005

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H1 it reached 10 per cent. However, as most companies repay their debts to banks within 30 days, the ratio of firms with 31–90 days overdue payments is increasing only slightly. The trend outlined above leads to the conclusion that a significant portion of companies with overdue payments have liquidity problems, which does not yet result in the deterioration of the loan portfolio. This assertion is also confirmed by the fact that the ratio of the corporate sector's liquid assets (mainly cash and deposits) to total assets has steadily been declining since end-2000 (see Chart 2-10).

Chart 2-10

Corporations' liquidity position and the share of their bank loans with overdue payments in the total portfolio



Source: MNB.

The decline in the ratio of corporations' liquid assets is attributable to several factors. From May 2003 until end-2003, and then in 2004 Q4 and 2005 Q1 the government slowed down VAT

refunds to companies, which had a negative effect on the sector's liquidity position. As SMEs, which often struggle with liquidity problems stemming from their operations, play an important role in the Hungarian banking sector's portfolio, the quality of the loan portfolio and the number of late payments are extremely sensitive to the predictability of taxation. The increase in the number of corporations with overdue payments was also caused by the recent payment arrears among companies in some sectors (construction, tourism). Moreover, trade credits to state-owned companies and budgetary units also increased significantly.

The increase in the uncertainty related to the assessment of the corporate sector's future credit risk points to an increase in risk premium. In the recent period the interest rate spread¹⁵ on overdrafts increased to 2 per cent, while the spread on loans of up to one year decreased to 1.3 per cent and that of loans over one year rate fixation stagnated around 2 per cent. Although the overall interest rate spread increased to 1.6 per cent, its level still cannot be considered high in international comparison or historically. Based on the Senior Loan Officer Survey on Bank Lending Practices, most banks intend to further increase the risk premium, although the competition for clients, i.e. raising the market share considerably limit this planned tightening. As competition is becoming keener, the growing chance of risk underpricing is increasing.

¹⁵ The difference between interest rate on a loan and BUBOR.

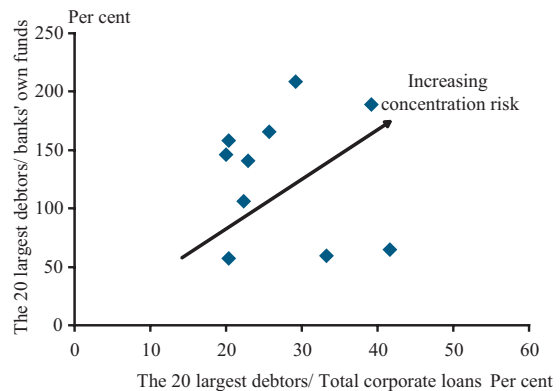
Box 2-1 Analysis of banks' corporate client concentration risk based on the large debtor' portfolio¹⁶

Analysing the large debtor portfolio from a corporate client concentration aspect is relevant due to several factors. Although the probability of bankruptcy is much lower in case of large corporate clients compared to small companies, the magnitude of credit exposure is considerably larger due to the size of the company. In addition, the bankruptcy of a large company may trigger a significant contagion effect, as the termination of business contacts may result in an increased probability of insolvency of suppliers and service providers. This may especially be the case in those sectors (construction, trade, tourism, etc.) where payment arrears may develop due to the significant role of trade credits in financing. Consequently, in terms of a client insolvency the bank takes the lowest risk, if its loan portfolio is characterised by low concentration, i.e. the number of clients is large and the standard deviation of credit exposures is small, and the ratio of those large and small companies which have business or financial relationships with one another is also low. Accordingly, based on the size of the loan portfolio of the 20 largest debtors and the sectoral distribution of the total corporate loan portfolio, the 10 largest banks' corporate client concentration is examined below.

Examining the large debtors of the ten largest Hungarian banks, which cover 90 per cent of the corporate loan portfolio, it can be seen that in June 2005 the average ratio of the 20 largest debtors' outstanding debt to the total corporate loan portfolio was 26 per cent, which can be considered relatively high. It is advantageous, however, that the concentration ratio has been falling continuously over the last 3 years, declining to 8 percentage points. The ratio declines by another 3 percentage points, if collateral which only carries sovereign risk are taken into account, as in this case the actual exposure is much lower.

Chart 2-11

Portfolio concentration of the ten largest banks in June 2005



Sources: HFSÁ, MNB.

It is also worth comparing the concentration ratios with the size of equity. From a risk aspect, it is considered more advantageous if the value of exposure to the twenty largest debtors compared to the equity is as small as possible. Chart 2-11 shows that at two of the three banks with the highest concentration ratio the size of the own funds is so large that even the bankruptcies of several companies would not practically increase the stability risk of the banking sector.

Finally, let us examine how high the sectoral concentration within the corporate loan portfolio might be. As no direct information on how and to what extent corporate clients are interrelated is available, we use the approximation that the sectoral distribution of individual banks' total corporate loan portfolio reflects the risk of contagion. It is presumable that in trade, construction, machine industry, tourism, logistics and telecommunications the ratio of companies which have business or financial relationships with each other is high.¹⁷ In case

¹⁶ Banks' large debtor portfolio includes the 50 largest clients. The large debtor portfolio of the 20 non-financial corporations recorded as the largest debtors was implied by excluding private persons and state-owned companies from the entire large debtor portfolio.

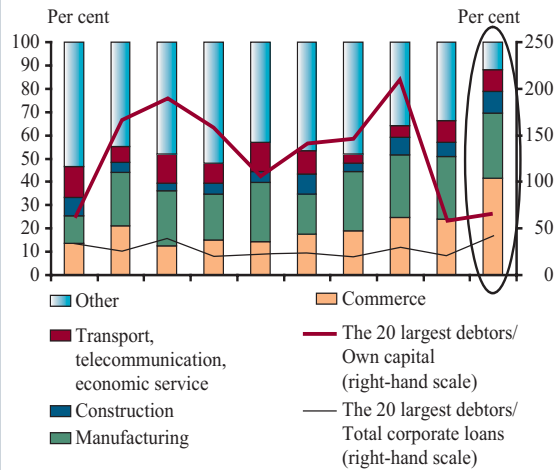
¹⁷ For details, see *Report on Financial Stability*, April 2005.

of banks where the exposure to the above mentioned sectors is high, the risk of contagion within the same loan portfolio may be greater if a company becomes insolvent.

In Chart 2-12, the bank that shows high sectoral concentration is circled. In the case of this bank, the lack of sectoral diversification, the greater dependence on one sector may increase the risk of contagion between companies within the same portfolio and the magnitude of the concentration risk, which is already the highest of the banks examined. As far as the other banks are concerned, no significant difference can be found if the total corporate and large debtor sectoral exposures are compared. Overall, it can be seen that based on the large debtor and large corporation portfolio the concentration of the client portfolio of the ten largest banks of the corporate credit market can be considered high, but sectoral diversification reduces the risk of corporate contagion in the case of most banks.

Chart 2-12

Sectoral breakdown of the corporate loan portfolio of the ten largest banks (June 2005)



Source: HFSA, MNB.

2. 1. 2. Households

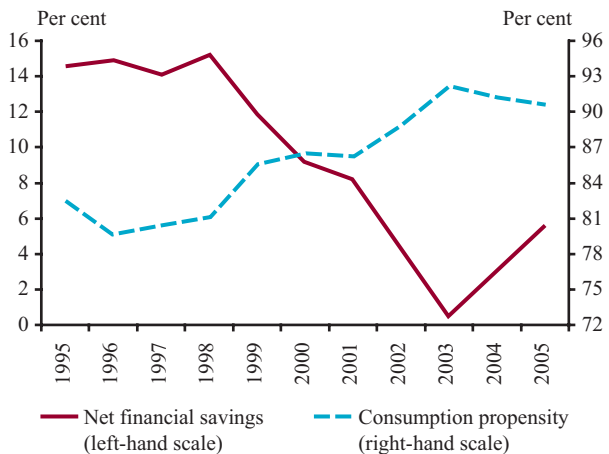
Increasing solvency risks

Examination of household behaviour reveals a continuation of the shift towards a more sustainable consumption-indebtedness path which started last year. The above trend, coupled with the declining dynamics of investment, results in the rise of financial savings (see Chart 2-13). However, according to the GfK survey, the increase in sector-level savings has only been reflected to a very small extent in a decline in the ratio of debtors without savings, who are important from a credit risk aspect. This ratio declined a bit below 60 per cent. Nor has there been any significant change in the distribution of debtors

without savings according to income (see Chart 2-14).

Chart 2-13

Consumption expenditure and net financing capacity as a proportion of households' disposable income

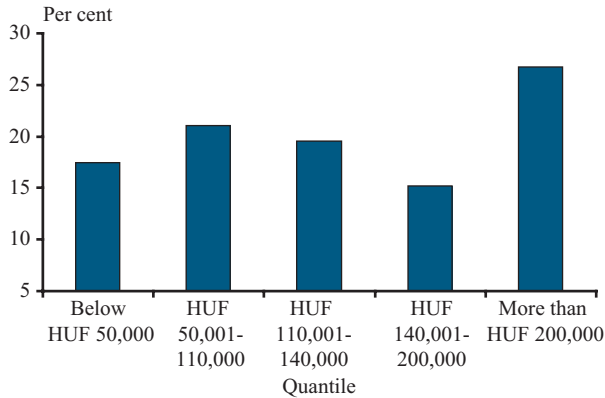


Note: 2004/2005 MNB estimate.

Source: CSO, MNB.

Chart 2-14

Breakdown of debtors without savings according to income quintiles



Note: Covering the total population of 15 years of age or older, based on the per capita part of the household's total income.

Source: GfK.

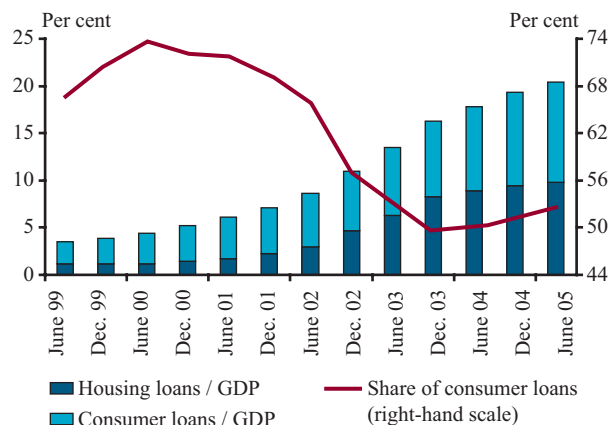
For precautionary reasons, despite the growing supply in the goods, housing and credit markets,¹⁸ the household sector is raising its consumption expenditure and investment at a slower pace than income growth, which results in a decline in its consumption and investment rates. The underlying reasons for the strengthening of precautionary motives are the increase in unemployment (its rate has exceeded 7 per cent in 2005) and the debt burden, which became high even in comparison with Western European levels as a consequence of the credit growth in past years.¹⁹

Overall, the growth rate of indebtedness continued to decline, with its level slightly exceeding 20 per cent of GDP (see Chart 2-15). Indebtedness is already mainly denominated in foreign currency, and therefore the stock of forint loans is stagnating. Due to the expanding credit supply and an unchanged consumption growth rate, con-

sumer lending remains vigorous. Consumer lending has shifted from financial enterprises toward banks. However, in 2005 H1 a technical factor also contributed to the 17 per cent half-year growth rate of the banking consumer loans.²⁰ General purpose mortgage loans have been the engine behind this growth. The monthly instalment of general purpose mortgage loans is much lower than for other high-sum consumer loans owing to the foreign currency denomination, the longer maturity and the mortgage. In addition to general purpose mortgage loans, credit card debt has also witnessed strong growth. From an extremely high level, which was the result of the previous housing subsidy scheme, the growth rate of household investment and lending for housing declined to a value (8 per cent half-year rate) which is more sustainable over the long term. Based on the above there was a slight shift toward consumer lending and away from housing financing.

Chart 2-15

Composition of household loans as a proportion of GDP



Sources: CSO, MNB.

¹⁸ Due to the expansion of supply in the goods market, the terms of purchasing consumer durables are becoming better and better. According to the MNB's Senior Loan Officer Survey on Bank Lending Practices, this is coupled with banks' increasing willingness to lend and relaxation of lending conditions.

¹⁹ Regarding the debt burden, see Box 2-2 on page 47 of the *Report on Financial Stability*, April 2005.

²⁰ One of the banks took over its financial enterprise which had had a significant consumer loan portfolio.

According to the basic macroeconomic scenario, the income prospects of households are expected to improve. This assumption is mainly based on the fiscal measures announced to date for 2006, which may, on the whole, be considered as a stimulating package for households. The VAT reduction and the increasing support to families add to the real value of incomes. The differentiated rise in the minimum wage, which will be tied to qualification, is anticipated to have a neutral effect on the sector's income position as a whole.²¹ The increase in unemployment will also not reach a level which would impair the sector's financial position in a perceptible manner.

The aforementioned fiscal measures, however, are not considered to be consistent with an economic path which is sustainable over the longer term. Consequently, further fiscal restrictions may become necessary in order to attain macroeconomic equilibrium. Nevertheless, we believe that a possible small fiscal restriction, i.e. taking back the benefits in another form, would not substantially affect households' solvency. On the other hand, the later the fiscal adjustment is carried out, the more substantial it may be and the stronger impact it may have, which may temporarily impair the sector's solvency following the adjustment.

If, however, the financing requirement of fiscal policy is not adjusted, there may be an increased probability of the path described in the alternative scenario and characterised by a rise in yields and a depreciation of the exchange rate. Should the above materialise, this would negatively affect many households even in the short run, via the increase in the debt service burden. If negative conditions continued to exist for a longer time, at the sectoral level the debt service burden would

increase significantly, which would lead to a major deterioration in the quality of the banking portfolio.²² In addition to the growing debt service burden, the inflation of wages due to the depreciation would also result in a decline in consumption and investment. The depreciation process may further be exacerbated by flagging forint demand due to the decline in households' foreign currency borrowing. Another risk factor is a deterioration in external market conditions, which would also impair the household sector's income prospects, via the labour market adjustment of corporations. A persistent economic slowdown, in turn, would considerably add to unemployment.

Overall, developments in household income and consumption-indebtedness behaviour described in the basic macroeconomic scenario have a favourable effect from the aspect of the sector's solvency. However, the solvency outlook is surrounded by increasing risks due to the growing importance of fiscal uncertainty and the closely related external financing risk and also the risk hidden in external market conditions. The banking sector may be severely affected if these risks materialise, partly via the decline in household consumption and housing credit demand as well as via the substantial increase in the ratio of household non-payment or late payment.

Uncertainty in the housing market

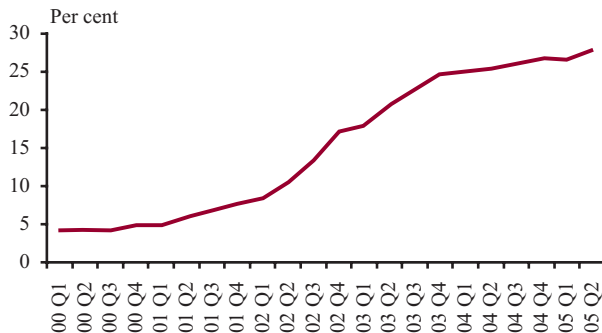
Following the tightening of the housing subsidy scheme, foreign currency lending gained ground significantly, while the 'Nest-building programme' only contributed to growth in housing lending to a lesser extent (approximately 10 per cent of newly granted loans).

²¹ For the self-employed, the above measure can be considered as a tax increase. For a considerable portion of public administration its effect will be subdued because of the already existing minimum wage for university/college graduates. It may result in an increase in income for private sector employees.

²² Regarding the short-term sensitivity analyses of debt burden, see Box 2-2 on page 47 of the *Report on Financial Stability*, April 2005.

Chart 2-16

Share of home construction and purchase loans within private sector borrowing



Note: Borrowing includes enterprises' home construction loans.
Source: MNB.

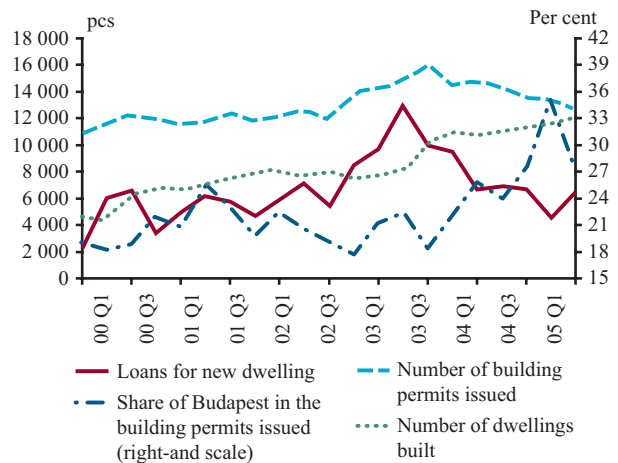
As a result of developments in recent years, the banking sector's exposure to the housing market has become significant (see Chart 2-16). The share of home construction and purchase loans within total loans (HUF 7,660 billion at present) to the private sector (households and non-financial corporations) amounts to nearly 30 per cent. This ratio is between 20–50 per cent at nearly one-quarter of banks, including a number of large banks.

Data released by the CSO suggest that there is a strong dual trend in home construction. While a marked downturn in home construction can be discerned in the countryside, activity is still lively in Budapest (see Chart 2-17). Home construction is increasingly characterised by construction for sale, which generates higher demand for funding by banks. In 2005, due to the dynamic growth in Budapest, and despite the fall in the countryside, the total number of dwellings built is not expected to decline very much. However, according to building permits issued, a nationwide decline in the number of home completions is anticipated for 2006.

With the stagnation of household investment activity, the continued dynamic home construction in Budapest will run into difficulties when it comes to sales, which will pass through to the market of existing dwellings as well. Signs of this nature have already become visible. There is oversupply in

Chart 2-17

Housing market indicators



Note: Loans taken for purchasing new homes do not include foreign currency-based loans. However, foreign currency substitution is probably lower in this category.
Source: CSO, DEM.

respect of both quantity and quality (too many studios have been built recently), which makes absorption even more difficult. As households have started to take a "wait-and-see" stance, the subdued home-purchasing activity in 2005 is based on two expectations: the one-off impact of VAT reduction next year, which may reduce home prices by as much as 4 per cent, and, due to the oversupply on the market, potential buyers may wait for further declines in prices, which may begin to bring house prices down in nominal terms. As household housing loans are typically highly collateralised, banks' losses in this field in the case of non-payment are low even in the event of a relatively considerable decline in prices. Due to potential buyers' reticence, the deteriorating financial position of developers and construction companies may have a more crucial impact on banks' credit losses.

The subdued dynamics of household investment is expected to be coupled with moderate growth in housing lending in the near future. With the planned relaxation of conditions, i.e. raising the age limit for application, the importance of the 'Nest-building programme' will increase. Over the longer term,

housing loans are expected to gain ground within lending to households, which may lessen the above discussed uncertainties in the housing market.

Higher exchange-rate uncertainty increases credit risk

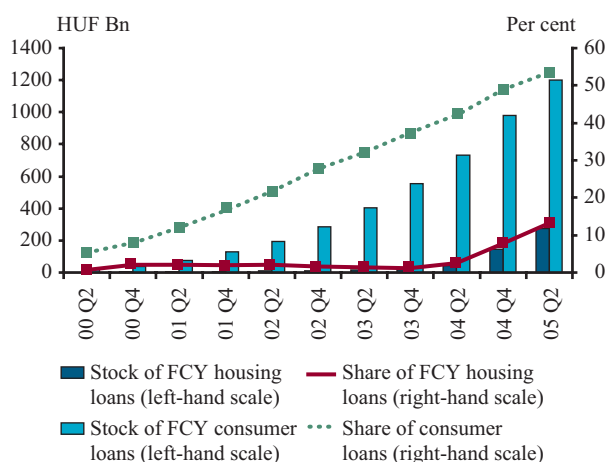
Foreign currency lending to households inexperienced in financial matters carries an increased risk to financial stability. A substantial weakening of the exchange rate triggered or exacerbated by macro-economic imbalances may lead a jump in the household non-payment. Owing to the fact that many households are unaware of the exchange rate risk and the materialisation of unexpected losses, they may tend to lose confidence in financial intermediaries, which would intensify the negative impact of an exchange rate shock on financial intermediation (See special topic titled “Households’ financial culture and financial stability”).

In 2005, the proportion of foreign currency loans within new lending by credit institutions continued to increase, both in consumer credits and housing loans (above 60 per cent). Financial enterprises had previously extended their loans mainly in foreign currency (80–90 per cent). As a consequence, the share of foreign currency loans in the total stock of loans is strongly increasing (see Chart 2-18). This tendency has been influenced by different factors: the interest differential, the low awareness of households, and the supply pressure exercised by banks.²³

The increasingly fierce competition not only results in foreign currency lending gaining ground, it also leads to a gradual easing in other lending conditions, forcing banks into increasingly risky segments.

Chart 2-18

Foreign currency (FCY) lending indicators



Source: MNB.

The above developments are confirmed by the fact that the ratio of non-performing loans has increased recently. The increase in the ratio of overdue payments (to 11 per cent) also reflects the deterioration of the overall household portfolio. Within household loans, this ratio in housing loans also started to increase and has risen above 1 per cent. In respect of consumer credits, the portfolio quality of car financing loans, which constitute nearly half of outstanding borrowings, has already deteriorated considerably.

Box 2-2 Lending for car purchase

Over the past three years, in respect of the various household loan market segments, developments in the market of car purchase loans gave the most serious cause for concern.

Outstanding borrowings in this market, which is dominated by financial enterprises, approximate to HUF 1,000 billion. Key players in this market depend on the

²³ In details regarding Bethlendi et al. (2005): Driving forces behind private sector foreign currency lending in Hungary. MNB Background Studies 2005/2.

banking sector via ownership and financing relations: therefore, problems in lending for car purchase may affect the operation and stability of the banking sector as well.

Starting from 2003, the MNB's *Report on Financial Stability* regularly identifies those increasing risk factors which jeopardise the sector's operation. Aggressive expansion, easing of lending conditions and declining margins due to competition clearly resulted in an increase in credit risk. The growing predominance of foreign currency lending has exposed many borrowers, who do not have a natural hedge and are inexperienced in financial matters related to exchange rate and interest rate risks, which greatly influence the amount of instalments. The deterioration of the portfolio to date is not attributable to higher risks originating from the denomination (the developments in exchange rates and yields have been favourable for borrowers so far), but it is due to easing in other terms. In 2004, as the number of vehicles sold declined, market competition became fiercer and more products with higher risk (e.g. no down payment) were sold, which attracted clients whose creditworthiness was already questionable when the loan was granted. In 2004, in addition to the deterioration of the portfolio and the increase in the number of vehicles

repossessed, several financing groups' profit also fell considerably.

By 2005, it became obvious that the vehicle sales and financing market was saturated, and the growth rate of outstanding loans declined. Data available up to the end of H1 show a notable deterioration in the portfolio (see Table 2-1). In part, this can be ascribed to the deterioration in the quality of the high volume of outstanding loans granted in the expansion period which carry significant risk, while the slower growth in new outstanding loans in H1 was not sufficient to offset the unfavourable trend.

By 2005, most financing agencies had already accumulated a portfolio in which the ratio of potentially problematic loans is considerable. In the coming years, these loans are expected to continue to add to the proportion of bad loans, and may even reach drastic levels in case of some enterprises. The future proportion of bad loans to the total portfolio over the longer term greatly depends on whether competition will prompt market participants to continue to ease their lending conditions or, in parallel with the slowdown in growth, they will focus on qualitative rather than quantitative requirements. From the aspect of financial stability, the latter would be desirable.

Table 2-1

Changes in portfolio quality of financial enterprises

Per cent

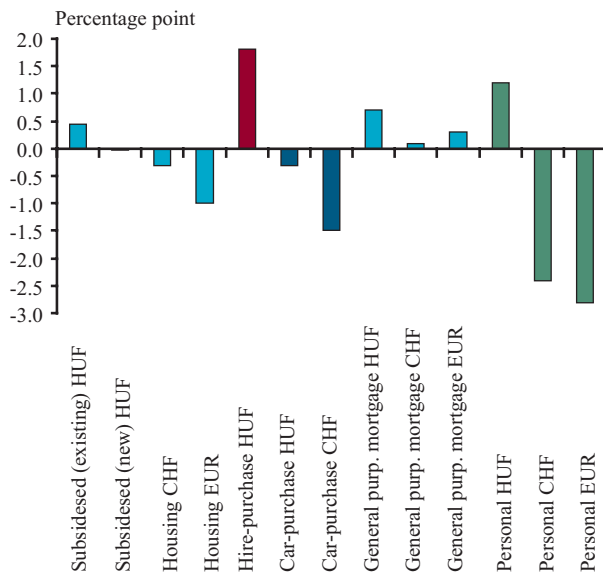
	Non-performing loans' proportion to the loan portfolio		Loan loss provision/ Total loans	
	December 2004	2005 H1	December 2004	2005 H1
Bank-based car purchase financing enterprises	2.9	5.1	2.3	3.3
Captive car purchase financing enterprises	3.9	4.5	2.1	1.9
Car purchase financing enterprises total	3.0	5.0	2.3	3.0

Note: The term 'captive finance' is generally used for international non-bank financial institutions engaged in car financing.
Source: MNB.

Appearance of price competition

According to the last three Senior Loan Officer Surveys on Bank Lending Practices, in addition to the continuous and significant easing of non-price factors, price competition also appeared in lending to households. Until end-2004 this was not confirmed by quantitative data²⁴ (see Chart 2-19).

Chart 2-19
Changes in household loans' spreads between January-June 2005



Notes: APRC of floating, or maximum 1 year fixed-rate loans weighted by new originations. For subsidised housing loans, we used the unweighted average of APRC of banking proposals. New originations are insignificant in some currencies, and are therefore not mentioned.

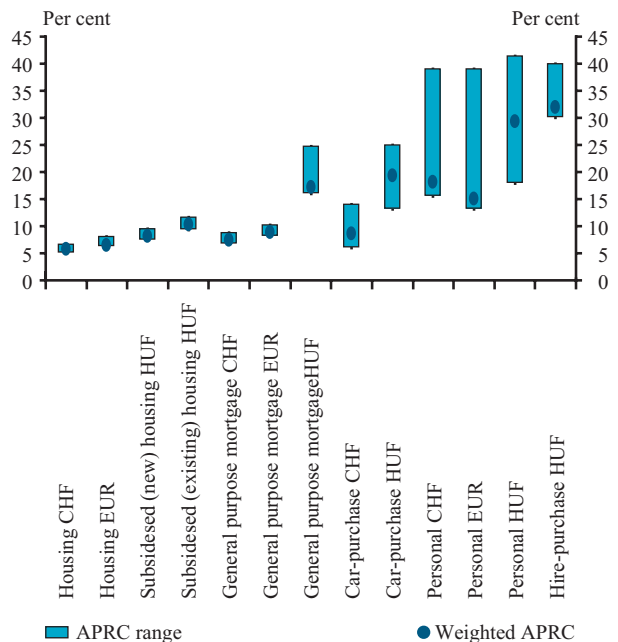
Source: Banking proposals, MNB.

In 2005, similar to the previous period when yields were decreasing, there was a lag between the decline in the BUBOR and in the banks' annual percentage rate of charge for forint consumer credits. Therefore, the bank interest spread slightly increased. Hire purchase loans were an exception; it is assumed that retailers' increasing commissions did not allow for any reduction in borrow-

ing costs at all. The stagnation of outstanding hire purchase loans is also attributable to the fact that this type of credit is the most expensive for consumers.²⁵ Based on changes in interest rate spread, price competition has not appeared in the case of forint consumer loans. However, the composition of consumer loans has a countereffect to price competition on spreads. Owing to the decline in the average amount of newly granted forint loans (larger-sum loans are mainly granted in foreign currency) the unit cost of loans, has increased, which has limited the decline in the spread.

The strengthening of price competition in foreign currency consumer credits is indicated by the significant decline in the interest rate spread, characteristic of personal and car purchase loans. The interest rate spread on general purpose foreign cur-

Chart 2-20
Range of APRCs' proposals and APRCs weighted by new originations



Source: Banking proposals, MNB.

²⁴ Due to the aggregation level of interest rate statistics and the lack of data collection regarding foreign currency loans. Starting from 2005 interest rate statistics have been completed with breakdown according to products and currencies, facilitating a more precise assessment of the developments in price competition.

²⁵ Other factors may also have played a role in the lull of hire purchase loans: in 2005 at a sector level banks put much more emphasis on selling their credit card and personal loan products.

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rency mortgage loans, which are consumer credits with the lowest APRC, remained practically unchanged.

Due probably to the different level of competition, in respect of housing loans developments in the interest rate spread diverged in the market segments of subsidised and market foreign currency loans. The interest rate spread of subsidised loans increased in some extent, while there was a decline in the spread of the foreign currency facilities. We believe that with regard to foreign currency loans the underlying reason is the sharper competition compared to the subsidised facility and other service providers' product. The different competitive environments are illustrated by the concentration ratio, which is much lower both in case of new loans and existing outstanding borrowings in the market of foreign currency loans. With regard to foreign currency loans, it was the euro loans where the interest rate spread declined considerably. As a result, the APRC of euro loans approached that of Swiss franc loans. The underlying reason is that due to risk management con-

siderations several banks intend to shift their foreign currency housing loans from Swiss franc loans to euro loans, which are considered somewhat less risky.

The appearance of facilities for refinancing existing loans with better conditions is also considered to be a sign of strengthening price competition. With their pricing, these facilities – foreign currency, with longer maturity and additional collateral – aim at lower monthly instalments. The intention behind this type of behaviour to acquire clients is to redistribute the already existing clientele. To date it was the facilities aimed at non-prime debtors, e.g. debt-reconstruction facilities, which gained ground. However, with increasing competition between service providers, general refinancing facilities may also become widespread. Attracting clients with positive credit history from other banks reduces the magnitude of asymmetric information, which allows lower banking prices. On banking sector level, the above trends contribute to a decline in risk-adjusted profitability.

2. 2. Market risks

The banking sector's market risk exposure did not change significantly in 2005 H1. Both the total foreign exchange exposure, shown in the banking and trading books, and other market risk exposures at the trading book are at a low level. The repricing structure of the banking book and the implied interest rate exposure have practically not changed. There was some shift in exchange rate exposure: while the total position remained unchanged, by attracting foreign funds banks narrowed their on balance sheet position, which had opened significantly last year. The market risk environment was characterised by a declining and flattening forint yield curve, a temporary depreciation and a slight upturn in exchange rate volatility in the period from March to May.

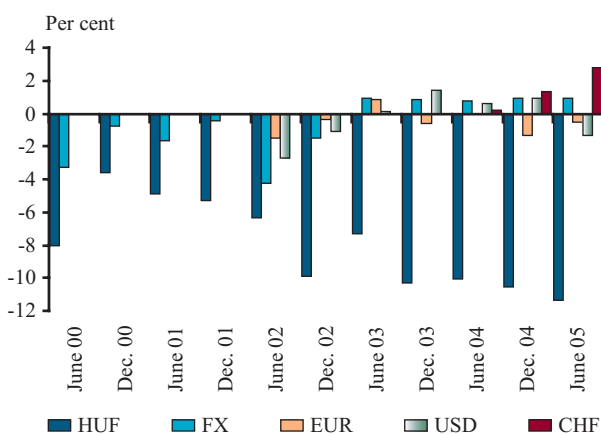
2. 2. 1. Interest rate risk

The capital allocated to cover market risks in the trading book is only a fraction of banks' regulatory capital: it amounted to a mere 2.5 per cent at end-June 2005 and 2.3 per cent at end-2004. According to the 90-day cumulative repricing gaps (see Chart 2-21), there was no important change in the banking books' interest rate exposure either. The widening of the CHF gap is caused by the growth in CHF loans with short-repricing, which was only partly offset by an increase in CHF liabilities and off-balance sheet items.

Changes in forint interest rates affect banks' income via three channels. Because of the banks' negative gap, the decline in interest rates is transmitted faster on the liabilities side than on the assets side (repricing risk), which increases banks' income. However, this effect may be moderated by the fact that certain deposits tend to pay low interest; and for these interest rate adjustment is limited (basis

Chart 2-21

Interest rate exposure: 90-day cumulative repricing gaps/total assets



Source: MNB.

risk). The flattening yield curve also has a benign effect on banks' income, as the decline in the interest rate of liabilities with shorter average repricing exceeds that of assets with longer average repricing. On the whole, due to their negative gap, banks benefited from the changes in the interest rate environment during the last six month.

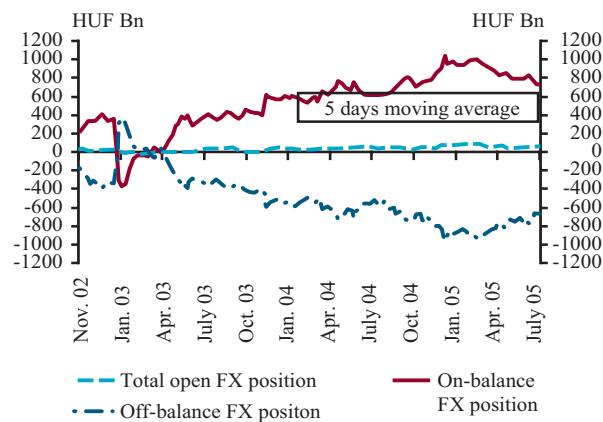
Theoretically, the negative scenario involving depreciation and an increase in yields would cause serious losses to banks due to their interest rate exposure. However, previous experience shows that banks are able to counteract most of the effect of yield rises via adjustment to changes in the base rate with delay and to different degree on the asset and liability side.

2. 2. 2. Foreign exchange risk

The total FX position of the banking sector continues to be low. However, after reaching a peak at end-2004, the on balance sheet open position declined considerably (see Chart 2-22), from 6.3 per cent to 4.9 per cent as a proportion of total assets.

Chart 2-22

FX position of the banking sector



Note: Positive value means FX long position.
Source: MNB.

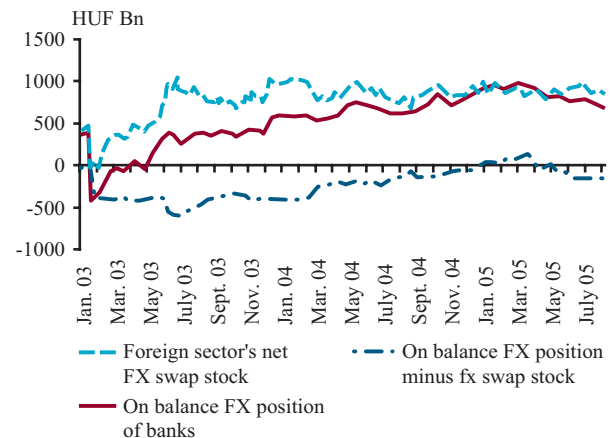
The underlying reason is that the continuing increase in foreign currency loans, which was driven by foreign currency lending to households from mid-2004, was covered by banks within the balance sheet, mainly with liabilities from abroad. Moreover, the magnitude of funds obtained from abroad exceeded the increase in foreign currency loans, which resulted in a declining on balance sheet open position. It is considered to be favourable that the majority of foreign currency funds raised from abroad are longer-term deposits and loans, and subordinated loans. However, the increase in other, short-term interbank liabilities cannot be neglected. The issue of foreign currency-denominated securities can also be considered a new phenomenon, although it is limited to some large banks and mortgage banks.

The magnitude of the on balance sheet open position and its implied hedging requirement are considerably distorted by the net FX swap holdings of foreigners vis-à-vis the banking sector, which has fluctuated between HUF 800–1,000 billion over the last two years (see Chart 2-23). The spot leg of the swap transaction is recorded in the balance sheet, thus opening the on balance sheet position of

banks, while its forward leg hedges it automatically off the balance sheet. When the transaction expires, both positions cease to exist. If the on balance sheet open position is adjusted by foreigners' net FX swap stock²⁷, the following time series is obtained (see Chart 2-23).

Chart 2-23

Adjusted on balance sheet open position



Source: MNB.

Based on the adjusted data, the on balance sheet position is negative most of the time and became positive only around end-2004, to which banks reacted with raising foreign currency funds from abroad. This was not a surprise, since due to the difference between foreign and local currency interest rates, a positive on balance sheet open position would mean financing foreign currency assets from expensive forint liabilities.

Closing the on balance sheet position calculated as above also means that banks' hedging needs, which are typically met by forward contracts with domestic companies, declined.

The direct effect via FX risk exposure of the negative macro scenario featuring higher yields and a weaker exchange rate would not be significant. Those banks with a long/short total FX position would record one-off profits/losses, but their magnitude would not be significant, due to the size of positions.

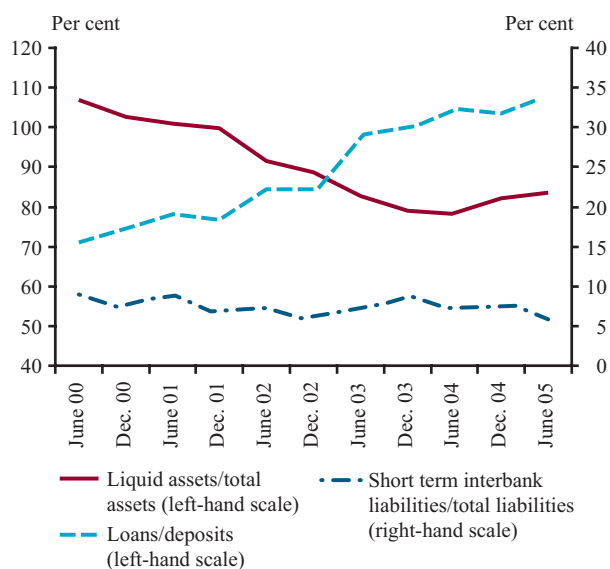
²⁷ Banks' net FX swap positions vis-à-vis other market participants are negligible.

2. 3. Liquidity risk

To measure liquidity, several indicators are used, which describe the structure of the balance sheet²⁸. Of course, liquidity is also influenced by external factors, such as the liquidity of the market of assets held in banks' balance sheets, access to money markets, etc. Various aggregate indicators show different pictures of the liquidity of the banking sector (see Chart 2-24).

Chart 2-24

Liquidity indicators of the banking sector



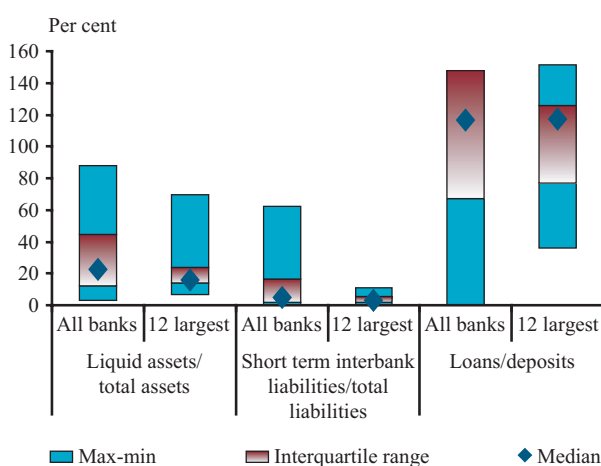
Source: MNB.

The ratio of liquid assets is high and even increased slightly, while money market exposure is low and declining. However, this benign picture is darkened by the further increase in the loan/deposit ratio, which exceeded the generally accepted rule-of-thumb critical threshold of 100 per cent, in 2004.

Individual indicators vary widely among banks, (see Chart 2-25). Certain ratios of smaller banks, e.g. those which have hardly any deposits often take extreme values²⁹, this is why the 12 largest banks are also examined separately (their market share is 86.1 per cent).

Chart 2-25

The distribution of liquidity ratios



Source: MNB.

The chart shows that for the banking sector as a whole, and also within the group of large banks the dispersion is strong according to most of the indicators.

With regard to the liquidity situation in the banking sector on the whole, there is no reason for concern in the short run. However the high value of the loan/deposit ratio suggests that banks will have to finance the further increase in loans from more volatile and more expensive sources.

²⁸ Ideally, off balance sheet items also have to be taken into account, e.g. received and granted credit lines.

²⁹ This is why the banking sector maximum is not shown in the credit/deposit ratio in the chart.

2. 4. Financial conditions in the banking sector

Financial conditions in the Hungarian banking sector can be considered favourable as in addition to a historically high level of profitability and a stable capital position the decline in the differences between banks also contributes to system stability. As in the past, the vast majority of profits in the banking system derives from interest income. The rise in profits, however, is mainly due to the increase in the exchange rate gains realised on securities as a result of a fall in yields, fair value accounting of the non-realised income and the natural improvement of economies of scale. Looking ahead, it can be established that in parallel with the growing number of risks surrounding the basic macroeconomic scenario, the uncertainties regarding the expected growth rate of lending and that of credit risk also increase, resulting in a less predictable level of profitability. The assessment of future developments in profitability and capital position is also made more difficult by changes in international rules relating to accounting standards and capital adequacy.

2. 4. 1. Profitability

High profitability, decreasing differences between banks

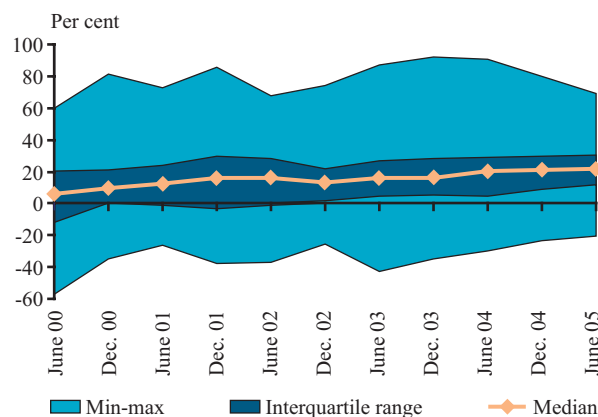
The value of the profitability indicators of the banking system increased further in 2005 H1. Since 2004 H1 banking sector ROE has increased from

26.4 per cent to 31.4 per cent, while ROA grew from 2 per cent to 2.5 per cent.³⁰ Due to exceptionally high profits the temporarily levied special banking tax only had a moderate effect on the profit of the banking system in 2005 H1.³¹

From a stability perspective, the gradual decrease in differences between banks' profitability is a positive development, as the market share of institutions with nearly average or higher-than-average profitability indicators is growing (see Chart 2-26). Simultaneously, the ratio of the number of banks with losses (3) and their balance sheet total fell to a negligible level, also contributing to the higher profitability of the banking system.

Chart 2-26

Pre-tax ROE indicator of Hungarian banks



Note: the interquartile range contains the middle 50 per cent of the banks according to the ROE indicators. The median is a value above and below which 50 per cent of the items can be found.

Source: MNB.

Like previously, most of the pre-tax profit consists of interest income. The interest margin³² remained

³⁰ The calculation of profitability indicators: ROE = pre-tax profit / (equity – balance sheet profit); ROA = pre-tax profit / balance sheet total.

³¹ In 2005 H1, the special banking tax amounted to HUF 14 billion, i.e. 6.7 per cent of pre-tax profit. According to our calculations, in the period under review the ROE indicator would have been one percentage point higher, while the ROA indicator would have been one tenth of a percentage point higher if the special tax had not been introduced.

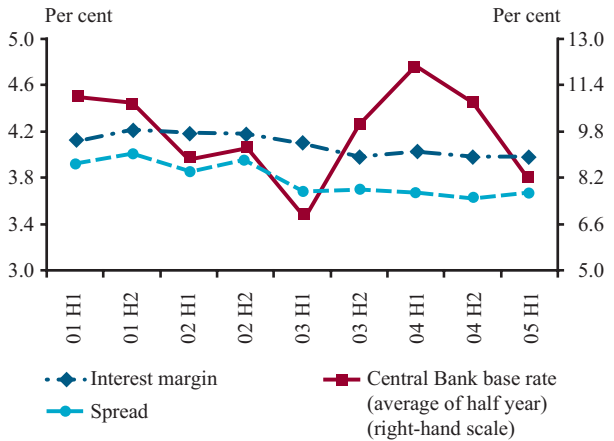
³² Interest margin here is interpreted as the ratio of the net interest income and the balance sheet total. Spread is interpreted here as the difference between the average interest income on interest-bearing assets and the average interest expenses on interest-bearing liabilities. The interest margin of loans is defined as the difference between interest rates on loans and benchmark money market interest rates, while the interest margin of deposits is the difference between money market interest rates and deposit interest rates. Interest margins and spreads move closely together as the ratio of interest-bearing assets and interest-bearing liabilities to the balance sheet total has remained relatively flat although the ratio of interest-bearing liabilities follows a decreasing trend.

stable at around 4 per cent in the last two years reacting to the changes in the central bank base rate to a lesser degree than previously (see Chart 2-27). Banks with higher-than-average interest margins are still typically institutions dealing with household loans.

The interest income in the banking sector was influenced by mutually conflicting price and volume factors. Due to the differences in the maturity/repricing structure of assets and liabilities, falling interest rates and the flattening of the yield curve have a positive impact on interest income, while the same factors have a negative effect due to the stronger competition on the loan side and the lower boundary of certain deposit interest rates.³³ An important volume impact is that institutions realise a stable and high income on outstanding housing loans with mostly a five year re-pricing period, while the ratio of loans provided to the retail sector with higher margins within new transactions is increasing. In some market segments (primarily in household lending), weak price competition also gives banks more room for manoeuvre. All this increases the interest margin.³⁴ At the same time, however, the margin of new foreign currency loans has fallen significantly, while their ratio in total loans has increased. On the assets side, the relative stability of the ratio of sight deposits with low interest rate and cheap foreign exchange liabilities has only had a slight impact on deposit interest margins. As a result of price and volume effects, the interest margin remained stable. Over the medium term, however, a decrease in the margin is expected due to lower inflation and the related low interest environment, stronger competition and possible deceleration in credit demand.

Chart 2-27

Changes in interest margin and spread relative to the change in the central bank base rate

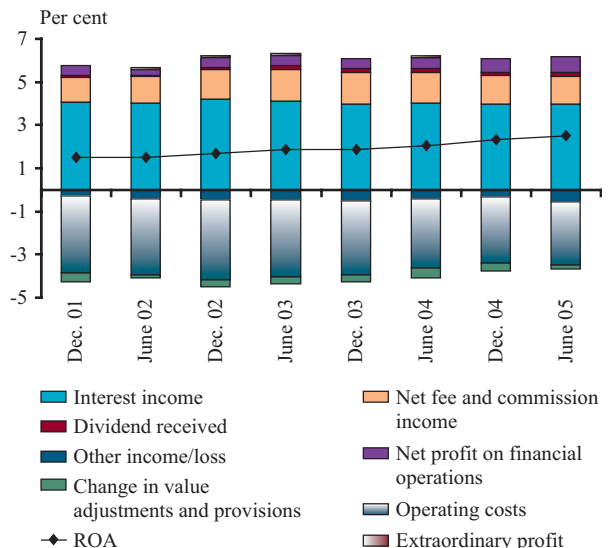


Source: MNB.

The ratio of interest income within net operating income³⁵ is continuously decreasing. Within non-interest income, however, the ratio of profit from financial transactions that are considered volatile components has continued to rise and already accounts for one third of non-interest income. This

Chart 2-28

Breakdown of pre-tax profit relative to total assets



Source: MNB.

³³ For more details on the impact of interest rate changes, see *Report on Financial Stability*, April 2005, (pp. 56-57).

³⁴ In household lending, the introduction of a positive credit register would contribute to the easing of asymmetric information problems, thus making better differentiation of lending conditions – perhaps interest rates – possible.

³⁵ Net operating income is interpreted here as the total of net interest income, dividends received, commission and fee income and the profit from financial transactions.

Risks of the banking sector

significant, one and a half fold rise in the profit from financial transactions can be attributed primarily to the increase in realised income from securities held for trading purposes (rising price due to decreasing interest rates) or to the increase in non-realised income accounted for through the fair value method.

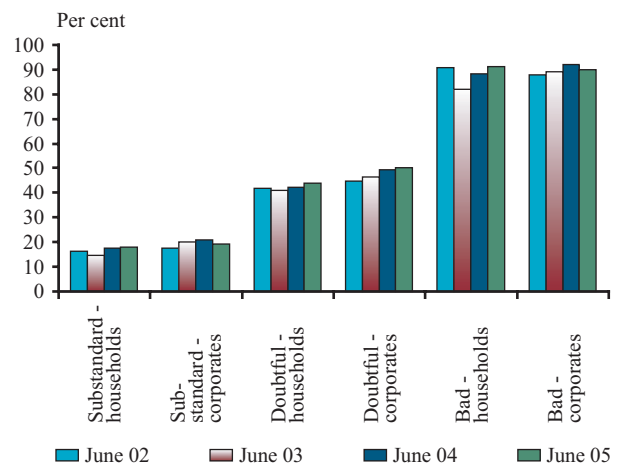
It is very clear from the breakdown of the components of ROA that the increase was caused by the decline in the negative profit components (operating costs, changes in provisions) and the rise in profit on financial transactions (see Chart 2-28). This is somewhat counterbalanced by the decline in other income, which is, however, due to individual factors. The fall in the ratio of the operating costs to the balance sheet total is rather spectacular, reflecting that the vigorous growth of lending leads to the natural improvement in economies of scale.³⁶ This was mainly due to the increase in size compared to expenses. Finally, the fall in value adjustment and provisioning for risk due to the high base in the pre-

vious year also contributed to the increase in profit.³⁷

Despite the decrease of the provisions, the coverage of non-performing loans with provisions has somewhat increased during the last one and a half year. While the quality of housing loans has deteriorated, their coverage increased most markedly (see Chart 2-29).

Chart 2-29

Coverage of non-performing loans



Source: MNB.

Box 2-3 Components of ROE

Decomposition of the pre-tax return on equity (ROE) from a financial stability point of view is used regularly as a method for analysis in the stability reports of a number of central banks as both positive, stability improving and negative impacts urging higher risk-taking can play a role in its rise.³⁸ In this box, we introduce the methodology of the analyses and examine the changes in the components of the ROE indicator in the Hungarian banking sector.

ROE is derived as the product of four factors. While the rise of the first two of these factors is positive from a stability perspective, increase in the other two reflects processes pointing to higher risk-taking. In addition to the direction of the shift of a given component, its level and the cause for the shift also influence the assessment of the risks associated with the processes in question.

³⁶ For more details on the causes of the natural improvement in efficiency, see *Report on Financial Stability*, April 2005, (pp. 64-65).

³⁷ The loss in value was high in 2004 H1 due to the extraordinarily sharp rise in the provisions of one bank accounted for equity participation. Without this transaction, the banking system's profitability would have been even higher in 2004 making this year's increase less spectacular.

³⁸ The Bank of England used the same method for analysing ROE in its December 2003 Financial Stability Review as did Sweden's Sveriges Riksbank in its June 2004 and May 2005 Financial Stability Report.

ROE is derived as the product of the following factors:

$$\text{ROE} = \frac{\text{Pre-tax profit margin}}{\text{Operating income}} * \frac{\text{Risk-adjusted asset turnover}}{\text{Risk-weighted assets}} * \frac{\text{Asset-risk ratio}}{\text{Assets}} * \frac{\text{Leverage}}{\text{Equity}}$$

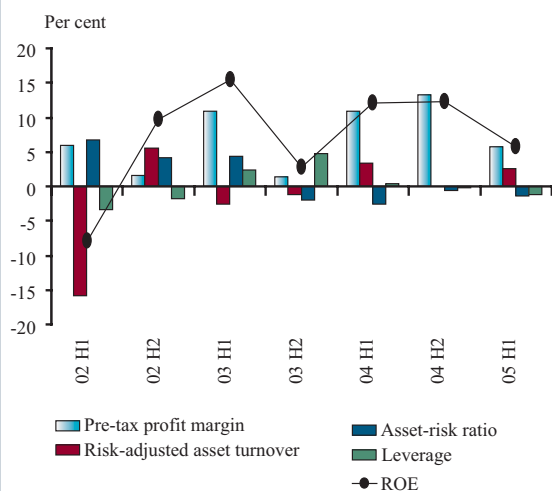
The pre-tax profit margin excludes the impacts of expenses and value adjustment, and according to the equation below it can be interpreted as a kind of efficiency indicator:

$$\text{Pre-tax profit margin} = \frac{\text{Pre-tax profit}}{\text{Operating income}} = \frac{\text{Gross operating income} - (\text{operating costs} + \text{provisions} + \text{extraordinary and ther profit})}{\text{Operating income}} = 1 - \frac{\text{Items lowering profit}}{\text{Operating income}}$$

In the last three years, the profit margin played the most important role in the profitability of the Hungarian banking sector (see Chart 2-30). The other three factors were of less significance and showed lower volatility.

Chart 2-30

Changes in ROE and its components



Note: 12-month roll-over growth rates.
Source: MNB.

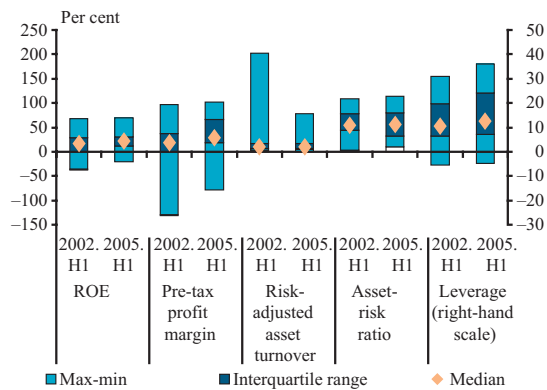
The *risk-adjusted asset turnover* is the second component of ROE and has been flat at around 8-9 per cent in the Hungarian banking sector recently, having a weaker impact on profitability.

The purpose of the *risk-weighted assets*, the next member of the product, is to measure credit risk appetite. This indicator rose from 68 per cent to 74 per cent between 2001 and 2003, but has been declining steadily since then. The interpretation of this indicator, however, raises several methodological issues. The decreasing value of the indicator contradicts the fact that the share of new market segments is growing within the loans of the banking sector, which is primarily dominated by foreign currency loans making the ratio of items considered risky higher. Risks associated with this, however, are not reflected in the adjusted balance sheet total due to fixed risk weights. Furthermore, according to current regulations, risk weights do not change over time and thus, in our view, this factor does not appropriately reflect the dangers arising from higher risk-taking.

The indicator for *leverage* measures dependency on external funds. The rise in the indicator signifies a fall in equity and a lower resistance to stress by banks. Its share decreased in 2002, then simultaneously with the growth of retail lending increased again and since 2003 has been fluctuating between 12.5 and 12.8 per cent: this value is not considered extraordinarily high as this increase is a natural outcome of the deepening of financial intermediation.

Chart 2-31

Distribution of ROE and its components



Note: The interquartile range contains the middle 50 per cent of the banks according to the given indicators.

Source: MNB.

On the whole, on the basis of the breakdown it seems that in terms of stability, favourable factors have played a significant role in the rise of ROE over the last few years, while the picture is somewhat distorted by the difficulties relating to the calculation of the risk-taking indicator. If risk-weighted assets totally reflected the increase in the risky loans, there would be an increasing trend, thus the third component of ROE, the asset-risk ratio would be increasing as well. Parallel with this, the second element of the decomposition, the return on risk-weighted assets would decrease as the increasing level of the risk-weighted assets would be included in its denominator.

Growing uncertainty regarding profitability

The uncertainty surrounding future profitability indicators is growing. Risks related to the macro-economic path and the changes in the income structure and in regulation make the assessment of profitability difficult. From a stability perspective, the fact that the high interest margin realised on outstanding loans mitigates the negative impact of possible shocks can be considered a favourable factor.

The realisation of growth risks may slow down lending significantly in every market segment, leading to a fall in commission and fee income and lower interest income through stronger price competition. The realisation of financing risks related to the current account may influence profitability through a number of channels. Due to the high proportion of unhedged foreign exchange loans, depreciation

of the exchange rate may have a negative effect on the banking sector if it leads to a rise in lending losses over the short term both in household and corporate lending. A rise in yields primarily worsens the quality of loans to clients with forint debts and can have an adverse effect on lending.

In addition to the above, the shift towards more volatile income components and transition to fair value accounting may also increase the uncertainty surrounding profitability. In the case of some institutions the extension of lending activity to the markets of neighbouring countries may have a diversification and income stabilisation effect. In the Hungarian banking sector the ratio of loans to foreign, non-monetary sector to total loans is currently low, but continues to rise. Finally, the income from foreign bank subsidiaries constitutes only a small part of the income in the banking sector, but may increase in the future.

2. 4. 2. Capital position

Unchanged capital adequacy, high internal capital accumulation

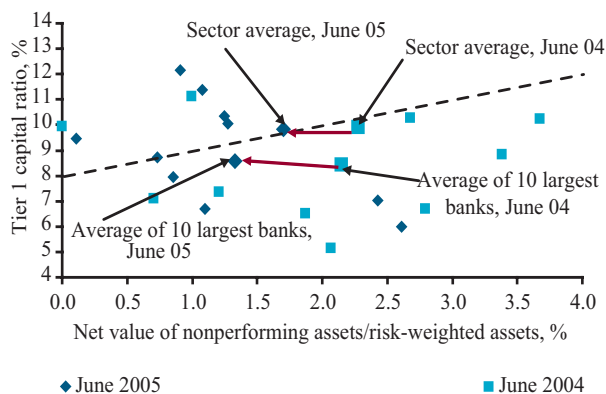
In 2005 H1, the capital adequacy³⁹ ratio of the banking sector fell to 11.4 per cent, somewhat below the level of a year ago, while the capital adequacy ratio (CAR) of all banks continues to exceed 8 per cent. Stress-CAR, however, increased somewhat relative to its level a year earlier which was partly due to a rise in Tier 1 capital and partly to the decline in the net value of non-performing loans. In 2004 H1, the significant increase in the net value of non-performing loans stemmed from the rise in corporate outstanding loans, while the current decline can be attributed to the decrease in such.

The fact that the number of banks with less than 10 per cent CAR has been halved, leaving only two large banks in this category indicates that the difference among the capital adequacy level of banks is decreasing. The rise in regulatory capital was primarily due to the increase in Tier 2 capital, a process attributable to an increase in subordinated loans received by banks with strained capital adequacy ratio. This was counterbalanced by the rise in deductions for limit excess, mainly characteristic of a single bank.

The ability of the ten largest banks to cope with stress is gradually improving (see Chart 2-32). The Tier 1 capital-based stress-CAR assuming maximum losses reaches or exceeds 8 per cent in the case of six banks, while none of the large banks' indicators can be considered critically low.

Chart 2-32

Capital position of ten banks with the largest balance sheet total and their risks measured on maximum losses on non-performing liabilities



Source: MNB.

As previously, internal capital accumulation was high in 2004.⁴⁰ The improvement of profitability at a similar pace and the high level of capital accumulation continue to lead to a stable capital position this year as well. The introduction of the new EU Directive based on the New Basel Capital Accord (CRD) in Hungary in 2007 and the decision on the scope of application of the regulations in the EU decree effective from 2005 relating to the use of International Financial Reporting Standards (IFRS) will considerably influence the developments in profitability and capital position over the medium term.⁴¹

The expected impacts of the introduction of IFRS include factors both improving and reducing profitability which will definitely and significantly restructure both the balance sheet and the profit. IFRS will have a weaker impact on the capital position as it is the regulators' intention to neutralise a few changes in the calculation of the regulatory capital. The box below summarizes the impacts of fair value valuation.

³⁹ Under the relevant statutory provisions, the capital requirement for exchange rate, commodity and trading book risks is excluded from the calculations. Thus, the measures to be taken in the case of non-compliance with the ratio do not apply either; therefore, for the purposes of comparability, we use the capital adequacy ratio with the contents prior to 2002 in order to study compliance with capital requirements for credit and market risks.

⁴⁰ The proportion of reinvested earnings declined somewhat compared to 2003, but even so exceeded 70 per cent assumed as a conservative estimate in our previous Report, reaching 74.5 per cent.

⁴¹ For the time being, the provisions of the decree are to be applied by banks operating as companies on the Hungarian Stock Exchange only in their published consolidated reports, while individual and consolidated supervision reports are to be compiled according to Hungarian accounting standards.

Box 2-4 The direct impact of the fair value accounting on banks

Unified accounting and public disclosure rules are factors of key importance in ensuring financial stability through the development of transparency and market discipline. To this end, every listed company in the EU (with a few exceptions) is required to prepare its consolidated report according to the IAS/IFRS standards established by IASB, the International Accounting Standards Board as of 1 January 2005. The Member States may permit or require individual reports to be prepared according to IAS/IFRS and may do the same in the case of unlisted enterprises.

When calculating banks' regulatory capital, standards requiring or permitting the fair value measurement of assets are of key importance. One of these is the IAS 39 standard which defines the rules of recognition and measurement of financial instruments. According to this standard, financial assets held for trading, derivative instruments and available for sale instruments must be measured at their fair value, and unrealised profit resulting from revaluation must be shown directly in the profit in the case of assets held for trading and as revaluation reserves in equity in the case of available for sale assets. Loans and receivables, as well as held-to-maturity assets must be ordinarily measured at their amortised cost, but, via the so-called 'fair value option', users of the original standard may present any financial instrument at their fair value in their reports.

Experts and organisations interested in the field of supervision and financial stability have had serious concerns about the use of the 'fair value option' from the very start. Two of these concerns are to be noted. On the one hand, as a result of the fair value accounting of held-to-maturity assets, the unjustified and artificial increase in the volatility of the profit and equity may strengthen the procyclical-ity of banks' operations, while on the other hand the depreciation of own liabilities which in addition to a change in market interest rates could also be caused by the increase of own credit risk (e.g. the deterioration of the

credit rating of own-issue securities) increases banks' equity in a paradoxical way. This situation may pose a possibility and at the same time may work as an excessive incentive for banks in a weaker financial position to take on more risks.

As a result of growing criticism, IASB published an exposure draft in 2004 in which it wished to introduce itemised rules to restrain the use of the fair value option. In parallel with the debate, the EU first refused to adopt, but later adopted the IAS 39 standard in part in a 'carved out' version without the fair value option.

Finally, the long debate between auditors and supervisors closed with a seemingly successful compromise. At its June 2005 meeting the IASB adopted some basic principles according to which the fair value option could only be used in the following cases as of 1 January 2006:

- to reduce or eliminate the accounting inconsistencies of matching instruments ('accounting mismatch'),
- in the case of assets or liabilities which are managed on a fair value basis in accordance with a documented investment or risk management strategy,
- in the case of instruments containing embedded derivative products complying with certain conditions.

This change is also supported by EU regulatory bodies and thus, if it is adopted, the complete standard could be introduced in the EU Member States as of 1 January 2006. At the same time, the Basel Committee on Banking Supervision (BCBS) is planning to publish a guidance work on the prudent use of the fair value option, the draft of which it launched for debate in July 2005.

Back in 2004, the Basel Committee on Banking Supervision made several recommendations on the cases in which competent authorities should neutralise the growing volatility of equity via regulatory adjustments. As a result of these recommendations the Committee of European Banking Supervisors (CEBS) worked out prudential filters, the application of

which is to be under the national discretion of the Member States. The most important elements of this are:

- The income from cash-flow-hedge transactions in which the hedged items is recognised at amortised cost cannot be treated as a capital element.
- Income from a change in own credit risk cannot be treated as a capital element.

Apart from this the Committee treats profits/losses on assets held for trading in the same way as it does according to current regulations. This means that interim unaudited profits could be used to cover market risks as a Tier 3 capital element. Among the available for sale assets, however, non-realised profit from the fair value measurement of loans and receivables

cannot at all be included in banks' regulatory capital while income from shares can be taken into account partially in Tier 2 capital. In the case of other available for sale assets (e.g. bonds) any of above mentioned methods can be applied.

The fair value accounting is present in current Hungarian accounting regulations, but only as a possibility. In our view, it would be important to build in rules relating to the implementation of EU regulations and prudential reporting requirements and filters in Hungarian legislation as soon as possible as in this way banks could already take into account the future changes in the Hungarian accounting environment, in addition to preparing for the new capital requirements directive.

3. Special topics





3. 1. Households' financial culture and financial stability

International experience shows that households' exposure to financial risks is permanently growing as a result of changes in demography, economy and the financial intermediary system. The sector with the weakest risk management knowledge is becoming the final absorber of money and capital market shocks more and more directly. When assessing the recent recovery of household lending (primarily foreign currency loans) in Hungary it was asked if households had the appropriate financial knowledge to manage new risks and if they were capable of assessing the risks arising from their decisions.

In addition to welfare losses due to bad financial decisions, poor financial awareness may lead to a decline of confidence in a certain group of financial intermediaries and service providers. In certain extreme cases, the efficiency of financial intermediation may deteriorate and the state's role may strengthen. Recognising this, in addition to the regulation of financial institutions and customer protection, the development of financial culture will become a part of the framework aiming at economic growth and stability (OECD [2005]).

It is safe to say that households are not capable of assessing and managing the growing and changing risks threatening them on their own. The introduction of financial education at schools would be a step forward. The former together with targeted training elaborated with the active participation of the private sector and independent financial advisory services to households would contribute significantly to the improvement of households' financial culture. An efficient, well-coordinated programme aiming at the development of financial culture would

involve considerable social costs, but would also bring major welfare advantages at the same time.

We find the measures taken in Hungary recently to reduce the gap between households' risk-taking and financial expertise insufficient. We expect that if no further steps are taken risks to financial stability arising from the low level of financial culture will increase. Thus, at this stage we find it appropriate to describe the additional risks to financial stability arising from the low level of financial literacy and the possible means of developing financial culture.

3. 1. 1. Developing financial culture: a new element of stability instruments

Growing role of households as final absorbers of money and capital market shocks

Various financial service providers and the state more and more directly shift risks both on the assets and liabilities side to households, the sector with the weakest risk management experience, thereby reducing the fluctuations in their own balance sheets and profit. The reasons for the above are:

- Demographic changes (low birth rate, extended expected age) make the reform of the pay-as-you-go pension systems unavoidable. The new pension systems are based more and more on self care and investments on the capital market attain more significance. As a consequence it is the individuals who bear the risks related to savings (insufficient long-term savings, choosing an instrument inappropriate to one's needs) and the market risks related to

savings (payments may become volatile) and inflation risks (payments are not index linked).

- Challenges caused by the new economic environment: e.g. low inflation (could be coupled with asset price bubbles and excessive indebtedness), extended room for customers, etc.
- Changes in the financial intermediary system:
 - Growing competition due to changes in owners' requirements of banks (withdrawal of public sector from financial intermediation, growing number of international service providers), deregulation, liberalisation and disintermediation. Stronger competition and growing expectations of profit reduce banks' traditional smoothing behaviour over time and the risk sharing in long-term service provider-client relationships, while it increases the share of products exposed to price fluctuations at the market.
 - As a result of accelerated development of product innovation, marketing, sale and communication methods today an average household is faced with a large, complex and fast changing product range. In order to increase sales these instruments could be used in a way to make the household buy a service it does not really need or which is not the most appropriate for its purposes (miss selling).

Insufficient household adjustment could be attributed to three factors.

- Lack of financial literacy leading many times to incorrect financial decisions.
- Weak market position making households the most vulnerable participants of money and capital markets.
- Behavioural traits and limitations of individuals that could lead to risky, incorrect decisions

even if the person is fully informed and has developed financial culture.⁴²

Behavioural features in the above three factors could be interpreted as a framework within which risks taken by households could be more controlled by developing financial culture and customer protection.

Developing financial culture and customer protection

Classical customer protection primarily through the use of legal and regulation methods intends to make households more informed and tries to prevent abuse of dominant position by service providers. At the same time, however, the legal instruments of customer protection limit the range of financial services and thus reduce households' freedom of choice and room for decisions.

The aim of developing financial culture is to enable households to make better use of the wider but riskier range of products and to teach them to identify and manage risks. Households with better financial training can make good use of the wider product range which can increase their welfare. A well-informed and prepared customer forces financial intermediation to stronger competition and at the same time a customer with greater risk awareness causes less lending losses to the sector. Therefore, a well-functioning and efficient financial training programme as opposed to tighter regulations and customer protection could result in better welfare opportunities.

Customer protection and the development of financial culture could become mutually improving instruments. A household with better financial education can enforce its customer rights better, while the requirement for the appropriate supply of infor-

⁴² The study of these phenomena is the subject of behavioural economics. Due to human problem-solving and information processing limitations their rationality is also limited.

mation and its supervision in particular contribute to a greater financial knowledge by households.

Financial culture and financial stability

Compared to their counterparts with better financial training, customers with insufficient financial culture endanger financial stability in two ways:

- Due to their lack of knowledge they could take a riskier financial position (excessive indebtedness, insufficient and not diversified savings, etc.) than their risk appetite would justify. In such cases negative events (e.g. on the market) could cause a greater decline in the net worth and cash flow of this household segment.
- A negative event unexpected by households may even lead to an excessive reaction. Households may significantly reduce their consumption and their demand for financial services (loans and more sophisticated savings). In the course of adjustment confidence in service providers, certain types of service provider and product may be shaken.

If most households' financial literacy is not developed in line with the growth of risks they take as a result of the above factors the intermediary function of the financial sector may be damaged through the following mechanisms:

- As a result of the shift of risks to the customer the aforementioned negative effects could have a direct impact on financial intermediation increasingly only on the lending side. Owing to their shaken financial position households cannot pay their debts back. In the case of significant lending losses the financial posi-

tion of financial intermediaries may also weaken.⁴³

- The financial sector may be indirectly affected by an economic decline⁴⁴ induced by falling consumption on the one hand and by a crisis of confidence on the other. These indirect effects may also appear in the case of shocks to households' savings position alone. Furthermore, most experts agree that inappropriate long-term savings decisions are much riskier than poor debt management due to low level of financial culture as they have a greater macro-economic impact (IMF [2005], p. 84.).⁴⁵

The deterioration of financial intermediation could lead to stronger government participation: taking over a part of the costs incurred through tighter regulations and direct control. Consequently, both the government and the private sector are equally interested in the mitigation of risks arising from inadequate financial culture.

3. 1. 2. Instruments promote financial culture

OECD (2005) gave a rather broad definition for financial education: 'the process by which financial consumers/investors improve their understanding of financial products, concepts and risks and, through information, instruction and/or objective advice, develop the skills and confidence to become more aware of financial risks and opportunities, to make informed choices, to know where to go for help, and to take other effective actions to improve their financial well-being.'

Information provision, instruction and advice form the three pillars of financial education. In addition, it

⁴³ A weaker capital position and negative experience may cause banks to restrict their lending and financial intermediation may suffer.

⁴⁴ The economic downturn may increase lending losses through the corporate loan portfolio and the further deterioration of households' loan portfolio due to the corporate sector's labour market adjustment.

⁴⁵ E.g. in a private pension scheme the effect of low savings, inappropriate investment strategies and the generally weak performance of pension funds.

is important to emphasize the nature of the educational process as knowledge acquired at one point may be forgotten or become outdated quickly due to the rapid development of financial services.

Information provision

When making decisions influencing their financial position for years to come, households must have sufficient information. By sufficient information we mean information broadly based and easily and cheaply available and understandable. Requirements for a broad basis and availability have been met in a number of countries and in some cases we can even talk of a cascade of information.

Experience in the United States, however, shows that the growing amount of information reaching households alone is not enough to improve financial management by households (Hilgert – Hogarth [2003]). The supply of information is only efficient if it is easy to understand. Furthermore, however, a certain degree of financial knowledge is essential to understand these specialised information leaflets and this emphasises the significance of instruction and training.

Instruction and training

The aim of financial education is to make households capable to understand financial ideas and concepts. Based on their subjects three types of training can be differentiated:

- General monetary knowledge (the value of money, inflation, interest rates, exchange rates, etc.),
- General financial management of private individuals (loans, savings, planning the house-

hold's budget, taking appropriate account of long-term objectives, etc.),

- Targeted programmes: training for pre-defined target segments (e.g. young couples) and financial purposes (e.g. buying a new home).

Owing to the possible consequences of inadequate financial culture both the public and the private sector have a stake in financial training. Similarly to other general subjects, teaching general financial knowledge (monetary and financial management) may be closer attached to government organisations due to their public good nature. Experts agree that general programmes elaborated with the help of education policy must become a part of school education (OECD [2005]). Professional coordination of teaching basic knowledge is carried out by government organs in the majority of countries with experience in this field. Central banks also fulfilling a supervision function professionally coordinate both types of general training. In the case of separated supervision and monetary functions, professional coordination is also usually divided: the professional coordination of training on monetary policy is usually carried out by the central bank, while training relating to the household financial management is the task of supervisory organs. In some cases, however, the private sector also participates in coordinating general training.⁴⁶

Targeted training programmes, the third type of instruction, are closer to the private sector's interests and thus the sector's greater participation (both in professional coordination and financing) can be expected. An individual financial service provider considers itself interested in training primarily in the case of a long-term customer relationship. In an intense competition situation, owing to

⁴⁶ In Germany, the central bank established an alliance with the financial sector in order to develop financial culture.

short-term profit-orientation a 'free rider' phenomenon may appear. This could mean in practice that a financial service provider may profit from the training financed by another service provider (the client contracts with him in the end). It could cause conflict that while the sector as whole is interested in the training, the investment may not be recovered on an individual level. This fact draws attention to the role of service provider associations.

In addition to financial intermediaries firms could also be made interested in financial training. As a result of longer term employer-employee relationship the free rider phenomenon may weaken.⁴⁷ At the end of the 1990s a number of large companies in the United States realised that the performance of employees is greatly influenced by the employees' financial distress. As a result, more general corporate training programmes are under way (Garman – Tech [1998]).

The above listed types of instructions have not been introduced in most countries or do not form a well-coordinated programme. In the last few years, having identified the risks arising from the lack of instruction, there were a number of initiatives to strengthen financial training in countries with significant financial markets (United States, Great Britain, Japan, France). Most of these trainings are financed by the government (IMF [2005]). Among international institutions it was the OECD (2005) which worked out a recommendation on principles and good practices for financial education and awareness. The Recommendation calls for the elaboration of financial instruction programmes geared to national characteristics and considers coordination among the different pillars of the programme important.

Information on the efficiency of certain training types is mainly available from experience in the

United States. Opinions on the efficiency of the different training methods vary, but the following general statements can be made (Braunstein – Welch [2002]):

- Very narrow, specialised financial knowledge has little effect on behaviour, while a more general understanding of finances leads to much more successful behaviour by households;
- Households learn fastest through experience: the lessons learnt from their own financial difficulties are of the most use;
- Teaching abstract subjects is not efficient: only lessons based on practice are effective;
- The workplace is an efficient place for training adults; and
- "Life-time learning" is necessary in this domain, as well.

As we can see from the above, though it is very important, training at schools alone is not enough. On the one hand, it is only the younger generation that benefits from the advantages of bringing financial education to the schools. On the other hand, the majority of adults has neither the motivation, nor time to learn or to refresh the knowledge they acquired at school. At the same time, however, in our age the risks related to finances and its management are important for every generation from young people to pensioners. Due to the former, the private sector plays a significant role as it is mainly these institutions who meet customers as service providers when they make their financial decisions. Thus, it is not surprising that in the view of experts and international organisations (IMF, OECD) the private sector should contribute better to financing financial education and should participate in training. There is a scope for this as for example: the total expenses incurred in con-

⁴⁷ One of the most important pillars of the private pension schemes in the United States is a pension fund paid and subsidised by the employer. As a result of such corporate pension schemes, corporate training programmes mainly focus only on savings and investment questions.

nection with financial education (both by the public and private sector) are negligible compared to the financial sector's marketing expenses.

Advisory services

In countries with developed financial intermediation, profit and non-profit organisations providing financial advice to households are gaining more and more ground. Financial advice recommends products taking into account the current general financial processes and helps the customer to make better use of their already existing knowledge.

The biggest problem with this type of advisory services lies in their financing. Usually households are not prepared to pay for such services or only to a small extent. Thus, various service providers usually charge a transaction-based advisory fee, which could carry the risk that sale and self-sustaining purposes overshadow the objective advice.

For this reason it is very important for the advisor to be independent and not responsible for the consequences of the household's decision as this is the best way to insure that the client's interests are in the forefront. In order to encourage that financial advisors serve households' interests better, the IMF (2005) proposed preferential government treatment (e.g. taxing and regulations). In order to counterbalance this preferential treatment advisory services should be made free of potential conflicts of interest and become a transparent activity (e.g. in its expenses).

Sustaining independence is more difficult in the case of financial service providers. More and more financial service providers realise that in order to keep a long-term relationship with their

clients and to sustain their solvency it should help households in managing their financial risks and supply them with appropriate advice regarding their financial decisions and their possible consequences. The OECD (2005) also emphasizes in its recommendation that financial institutions should carry out greater financial education and information provision activity and they should separate these clearly from their advisory services with a commercial purpose (e.g. from private banking).

3. 1. 3. The situation in Hungary

Low level of financial literacy

The factors described in the first chapter have led to the growing role of households in absorbing money and capital market shocks in Hungary as well. Similarly to developed countries, Hungary has a wide range of financial services to offer to households. So far there has been no comprehensive and detailed survey of the financial culture of Hungarian households. Therefore, we can only rely on various financial events and surveys prepared with a different purpose to establish households' inadequate financial culture.

The most important problem is that a major part of society has not taken part in any financial or economic training. Due to the lack of appropriate basic knowledge, people have difficulty in learning about new concepts. As a result, they do not pass sufficient financial knowledge to the next generation either.

Recently there have been a number of financial events showing households' low-level financial culture.

- The property cooperative scandal,⁴⁸ involving mainly investments by pensioners, is a good

⁴⁸ In the case of some cooperatives, the issue of criminal accountability has arisen.

example of the lack of knowledge on the relationship between risk and yield.

- The expansion of lending companies who quickly provide relatively small amounts of loans at a very high interest and for a short term. Borrowers, however, do not always take into account later burdens which could easily push them into a debt trap (HFSA [2005]).

As opposed to the above problems involving a small number of households with a loud reaction from the press, the financial culture characteristic to the sector as a whole is of more significance in terms of financial stability. There are quite a few examples of indebtedness and savings practices attesting to inadequate financial literacy at a sectoral level.

- GfK's regular surveys of households⁴⁹ reveal that their behaviour in choosing banks and products is rather passive which shows a low level of financial knowledge.
- In the last few years risks arising from low-level financial culture appeared primarily in lending transactions, in connection with foreign currency loans in particular. Most households opt for a credit facility with the smallest instalments without taking into account risks (e.g. the possibility of a significant weakening of the exchange rate). An additional risk is presented by the fact that clients with liquidity constraints unable to take up forint loans can obtain foreign exchange loans. (MNB [2005]).
- With the exception of the transitory risk profile increase preceding the Russian crisis (growing number of investments in shares⁵⁰), households' financial savings forms are characterised by traditional risk-avoiding features: bank deposits and government securities

directly⁵¹ and indirectly make up more than 90 per cent of financial savings exposed to market price shifts. We can draw three conclusions from this:

- Households' investment pattern in shares is a good example of the confidence crisis which could appear as a result of financial ignorance. Following the stock exchange shock there has been a permanent confidence crisis regarding shares with losses. Despite the lasting bull market on the stock exchange since then, Hungarian households avoid these investments: transactions continuously decrease outstanding amounts (see Chart 3-1).
- The structure of long-term savings is too reliant on government securities. Owing to low yields all this leads to insufficient savings in a low inflation environment. Thus, based on international experience, a higher ratio of riskier investments in shares would be necessary.
- Their portfolio is not diversified enough which is partly due to a very low level of investments in shares and a marginal share of investments abroad.
- When the speculative attack on the forint market took place in 2003 due to the sharp rise in yields households incurred losses on government securities which had been considered risk-free until then. They sold their liquid investment fund shares at a low price and invested in short-term assets (forint bank deposits and treasury bills). The stock exchange prices increased in the period in question which shows that a more diversified portfolio would most likely have led to lower losses. Seeing the

⁴⁹ Supply of data from the financial market.

⁵⁰ In addition to shares directly owned by households, we estimated their indirect ownership in savings funds and investments funds as well. In early 1998, their share in financial assets exposed to market fluctuations was nearly 9 per cent which was reduced to 2-3 per cent.

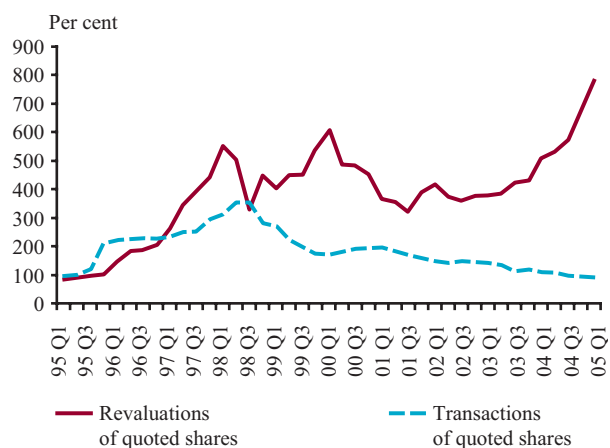
⁵¹ In addition to securities owned directly, household savings held in pension funds, investment funds and life insurance reserves are predominantly government securities.

improving performance of investment funds households started to look for these instruments again. There was no crisis of confidence, but following the losses households became risk-averse and reduced their exposure to instruments causing their losses at a low price.

- The changes in the pension system increased significantly the risk of households' insufficient savings. Based on current developments the portion of people expected only to receive a minimum pension is rather large in Hungary.⁵²

Chart 3-1

Indices of transactions and revaluations of quoted shares owned by households



Note: the transaction is the sector's net purchase position which also includes dividend income, the transactions are seasonally adjusted. The indicators are based on year-end 1994.
Source: MNB.

Measures taken to improve financial culture

Of the pillars of the development of financial culture measures have already been taken in the sphere of financial instruction. The Hungarian supervisory authority has prepared training material on general household finances for secondary schools which can be downloaded from the authority's homepage and also sent some training

films to schools. A national education programme, however, has not been launched yet. The MNB wishes to increase households' general knowledge on monetary policy through its Visitors' Centre and with the help of journalists through its newsletter entitled 'Jegybankunk'. By communicating the findings of its *Report on Financial Stability* the Bank also wishes to reach the wider public.

In the 1990s, the criteria relating to the provision of sufficient financial information (wide range, availability and clarity of information) were fulfilled only to a limited extent. The sources of information have expanded recently: a great number of sources on products and their comparison is available (economic periodicals and Internet pages). A number of regulatory measures have been taken to inform households better (e.g. the introduction of the housing loan APRC and the leaflet on understanding risk). Nevertheless, due to the limited use of the Internet and the lack of an advanced financial culture, the necessary information does not reach a large part of the society or most people are incapable of understanding it sufficiently. Despite this, the financial sector concerned spends its money only on marketing targeted at the motivation of sales in the narrow sense, while they pay less attention to supplying better information to clients. As of right now, there are no independent organisations specialised in the provision of financial advisory services to households in Hungary. Although they consider themselves independent, various financial broker firms have a vested interest in sales, as they receive fees based on transactions. In summary, we find the above measures insufficient in the light of increased risks and the underdeveloped financial culture of households. We expect that unless further measures are taken

⁵² In 2004, the self-employed and employees outside the sphere of institutions (most of them registered at a minimum wage or work in the black economy) represent approximately 30 per cent of the total number of employees.

risks to financial stability will grow due to the low level of financial culture.

Bibliography

Braunstein, S. and Welch, C., 2002, 'Financial literacy: an overview of practice, research and policy', Federal Reserve Bulletin.

Garman, T. and Tech, V., 1998, 'Consumer Educators, Now Is The Time For A Paradigm Shift Toward Employee Financial Education', Consumer Interests Annual, Vo. 4.

Hilgert, M. and Hogarth, J., 2003, 'Household financial management: the connection between

knowledge and behavior', Federal Reserve Bulletin.

IMF, 2005, 'Global Financial Stability Report', Household Balance Sheets.

MNB, 2005, 'Report on Financial Stability', <http://www.mnb.hu/Engine.aspx?page=mnbhustabil>

OECD, 2005, 'Recommendation on principles and good practices for financial education and awareness'

HFSA, 2005, 'Report on the operation of supervised sectors in 2004',

<http://www.pszaf.hu/engine.aspx?page=pszafhupublikaciok>

3. 2. The reasons for and consequences of excessive credit growth

The excessive growth rate of loans which cannot be explained by fundamental reasons may carry a number of risks in terms of stability. The expansion of loans permanently and excessively surpassing the equilibrium rate may contribute to the appearance of asset price bubbles, over-heating of the economy, deterioration of the external balance and strengthening of inflationary pressures, while at the same time it may also increase the banking sector's credit risk. The bursting of a credit bubble could lead to developments of opposite directions. Economic performance may decline significantly, which – through the deterioration of debtors' portfolios and due to a considerable deceleration or break in lending – could lead to a fall in the profitability of the financial intermediary system. This could even result in the breakdown of the lending channel (a 'credit crunch'), which could strengthen the negative cyclical fluctuation of the real economy even further. Therefore, due to its often serious consequences in terms of macroeconomic developments and financial stability, examining the phenomenon of credit booms is of primary importance to the central bank.

The main purpose of this study is to highlight the importance of this topic. The section below reviews the most important theoretical and empirical findings of the literature and then attempts to describe our region's experience. Finally, there is a discussion of those policy instruments in general that may facilitate the prevention of the appearance of a lending boom. It is important to note, that this study forms a part of a wider research programme within the Magyar Nemzeti Bank, which

examines and evaluates the growth rate of lending in Hungary based on the experience in the EU with the help of the definition of the equilibrium path of lending and discusses the reasons and circumstances of the appearance of potential lending booms in the future. The detailed findings of this research will be published in a later report.

3. 2. 1. Theoretical review

According to economic literature, credit growth can be divided into three components: trend, cycle and boom.⁵³ The theoretical models of the academic literature mainly explain the cyclical component. These models can be divided into two major groups depending on whether their cyclical nature derives from behaviour in the real economy or in the banking sector. Financial accelerator models investigate asymmetric information and the fluctuations of the real economy's wealth as a collateral value relative to the business cycle (Bernanke and Gertler [1989], Kiyotaki and Moore [1997], Calvo and Mendoza [2000]). In contrast to this, banking behavioural models examine the fluctuations of banks' lending policies induced by the business cycle (e.g. procyclicality, cf. Asea and Blomberg [1997], Lown and Morgan [2001]).

In empirical papers the study of components outside the cycle is of more importance. Accordingly, based on international experience we review below the factors leading to the appearance of excessive credit expansion and the consequences caused by credit booms in macroeconomic developments and financial stability.

⁵³ In the case of emerging countries, the fact that financial intermediation of shallow depth quickly reached the equilibrium level makes the breakdown of credit growth more difficult. Managing the structural breaks in trends represents an important challenge when identifying credit booms.

The reasons for credit booms

The factors leading to the appearance of fundamentally unjustified credit booms can be divided according to whether they facilitate the 'excessive' growth of banks' supply of loans or the demand for loans by the private sector. On the supply side *financial liberalisation* could be considered as one of the most important factors. The rapid expansion of loans following financial liberalisation can become especially excessive (and dangerous) if it is not accompanied by adequate adjustment of prudential regulations. A sharp increase in *capital inflows* due to external factors (e.g. low international interest rates) could also lead to excessive credit expansion. From the perspective of banks' behaviour, *increasing competition* among banks could also contribute to a credit boom. Intense competition causes the narrowing of margins and banks try to counterbalance this negative impact on profitability by increasing the volume of loans. This can lead to excessive credit expansion if sharper competition is coupled with a significant increase in banks' willingness to take risks.

Excessive growth in the private sector's credit demand can be caused by *positive supply shocks* (related to technology, etc.) if the output elasticity of credit demand is strongly pro-cyclical. *Positive shocks* in the *asset* position of market participants generating significant demand for investment or consumption could have the same effect.⁵⁴ The improvement of permanent income expectations and lower nominal interest rates due to declining inflation could represent another important factor that would lead to lifting liquidity constraints, primarily for households.

Excessively optimistic expectations relating to economic prospects could strengthen both the

credit demand and credit supply side. According to the 'new environment hypothesis'⁵⁵ this could be due to the low inflation environment. While similarly to the impacts of a change in the economic structure (e.g. 'new economy'), central banks' successful disinflationary policy and efforts to achieve price stability may strengthen financial stability through a number of channels (e.g. more predictable return on investments), it may also contribute to the appearance of unfounded optimistic economic prospects that could result in an increase in spending and growing indebtedness due to low interest rates. Through these influences excessively optimistic expectations may cause financial imbalances (asset price bubbles and credit booms).

In addition to the excessive optimism of economic participants *implicit or explicit government 'bail-out' guarantees* may also contribute to the appearance of credit booms (moral hazard). In the case of a number of emerging countries, for example, setting the exchange rates was considered an implicit guarantee which significantly encouraged indebtedness in foreign exchange.

Potential consequences of a credit boom

Due to the close relationship between the system of financial institutions and the real economy, credit booms may have a negative impact both in macroeconomic and financial stability terms. The extent of such a negative impact, however, could be significantly influenced by how developed the economy and the financial infrastructure are. The most significant macroeconomic risk is a currency crisis, while in terms of stability it is a crisis in the banking sector that represents a major risk.

⁵⁴ Gourinchas et al. (2001) found that this is likely to be caused by the discovery of new natural assets, a rise in asset prices or structural reforms in the economy.

⁵⁵ See Issing (2003), for example.

Experience in the last decades shows that there is a strong correlation between these two major types of risk as they often appear simultaneously. When looking at the macroeconomic effects of the credit booms we can establish that in the case of developing and developed countries the 'boom and bust' cycle increased the volatility of GDP growth and asset prices, as well as the relative volatility of non-tradable product prices, had a negative effect on banks' loan portfolios and increased the external financing costs of the financial system. The extent of the macroeconomic shock varied significantly from country to country, depending on how developed the economy or the financial system was. The studies reveal that in the case of open countries, credit expansion associated primarily with investment boom had no major effect on inflation (Gourinchas et al. [2001], IMF [2004]). Looking at the impact of 'boom-bust' cycles on economic sectors (Tornell and Westermann [2002]), it is worth noting that during credit boom banks in countries with medium-sized income mainly obtained finances from abroad, while they had significant unhedged loan exposure to exchange rate risk vis-à-vis the non-tradable sector and households. As a result, credit expansion was accompanied by the appreciation of the exchange rate and faster growth in the tradables of the non-tradable sector. Following a marked decline in lending, however, the crisis was characterised by opposite developments: the real exchange rate depreciated, the spread between the interest rates on loans and deposits rose significantly, the output of the non-tradable sector slowed down markedly, while the output of the tradable sector increased. The authors attribute the difference between the outputs of the tradable

and non-tradable sectors during the credit boom to the sectoral differences between financing opportunities and the level of 'currency mismatch' undertaken by each sector.

Regarding *indirect impacts on financial stability* a number of empirical studies have shown that excessive credit expansion increases the probability of the occurrence of banking crises.⁵⁶ With regard to the consequences of a credit boom, developing countries differ significantly from developed regions. Between 1970 and 2002, the IMF' study identified 18 cases of excessive credit booms in developing countries 85 per cent of which led to a banking crisis, while 75 per cent ended in a currency crisis (IMF [2004]). In the case of developed countries most credit booms increased the probability of a banking crisis, but did not cause a financial crisis and ended in 'soft lending'⁵⁷ (Gourinchas et al. [2001], Tornell and Westermann [2002]).

It is important, therefore, to differentiate between the vulnerability of developed and emerging countries. In developed countries credit booms caused mainly macroeconomic shocks, while in emerging countries (in Latin America in particular) macroeconomic instability is much more often coupled with a banking crisis following fast credit expansion. In addition, the breakdown of the financial intermediation channels ('credit crunch') in developing countries contributed to a large extent to the decline in economic performance and to the deepening of the financial crisis.

Identifying credit booms

Research on credit booms is at its initial stage and this is well represented by the fact that economists

⁵⁶ See studies by Demirgüç-Kunt and Detragiache (1997), Eichengreen and Arteta (2000), Kaminsky and Reinhart (1999) and Borio and Lowe (2002), as well as Ottens and Lambregts (2005) *inter alia*.

⁵⁷ Even among developed countries there are a few examples of excessive credit booms followed by a crisis in the banking sector (see Scandinavian countries).

have not accepted a uniform definition of a credit boom. Nor is the methodology for identifying this phenomenon elaborated. In most cases empirical literature defines a reference value and considers a permanent and large positive deviation of credit growth from this value a credit boom. The literature can be divided into two large groups depending on the type of methods used by researchers to define the reference or the equilibrium value.

In the literature, the most widespread method to define the reference value is with the help of the Hodrick-Prescott filter which uses the real growth rate or the depth of intermediation (credit/GDP ratio) as the variable for lending.⁵⁸ One of the disadvantages of using the growth rate is that it does not take into account the level of lending. Thus, for example, lending returning to its normal level following a credit crunch could also be identified as a credit boom. Another problem with the use of the credit/GDP ratio is that it does not separate the developments in outstanding loans from the GDP and thus it does not necessarily identify episodes when excessive credit expansion is coupled with an output boom as a credit boom. Finally, there are attempts to identify credit booms based on aggregate outstanding loans, although there are also examples of a sector-based study of credit booms as well.⁵⁹

Gourinchas et al. (2001) defines the threshold value based on the relative (percentage) or absolute (percentage point) difference from the loan/GDP ratio trend ('relative' vs. 'absolute' boom). The authors provided 6 threshold values each: in the case of a relative boom the value was between 12 and 42 per cent, while in the case of an absolute boom it was between 3 and 8 percentage points. Tornell and Westermann (2002)

considered lending excessive when the growth rate of real outstanding loans exceeded 10 per cent of the average of the previous two years. The IMF (2004) defines a credit boom as deviation of the real credit growth rate from the trend by a 1.75 dispersion in a given year.⁶⁰ Valderrama (2005) combines the aforementioned models and uses the credit/GDP ratio and real outstanding loans as variables and examines relative and absolute deviances as well. The number and ratio of episodes identified as credit booms could vary considerably in different studies depending on the 'tightness' of the definition used.

Another possible method to identify credit booms is to estimate the equilibrium level of credit growth or financial depth. This estimate-based method was first discussed in a study by Calza et al. (2001, 2003) where a credit demand model was estimated for the whole of the euro area with the help of a vector error correction model (VECM). It defined credit booms by identifying the equilibrium growth of real outstanding loans, deriving them from the long-term relationship between real outstanding loans, nominal lending rates, real GDP and inflation. Hofmann (2001) was also one of the first researchers to use this model for 16 developed OECD countries. In contrast to Calza et al. (2001, 2003), he identified credit booms through the equilibrium rate of the depth of financial intermediation calculated from the long-term relationship between credit/GDP, real interest rates, real GDP and the property price index.

In empirical literature there have been only a few attempts to identify credit booms in CEECs. Schadler et al. (2004) analyse the euro area with the aim of identifying CEECs' credit booms in the past and define the probability of credit booms in

⁵⁸ In some cases real outstanding loans are used.

⁵⁹ For more details, see Cottarelli et al. (2003).

⁶⁰ The choice of this threshold was motivated by the fact that assuming a normal distribution of deviations from the trend the appearance of these outliers would have a 5 per cent probability. The results were also robust when the 1.5 and 2 multiplier was used.

the future. They assume that the banking sectors in CEECs will gradually converge towards the banking system of the euro area and it is difficult to define ex ante which 'non-core' EMU country's experience could become the benchmark in terms of the future development of CEECs.

Another study (Brzoza-Brzezina [2005]), however, using a similar method estimates the model for the CEE-3 countries under review arguing that the expectation according to which accession to the euro area would result in financial depth similar to that of the present EMU member states in the new EU members is not realistic.⁶¹ Having defined the equilibrium credit/GDP ratio the author makes assumptions on the future development of exogenous real interest rates and derives the future expected path of lending with their substitution in the estimated model.

In the case of CEECs it causes considerable problems that the depth of financial intermediation has not reached the equilibrium level yet, as it started at quite a low level. It represents a major challenge to define the structural changes of financial intermediation when identifying credit booms.

3. 2. 2. Experience in less developed EMU countries and in CEECs

In the next section of our study we examine peer groups relevant from the point of view of the Hungarian banking sector, as the past experience of less developed EMU member states could be very useful for the countries about to join the euro area with regard to the expected path of credit growth or the impacts of rapid credit expansion. It is also necessary to compare credit expansion in

Hungary with that of other CEECs with a path of similar financial development and to examine the factors influencing the probability of the appearance of excessive credit expansion in the region.

Less developed EMU countries

In the years before and after EMU accession there was a rapid credit expansion in a few less developed euro area countries,⁶² which could in fact be considered as an accommodation process to the new equilibrium. It is, however, important to emphasise that the fast growth rate of credit expansion leading to a new equilibrium level could in itself involve a number of risks in terms of financial stability. The rate of credit expansion varied from country to country, while the credit/GDP ratio grew fastest in Portugal and Ireland. In the four countries under review the rate of credit growth slowed down markedly only in Portugal following a credit expansion period. It is, however true that this did not result in a fall of the credit/GDP ratio as the deceleration of credit growth fell slightly behind that of the GDP growth rate.

In these countries both macroeconomic and structural factors contributed to fast credit expansion. The fall in real interest rates was one of the most significant factors in these developments which continued after accession as well.⁶³ Real convergence with more developed member states and the improvement of growth and income prospects due to EMU accession were also of key importance. Furthermore, the financial liberalisation measures in several countries in the 1090s also contributed to fast credit growth (Honohan [1999])⁶⁴, and the credit supply side was strength-

⁶¹ The CEE-3 countries include the Czech Republic, Poland and Hungary.

⁶² Portugal, Spain, Ireland and Greece.

⁶³ The latter was due to the recovery of domestic demand and to higher inflation as a result of the Balassa-Samuelson effect.

⁶⁴ This had a major impact mainly in Greece and Portugal. In Ireland, liberalisation measures of a larger scale took place before the early 1990s.

ened by sharper competition between banks. Finally, in certain countries fiscal incentives also contributed to credit expansion (e.g. subsidising the interest on housing loans in Portugal).⁶⁵

Fast credit expansion had a significant negative effect on macroeconomic stability and through this on financial stability only in Portugal. On the one hand fast credit expansion resulted in a severe deterioration of the external balance: between 1995 and 2000 the current account deficit grew from 0 to 10 per cent. It represents a serious expense in the real economy that the volatility of GDP significantly increased as opposed to the steady growth characteristic in the years before joining EMU. In 2001 the GDP growth rate decreased from an outstandingly high 8.5 per cent to 1.6 per cent and the economy even fell into recession in 2003 (-1.4 per cent). The greater volatility of GDP, however, was not accompanied by faster average growth. Between 1995 and 2004 Portugal had the lowest average annual GDP-growth rate (2.7 per cent) among the countries under review.

In the other countries financial stability was not significantly adversely affected following credit expansion:

- In Ireland, the outstanding expansion in the second half of the 1990s was followed by soft landing and growth remained stable at a relatively high level. In addition, it is a favourable development that the credit boom did not result in the deterioration of the external balance either. In terms of stability, however, the fast increase in house prices accompanying the housing loan boom could carry risks.
- In Greece, the fast credit expansion led to a significant deterioration of the external balance position, although to a smaller extent than in

Portugal. In 2000, the current account deficit reached its maximum at 7 per cent of GDP. On the other hand, in the period between 1995 and 2004 Greece had the lowest volatility of GDP growth among the countries under review and average annual GDP growth was also higher than in Spain and Portugal.

- In Spain, the fast stage of credit expansion started later than in the other countries as the initial depth of financial intermediation was much higher. Nevertheless, following the EMU accession and mainly between 2003 and 2004 a fast credit expansion took place primarily due to fast growth in housing loans. Similarly to the Irish example, this resulted in an increase in house prices not following fundamentals which could carry risks in terms of stability.

The most important lessons learnt from the earlier credit booms of less developed EMU countries are the following (Schadler et al. [2004] and Brzoza-Brzezina [2005]):

- Credit booms started 3-5 years before EMU accession and the credit growth rate reached its peak in the year of the accession. In certain countries, however, lending started to grow again in the last few years.
- Credit booms were primarily fuelled by the fast expansion of housing loans, although in certain countries corporate lending also grew at a robust pace.
- The depth of financial intermediation grew significantly before joining EMU. Following credit booms, the depth of intermediation exceeded the average of the euro area in Portugal and Ireland.
- Credit booms had no significant direct negative effect on the stability of the banking system, including even Portugal where the credit

⁶⁵ This is indirectly proven by the analysis of Martins and Villanueva (2003), which showed that the termination of interest-rate subsidies decreased the probability of taking up new loans to a great extent.

boom was followed by major financial imbalances and volatility in output. The profitability and capital position of the banking sectors remained stable and the quality of the loan portfolio improved in most cases. In a number of countries, however, credit booms resulted in a significant house price inflation.

The fact that fast credit expansion did not result in the deterioration of the loan portfolio was partly due to that the ratio of non-performing loans is a delayed indicator of the changes in the quality of the portfolio. A large volume of new loans 'automatically' improves the portfolio quality indicators and payment problems only come to the fore when

the economic environment deteriorates. It should be noted, however, that portfolio quality did not fall in Portugal either where the end of the credit boom was followed by a significant deceleration (or recession) in economic growth.

The favourable portfolio quality was due to the fact that a major part of credit expansion was realised through house mortgage loans where the probability of non-payment could be considered relatively low. At the same time, the development of banks' risk management techniques and the fast expansion of the facilities for transferring credit risk (securitisation, loan derivatives) could be a major factor.

Table 3-1

Supervisory and regulatory measures to manage fast credit growth in EMU-4 countries

Greece	<ul style="list-style-type: none"> • Volume constraints on loans from mid-1999 to April 2000. If credit growth was above a certain value banks had to deposit a non-interest bearing amount equal to the difference. • Tight reserve regulation after EMU accession. In order to avoid excess liquidity when reducing the required reserve ratio to the euro area level (2 per cent), the reserves becoming available were converted into interest-bearing deposits blocked at the central bank. Until the end of 2001 this was gradually made available. • Increased monitoring of the quality of banks' risk management, stress tests and scenario analysis. In addition, greater emphasis was laid on increasing the market's disciplinary effect through tighter requirements regarding publications, on strengthening the coordination between supervisory authorities and the independence of supervisory bodies.
Ireland	<ul style="list-style-type: none"> • Moral suasion by the central bank (letter of concern). • Requiring every credit institution to undergo an independent survey which examined if their risk management systems complied with the best international practice. • Inspection of institutions dealing with mortgage loans and financing business properties to examine whether their lending standards are adequate. • Establishment of a unified financial supervisory authority.
Portugal	<ul style="list-style-type: none"> • Strengthening the regulatory environment of the rules relating to general risk provisions, large exposures, connected lending and capital adequacy. • Tightening the capital adequacy requirement for housing loans with LTV over 75 per cent and tightening the provisions for consumer loans in early 1999. • Increased reporting and publication requirements in connection with banks' risk management practice and liquidity position. Stress tests and scenario analysis in order to identify banks with riskier lending profiles and to adjust provisioning and capital adequacy requirements accordingly. Strengthening coordination among supervisory authorities inspecting the financial sector and establishing the Supervisory Council in 2000.
Spain	<ul style="list-style-type: none"> • Introduction of dynamic provisioning (statistical provisions) in July 2000 serving the smoother process of provisioning through cycles. • Comprehensive monitoring of households' ability to repay debts and moral suasion on banks to achieve/sustain prudent lending practices.

Source: Hilbers et al. (2005), Brzoza-Brzezina (2005).

Regulatory and supervisory attempts to keep credit expansion in a prudent framework could have also contributed to sustaining good portfolio quality. These include the tightening of provisioning and capital adequacy rules, moral suasion to increase banks' risk consciousness and in certain cases the use of administrative constraints (see Table 3-1).

The new EU Member States

Recently there has been a fast credit expansion in a number of CEECs, in particular in lending to households. There are, however, major differences as far as the growth rate of loans to the private sector is concerned: CEECs can be divided into two broad groups. In the Baltic states, Slovenia and Hungary there has been relatively fast financial deepening recently. In 2003-2004 in certain countries the annual growth rate of credit/GDP ratio reached or approached a level characteristic to the credit booms of less developed EMU countries.

With the exception of Slovenia, credit expansion was primarily fuelled by housing loans over the last few years. In contrast to the Baltic states, rapid credit expansion took place in Hungary despite relatively high market forint real interest rates which was primarily due to government transfers in the form of interest-rate subsidies for housing loans and the spread of cheap foreign exchange loans.

In the other group of CEECs (the Czech republic, Slovakia, Poland) the deepening of financial intermediation stopped or slowed down mainly due to weaker corporate demand for loans. Recently, however, lending to households has recovered in these countries as well.

A number of studies contemplate the possibility or risks as to whether excessive credit expansion is likely to appear in CEECs in the period leading to

euro adoption and in the subsequent years. The continuation (or appearance) of fast credit growth may be induced by the following factors:

- Continuation of nominal interest rate convergence.
- Improving growth and income prospects as a result of EMU accession.
- Following euro adoption, as a result of the Balassa-Samuelson effect, the real interest rate level may be permanently lower than in the current member states of the EMU.
- Due to the initial shallow depth of intermediation convergence potential is rather large.
- High growth expectations by foreign owners partly due to the more moderate growth potential of home markets.

Certain factors, however, indicate that credit growth is likely to be slower than in the case of credit booms in certain EMU member states:

- Due to the later stage of interest rate convergence in most CEECs real interest rates have less room to fall than in the case of less developed EMU member states.
- The inflow of direct investment could in part substitute the corporate sector's demand for loans.
- Structural factors, sharper competition between banks in particular, pointed to a decline in interest rates on loans already in the last few years.
- In certain countries fiscal incentives (e.g. interest rate subsidies, tax allowances for housing loans) strengthened credit expansion in the past, mainly in the area of housing loans.

Authorities responsible for financial stability have taken more measures to keep credit booms under control in the new EU member states. Compared to less developed EMU countries they have used 'less severe' methods (e.g. moral suasion) for the time being. In certain countries (Estonia, Latvia)

these measures have only had a limited impact so far and have failed to slow down the fast rate of credit growth considerably.

3. 2. 3. Possible policy solutions

Although the aim of our analysis is not to formulate concrete regulatory recommendations, we consider it important to identify possible economic policy-related or regulatory solutions.

According to empirical literature explaining crises in the banking sector credit booms are one of the best early indicators of a banking crisis. As a possible future excessive credit expansion may have serious negative consequences in terms of financial stability, it is important to review what economic policy-related methods are available to avoid instability or mitigate unwanted impacts. Central banks and supervisory authorities may use 'soft' methods (communication and moral suasion) against a credit expansion they consider too fast and can use more effective measures if they do not succeed this way. When choosing a method it is important to evaluate the limitations on its application and its potential costs:⁶⁶

- Prudential methods: in certain cases the tightening of regulations (e.g. provisioning, capital requirement, collateral requirement, LTV ratio) could be an adequate solution for excessive credit growth.
- Monetary policy: some researchers suggest that credit expansion becoming too fast could be slowed down effectively by tighter monetary policy. The room for manoeuvre by monetary policy, however, could be limited if capital flows are too sensitive to the interest rate (Cottarelli et al. [2003]).
- Fiscal policy: if the leeway for monetary policy is restricted, fiscal policy could be used to

avoid the overheating of the economy. Fiscal contraction of demand required by convergence could have an impact in this direction.

- Constraints on capital flows: membership in the EU (or in the OECD) does not exclude temporary constraints on capital flows. Nevertheless, the effectiveness of these constraints or their impact on reputation could be questionable.
- Volume constraints on lending: in principle the temporary use of lending ceilings is not precluded. Its disadvantage is that it distorts market competition and the effectiveness of intermediation in the banking sector.

In the case of credit booms in less developed EMU countries and the ongoing fast credit expansion in the Baltic states, the authorities used the following methods to slow down credit growth and/or to avoid the possible negative effects most often in addition to moral suasion:

- Prudential rules: tightening provisioning rules for non-performing loans (Greece), increase of capital requirement for housing loans with LTV exceeding 75 per cent (Portugal), etc.
- Monetary policy: the temporary tightening of the mandatory reserve requirement (Greece), the slower-than-planned decrease of the reserve requirement (Estonia, Lithuania) or a rise in interest rates (Latvia).
- Volume constraints on lending: in 1999, Greece introduced temporary measures as a response to robust capital inflows.

Empirical experience clearly shows that there are a number of solutions for managing credit booms depending on what methods are available in a given policy framework and on what the constraints and costs of their application are. Decision-makers may be faced with the challenge of choosing the ideal solution, especially in a

⁶⁶ For a review of possible methods, see Cottarelli et al. (2003).

country where the depth of financial intermediation is quickly and intensively catching up with the equilibrium path. This topic, however, requires further in-depth research.

References

- Asea and Blomberg**, 1997, 'Lending cycles', NBER Working Paper No. 5951.
- Bernanke and Gertler**: 'Agency Costs, Net Worth and Business Fluctuations', *The American Economic Review*, vol. 79, No. 1 (Mar. 1989) 14-31.
- Borio and Lowe**, 2002, 'Asset prices, financial and monetary stability: exploring the nexus', BIS Working Paper No. 114.
- Brzoza-Brzezina**, 2005, 'Lending Booms in Europe's Periphery: South-Western Lessons for Central-Eastern Members' ECB Background Paper.
- Calvo and Mendoza**, 2000, 'Capital-Markets Crises and Economic Collapse in Emerging Markets: An Informational-Frictions Approach' *American Economic Review*, Vol. 90, No. 2, pp. 59-64.
- Calza, Gartner and Sousa**, 2001, 'Modeling the Demand for Loans to the Private Sector in the Euro Area', ECB Working Paper No. 55.
- Calza, Manrique and Sousa**, 2003, 'Aggregate Loans to the Euro Area Private Sector' ECB Working paper No. 2002.
- Cottarelli, Dell'Ariccia and Vladkova-Hollar**, 2003, 'Early birds, late risers and sleeping beauties: bank credit growth to the private sector in Central and Eastern Europe and the Balkans', IMF Working Paper No. 03/213.
- Demirgüç-Kunt and Detragiache**, 1997, 'The Determinants of Banking Crises: Evidence from Developing and Developed Countries', World Bank Working Paper No. 1828.
- Eichengreen and Arteta**, 2000, 'Banking crises in Emerging Markets: presumptions and evidence' Centre for International and Development Economics, Working Paper C00-115.
- Gourinchas, Valdes and Landerretche**, 2001, 'Lending Booms: Latin America and the World', NBER Working Paper No. 8249
- Helpman**, 1981, 'An Exploration in the Theory of Exchange-Rate Regimes', *The Journal of Political Economy*, Vol. 89, No. 5, pp. 865-890.
- Hilbers, Inci Otker-Robe, Pazarbasioglu and Johnsen**, 2005, 'Assessing and Managing Rapid Credit Growth and the Role of Supervisory and Prudential Policies', IMF Working Paper No. 05/151.
- Hofmann**, 2001, 'The determinants of private sector credit in industrialized countries: do property prices matter?' BIS Working Papers, No 108.
- Honohan**, 1999. 'How Interest Rates Changed under Financial Liberalization: A Cross-Country Review', Policy Research Working Paper Series 2313, The World Bank.
- IMF World Economic Outlook**, April 2004, 'Are credit booms in emerging markets a concern?'
- Issing**, 2003, 'Monetary and financial stability – is there a trade-off?', Conference on Monetary stability, financial stability and business cycle, BIS, 28-29 Mar.
- Kaminsky and Reinhart**, 1999, 'The Twin Crises: The Causes of Banking and Balance of Payments Problems' *American Economic Review*, Vol. 89 (June), pp. 473–500.
- Kiyotaki and Moore**, 1997, 'Credit Cycles', *The Journal of Political Economy*, Vol. 105, No.2 pp. 211-248.
- Lown and Morgan**, 2001, 'The Credit Cycle and the Business Cycle: New Findings Using the Survey of Senior Loan Officers', Federal Reserve Bank of New York Working Paper.
- Ottens and Lambregts**, 2005, 'Credit Booms in Emerging Market Economies: A Recipe for Banking Crises?', DNB Working Paper No. 46.

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Rajan, 1994, 'Why Bank Credit Policies Fluctuate: A Theory and Some Evidence', Quarterly Journal of Economics, Vol. CIX, pp. 399-441.

Schadler et al., 2004, 'Euro Adoption in Central and Eastern Europe Opportunities and Challenges', IMF.

Tornell and Westermann (2002) 'Boom-Bust Cycles in Middle Income Countries: Facts and Explanations', NBER Working Paper No. 9219.

Valderrama, 2005, 'Fiscal Sustainability and Contingent Liabilities from Recent Credit Expansions in South Korea and Thailand', FRBSF Economic Review.

Villanueva and Martins, 2003, 'The Impact of Interest-rate Subsidies on Long-term Household Debt: Evidence from a Large Program', UPF Working Paper No. 713.

3. 3. Developments in the structure of financial markets

Information on the operational efficiency and shifts in the structure of the financial markets significantly facilitates the assessment of the risks facing the system of financial intermediation. Market efficiency and liquidity greatly influences asset price volatility and hence the stability of the system of financial intermediation. This is why the MNB annually examines shifts in the financial markets (foreign exchange, money and debt securities markets) which are important in respect of stability.

Over the past year certain segments in each of the three markets have witnessed occurrences and phenomena that are significant in terms of financial stability. In the foreign exchange market, growth in turnover remained vigorous primarily in the already dominant FX swap market. This was partly attributable to the use of FX swaps as a vehicle for government securities transactions and speculative transactions on short-term interest rates. In the spot FX market, of the two patterns of behaviour that are significant in terms of stability, foreign participants seem to have pursued what is called the positive feedback strategy. Herding behaviour (i.e. establishing an excessively single direction position) was less common. The repo market, where transactions concluded by the Government Debt Management Agency were dominant, grew markedly within the money market. Simultaneously, the beneficial impacts of related infrastructure development on this market were reflected in the increased turnover in repo transactions between other market participants. As regards debt securities, the euroforint bond portfolio expanded spectacularly. These bonds are more likely to boost than drain demand in the domestic government securities market. A major

change in the HUF-denominated government securities market was the launch of an electronic trading system.

3. 3. 1. The foreign exchange market

As Hungary is a small open economy, transactions with foreign participants are dominant in the individual segments of the forint-foreign exchange market operating within the Hungarian banking system. Hungarian banks conclude the majority of their transactions with non-residents in the spot, option and FX swap segments, while their business partners are mainly resident non-bank participants in outright forward transactions. Owing to the possible significant impact of significant non-resident turnover and net demand on the exchange rate of the forint, from the perspective of market stability, it is important to identify the various patterns in the behaviour of non-resident participants. As non-resident participants use almost exclusively spot transactions (as stand-alone transactions or in combination with FX swaps) to cover their HUF exchange rate exposure, it is adequate to analyse the spot market from this aspect.

Foreign exchange market strategies adopted by resident non-credit institutions and non-residents

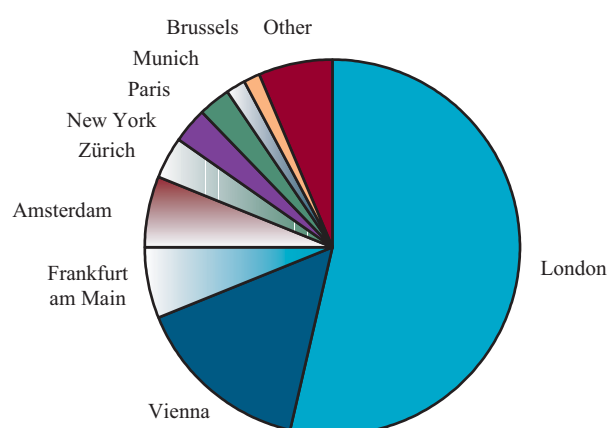
The share of non-bank participants in the spot forint/foreign currency transactions conducted by resident credit institutions with non-residents is rather low, amounting to 7 to 8 per cent. Professional banks account for 92 to 93 per cent of such transactions. As to geographical distribution, although internationally renowned investment

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houses in London⁶⁷ account for over 50 per cent of the transactions concluded with non-resident bank customers, trading partners in Vienna, Frankfurt and Amsterdam also represent a considerable volume of transactions (see Chart 3-2).

Chart 3-2

Spot forint/foreign currency transactions concluded by the Hungarian banking system with non-residents in a breakdown of non-residents' seat in 2003 and 2004



Source: MNB.

While examining non-resident participants' market behaviour, we focused on the presence of positive feedback trading and herding, both of which are important in terms of stability through their impact on the exchange rate.⁶⁸ The overwhelming presence of either may lead to adverse fluctuations in the exchange rate and instances of overshooting unjustified by fundamentals. Our findings are based on daily data for years 2003 and 2004 reveal that the average of the aggregate net positions of the 25 largest non-resident participants (accounting for 80 per cent of all transactions) were forint purchases if the exchange rate strengthened, and forint sales if it weakened on the day before. This in turn suggests that major

non-resident participants tend to be engaged in positive feedback trading in conducting foreign currency transactions with the Hungarian banking system. Within non-resident participants, institutions with a seat in an Anglo-Saxon country (in our sample it meant London and New York) show higher preference for positive feedback trading than do their counterparts in non-Anglo-Saxon countries.

Under normal market conditions, herding was uncommon among non-resident participants, which suggests that the distribution by sign of the daily net forint/foreign currency transactions conducted by the above 25 major participants was balanced. Data for the market participants surveyed did not point to a trend-like uniform shift in their net forint exposure vis-à-vis domestic banks. However, in turbulent times of sudden changes (a sharp rise or fall) in the FX market most non-resident participants were net sellers (or buyers), with at least 75 per cent of the participants surveyed acting as sellers (or buyers). This correlation does not, however, hold true for the other direction, i.e. shifts in non-residents' position in the same direction do not automatically translate into sudden changes in the exchange rate.

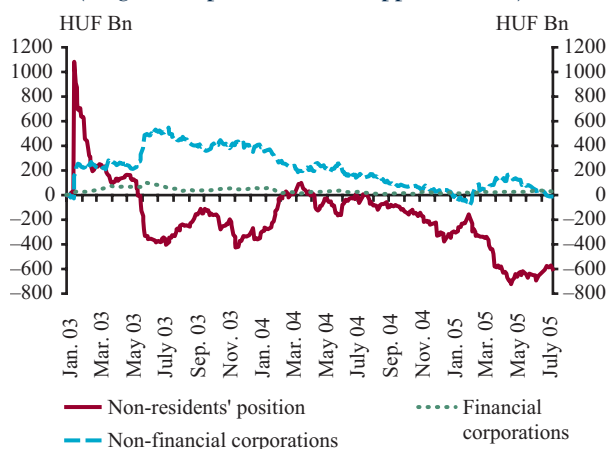
As Hungarian banks do not, as a rule, take an open FX position of a considerable size, they usually mediate the non-resident sector's net open position vis-à-vis them to non-bank participants. Significant shifts prompt residents to buy or sell forint typically through forward transactions. Non-residents' positive feedback trading, contributing to instability is at cross-purposes with the negative feedback trading of resident non-banks (and, as a rule, non-financial corporations). The latter type of behaviour means

⁶⁷ The term 'non-resident bank', classified as an independent category, means an independent 'branch' or 'trading desk', which may, organisationally, belong to the same global banking house, but the trading activity of which is mostly independent of such.

⁶⁸ Literature refers as 'positive feedback trading' to the market behaviour that market participants with a typical short time horizon and high leverage are assumed to adopt. Market participant adopting such behaviour buy, when trading prices increase and sell, when they fall. Herding means that market participants copy each other, i.e. they sell when the others do.

that the weakening of the exchange rate typically prompts residents to buy forints, i.e. it contributes to greater stability. This pattern was especially discernible during larger market turbulences in 2003 (see Chart 3-3). Resident non-banks typically comprise export- or import-oriented medium-size and large companies. Some are rather active, managing their exposure on a daily basis. The overall volume of transactions with financial corporations, which are mostly brokerage firms or customers represented by them, is significantly lower. Private persons' speculative positions vis-à-vis the banking system are included in these transactions.

Chart 3-3 Forint position taken by non-residents vis-à-vis the Hungarian banking system and changes in the exchange rate exposure of resident non-financial and financial corporations through forward transaction from January 2003 (long forint position in the upper domain)



Source: MNB.

Continuous rise in FX-swap market transactions

There was a significant rise in the volume of transactions in the forint/foreign currency FX-swap seg-

ment in 2004 H2 and 2005 H1, with daily average gross volume exceeding HUF 400-500 billion. Increase in the traded volume was experienced in transactions with maturity of 1 month or less; however, neither non-residents' share (exceeding 90 per cent) in the aggregate traded volume, nor the distribution of maturity dates changed significantly. The latter continues to point to the dominance of transactions with a maturity of less than one week (typically tom/next or overnight type⁶⁹ transactions) in respect of both the number and volume of transactions, with the share of these short-maturity transactions in the overall turnover exceeding 84 per cent.

Increased FX-swap market turnover is likely to have been the result of the various functions of the use of FX-swaps. Such functions are the best illustrated by the distribution of the tasks performed by a large treasury, where separate organisational units are responsible for taking exchange rate positions ('FX desk'), opening an interest rate position with maturity of less than one year ('Money Market Desk') and over one year ('bonds, FI desk') and liquidity management.⁷⁰ Of such units, two use FX-swaps: liquidity management typically use short-maturity (less than one month, but mostly overnight or tom-next) FX-swaps⁷¹ in order to manage cross-currency liquidity, while the Money Market Desk take interest rate positions with a maturity of less than one year in currency pairs by conducting FX swap transactions with maturity ranging typically from 1 month to 1 year (see Chart 3-4).

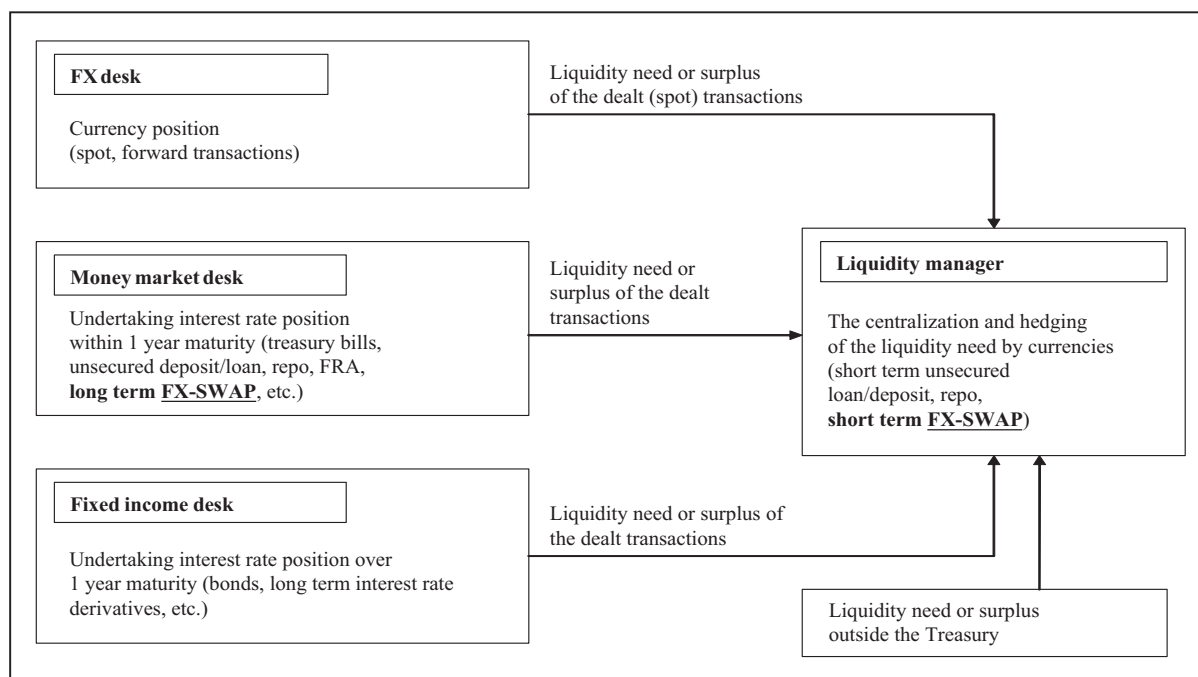
⁶⁹ Based on the transaction turnover, the ratio between the two types is 3/4 (tom/next transactions) to 1/4 (overnight transactions).

⁷⁰ These are divisions common in large treasuries. There may often be further units (e.g. 'equity desk'), or the same person or unit may be responsible for several of the above functions at institutions with smaller trading divisions. This having been said, both functions and responsibilities tend to be handled separately in all cases lest the positions taken by two own dealers interfere in the market (thereby doubling transaction costs) rather than within the same institution.

⁷¹ Naturally, in addition to other instruments such as interbank depo and repo transactions. The liquidity manager is responsible for centrally meeting the financing requirements of the transactions concluded by the desks and the liquidity requirements of other business divisions of the bank (e.g. customer payment transfers).

Chart 3-4

A brief outline of the relationship between the functions of professional treasuries and liquidity management



Source: MNB.

There are several reasons why longer-maturity swaps are used for money market purposes in the forint market. One is that the market of discount treasury bills and government securities with maturity of less than 1 year is not liquid enough for positions to be opened, and hedged FX swaps enjoy priority over unsecured interbank deposit transactions. In addition to FX swaps, forward rate agreements (FRAs) are a major alternative for intra-year yield speculation; however, their volume in the domestic market remains below that of FX swaps with over 1 month.

Based on an analysis of FX swap contracts by net maturity between the resident and non-resident sector, it is safe to say that FX swaps are also used in the above function in the domestic money market. Therefore, interbank money market trading mostly occurs in this segment. Although counterparties tend to use swaps with maturity of 1 month to take such interest rate positions, turnover is evenly spread over a time horizon ranging from 1

month to 1 year. A good example of interest rate speculation of this type is that during the 2003 FX market turbulences, in addition to spot forint sales, non-residents took profitable interest rate positions by means of overnight or tom-next FX-swaps in the case of an intra-year shift in the yield curve. Based on maturity distribution, rising gross turnover in the FX swap market at end-2004 and early 2005 was attributable to short-dated and 1-month maturity transactions, which suggests that the money market dealers' more intense speculation in the FX swap market outlined above is also one of the causes. In addition to short-term interest rate speculation, a pick-up in turnover may also be attributable to government securities transactions (in the case of government securities purchases through FX swaps), as government securities trading also rose in 2004 Q4 and stabilised at a higher-than-earlier level (close to HUF 100 billion). This was further boosted by the fact that non-residents, dominant in the FX swap market, increased their

share in the government securities portfolio (simultaneously, their share in the secondary market also rose), then reduced it rapidly in early 2005. These swap transactions, linked up with change in position, contributed significantly to the volume of trading in the swap market.

Judging by the implied HUF yields of FX swap transactions concluded in the Hungarian market, it is safe to say that the implied HUF yields of the transactions, concluded on a given day, (weighted by the value of the transaction) are closely related to yields in other segments in the money market. Thus, in the case of overnight transactions, they are practically the same as the average yields of unsecured interbank transactions, and correspond to yields on discount treasury bills with identical maturity. Examining yields in a breakdown by the direction of transactions, we find that in the case of transactions with a maturity of less than 1 month, i.e. transactions used for liquidity management, returns on loans taken out by non-residents from Hungarian banks in the swap market are consistently higher than those on HUF deposits.⁷² This suggests that in the case of transactions with a maturity of shorter than 1 month, an important tool for liquidity management, Hungarian banks are typically market makers, while non-residents are market users. In the case of maturities of over 1 month, the picture is less unambiguous, as the sign of differential varies, suggesting that non-residents, too, are market makers on such maturities.⁷³

Analysing the absolute level of the bid-ask spread, we find that the average spread in the case of tom-next maturity, representing the high-

est turnover, is the lowest, standing at approximately 10 basis points. As for other maturities, the average daily spread is approximately 20 to 50 basis points.

3. 3. 2. Money market

The most important role of the interbank money market is the efficient allocation of the liquidity of the entire banking system. From this aspect, unsecured money market and repo transactions with the appropriate maturity can substitute for each other, therefore developments in their overall turnover is crucial. As regards the stability of the system of financial intermediation, the spread of secured transactions alone, and hence the development of the repo market, is beneficial. The reason for this is that collateralised claims represent higher security for market participants, i.e. banks' limits vis-à-vis each other may be higher than that in the unsecured market. In consequence, major liquidity shocks can, in principle, be tackled more efficiently in this market.

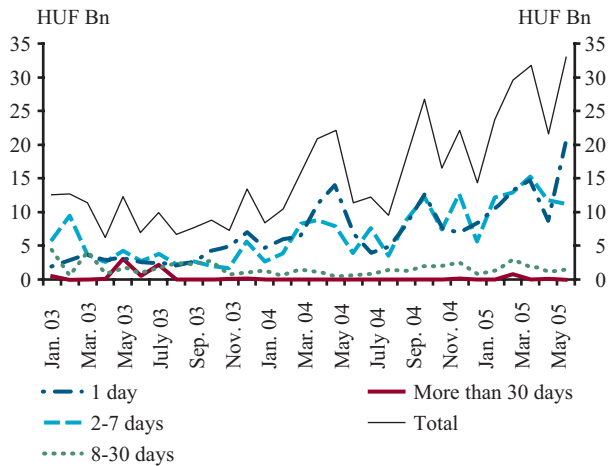
When we studied the developments in the repo market turnover in the December 2004 issue of the Report, we concluded that the repo transactions introduced by the Government Debt Management Agency (GDMA) in order to smooth the Treasury Account portfolio increased the turnover of the entire repo market significantly. Nevertheless, absolute turnover was still a mere fraction of that in the unsecured market. Furthermore, transactions by the GDMA may crowd out interbank transactions. There have been material changes over the last year.

⁷² Hungarian banks offer smaller return on non-residents' forint deposits than they receive on HUF loans granted to non-residents.

⁷³ This yield spread was estimated on the basis of the differential between the averages of the individual transactions concluded on a given day. If there is significant change in intraday yields, estimates are biased.

Chart 3-5

Monthly developments in the daily trading turnover in the repo market (in a breakdown by maturity)



Source: MNB.

The volume of repo market turnover has been rising sharply since 2004. Average daily turnover exceeded HUF 25 billion in 2005 H1, representing a 73 per cent increase over one year, and a 2.5-fold increase over two years. Data suggest that the repo market has developed more rapidly than the unsecured interbank market, where average daily turnover has contracted slightly over the past one year. Although repo market turnover now accounts for almost 25 per cent of the unsecured market, the latter market is still dominant in the money market segment (see Chart 3-5).

Similarly to the rise in 2004, increased turnover in the past one year is attributable to the repo transactions of the GDMA. This is underpinned by the fact that only those short-dated repo transactions have grown in volume in which the GDMA has been actively trading (i.e. overnight transactions and those with maturity of 1 week). The turnover of longer-dated repo transactions has not increased since early 2004; compared to 2003 data it has even diminished. The GDMA has continued to conclude delivery repo transactions with its partners over the past year, which is also reflected in

the turnover of the entire repo market. Compared to 2004 H1, the daily turnover of delivery repo transactions has increased by 93 per cent, while that of hold-in-custody repos has fallen considerably behind, amounting to 36 per cent.

A significant change is that, excluding transactions concluded with the GDMA and in contrast to earlier trends, the daily average turnover of the repo transactions that market participants concluded with each other did not continue to fall in 2004 H2. In 2005 H1, it even rose. Although this rise was modest (the turnover of the transactions that market participants concluded with each other reached the level at which it stood in 2003) and the proportion of the transactions concluded with GDMA continued to increase within the overall repo turnover, this may be the first sign that the trading by the GDMA in the repo market and the establishment of a repo master agreement may promote the development of the interbank repo market over the long term. This is further substantiated by the fact that the average daily turnover of the entire money market has remained practically the same over the past 18 months, with a steady shift in the overall turnover towards repo transactions. As a result, the share of these transactions has risen from 12 per cent to 23 per cent. A further favourable development is that the number of the active counterparties of the GDMA has continued to grow over the past year, and its potential repo counterparties also increased. These changes may reduce the concentration of the repo market and lead to an increase in competition. Overall, the past year has witnessed some favourable developments in the Hungarian repo market. However, the question of whether the GDMA will be able to contribute to the dynamic development of the interbank market will take a couple more years to answer definitively.

3. 3. 3. Debt securities market

There have been changes in two segments of the debt securities market that bear relevance to financial stability. One is the launch of an electronic trading system, which may increase market transparency, the other is that there has been a take-off in the market of euroforint bonds over the past years, the impact of which on domestic markets is no longer negligible.

Launch of electronic trading in the domestic government securities market

A major change since the publication of the December 2004 issue of the Report was the launch of an electronic system (Bloomberg Bondtrader, BBT) in the government securities market in February 2005. In addition to Hungarian primary traders, a few non-resident government securities market participants are also active market makers in this system. The most important impact of the change is that it increases market transparency and may reduce information asymmetry. Market participants have continuous access to information on trading prices, which diminishes the risk of mispricing.

Nevertheless, the system, at the current stage of its operation, handles only a limited volume of turnover. In the estimate of market participants, it is only a mere fraction (less than HUF 1 billion daily) of the overall government securities turnover (approximately HUF 100 billion daily). Although trading turnover increased by over 10 per cent in 2005 H1, compared to the preceding 6 months, this increase started already at end-2004, so the new trading system has not supported the increased turnover unambiguously. One of the reasons for this is that market makers may select the participants with whom they are willing to con-

clude transactions at their quoted prices and upon the launch of the system major government securities market participants (and hence primary traders) did not offer this opportunity to each other, as they mainly intend to serve their end-investors via this channel.

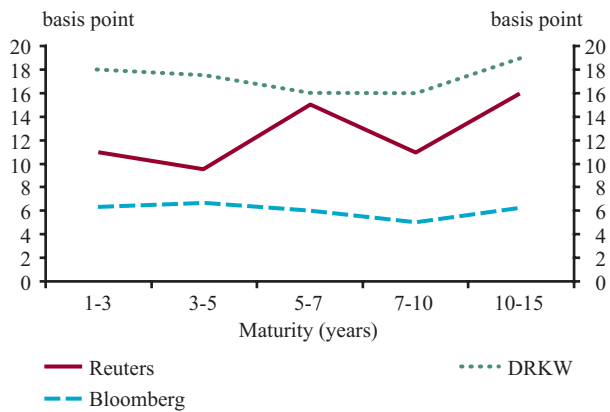
The new system is a multi-dealer (or dealer-to-customer) system, the essence of which is that bids can be requested on the basis of the prices quoted by market makers, thus counterparties must contact them directly (this is where the operation of the system becomes bilateral). By contrast, interdealer trading systems (such as MTS operated in the Polish government securities market) operate, in essence, as an order book: all participants submit their bid/ask prices, then the system forms transaction pairs (similarly to limit order trading). This is why the latter can intermediate large volume transactions better. Counterparties do not have to reveal their position in advance. Nevertheless, in order to manage counterparty risk, the operator of the anonymous system needs the lists of counterparty limits of the participants logging in, as only continuous maintenance of such lists can prevent limit breach.

The new system also provides the central bank with extra information that allows for the possibility of a more accurate estimate of the liquidity of the government securities market. Quoted yields here have very narrow bid/ask spread (only 5 to 8 basis points), which is substantially lower than the 50 basis points, which is primary dealers' obligatory maximum spread. Real time trading systems increase liquidity and transparency, which is reflected by the fact that in the case of Reuters (HUBEST) data, which contain only not firm (indicative) quoted prices, yield spreads are higher (10 to 16 basis points) than this. Based on a third source of data, i.e. CEBI (Central European Bond Index), introduced by Dresdner Kleinwort Wasserstein,

bid/ask spread in terms of yields is approximately 16 to 18 basis points. Although in the new trading system narrower spreads are also supported by the lower volume of transactions (items of approximately HUF 500 million), continuous firm quotations guarantee that the prices quoted in the system reflect fair market value (see Chart 3-6).

Chart 3-6

Bid/ask spreads in the government securities market based on the available sources of data, in a breakdown by maturity and in terms of yields (July 2005)



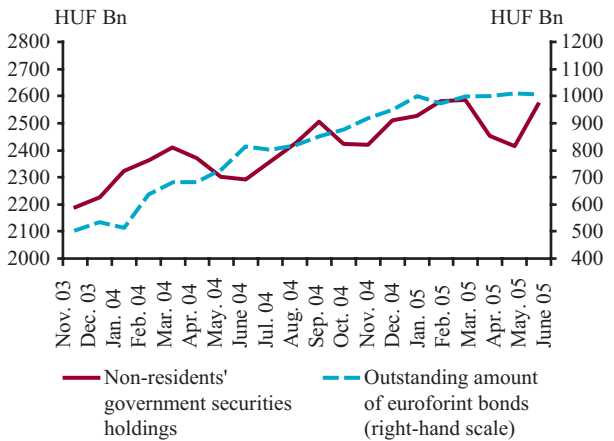
Note: The DRKW CEBI yield spread is an estimate based on original data calculated from trading prices.
Source: DRKW, Reuters and Bloomberg.

Dynamic growth in the market of euroforint bonds

The reason why the analysis of the euroforint bond⁷⁴ market is topical in terms of stability is that, due to a rapid rise over the past years, the outstanding amount of the euroforint bonds – which are typically held by non-resident institutional investors – is no longer insignificant (see Chart 3-7). The outstanding amount, the worth of which exceeds HUF 1,000 billion, now accounts for one-sixth of the fixed-coupon forint-denominated government debt securities prioritised by non-residents. This is why it is important to see how issuances affect the domestic bond market and, within this, the government securities and the FX market.

Chart 3-7

End-of-month portfolio of government securities and Eurobonds held by non-residents



Source: Reuters, Euroclear and MNB.

Mainly due to the limited number of settlement arrangements between the domestic and foreign banking system, the first issuance of euroforint bonds occurred after the FX liberalisation of 2001, with a time lag of several years, compared to other currencies in the region. (By contrast, first issuances occurred in 1995 and 1996 in Poland, the Czech Republic and Slovakia.) First gradually, then, owing to the growth in 2004, more dynamically, the portfolio of forint-denominated Eurobonds approximated to that of the Eurobonds denominated in the other currencies in the region (in 2004 the GDP-proportionate stock was 4.5 per cent; it only approximated to 7 per cent in the Czech Republic). The expansion of the euroforint market came to a halt again in early 2005, falling behind the other Eurobond markets in the region, which continued growing. Growth in the portfolio in 2004 was in line with investors' rising global risk appetite. The schism that materialised in the euroforint market in early 2005 may have to do with a phenomenon also experienced in the domestic government securities market, namely that while

⁷⁴ Euroforint bonds are forint-denominated foreign bond issuances by resident or non-resident debtors, who effect settlements in forint.

the portfolio of government securities held by non-residents has been expanding in the other Visegrád countries, no rise has been experienced in the Hungarian market since early 2005. This may be the combined effect of a benign international environment, falling forint yields and the lack of material reduction of domestic fundamental risks.

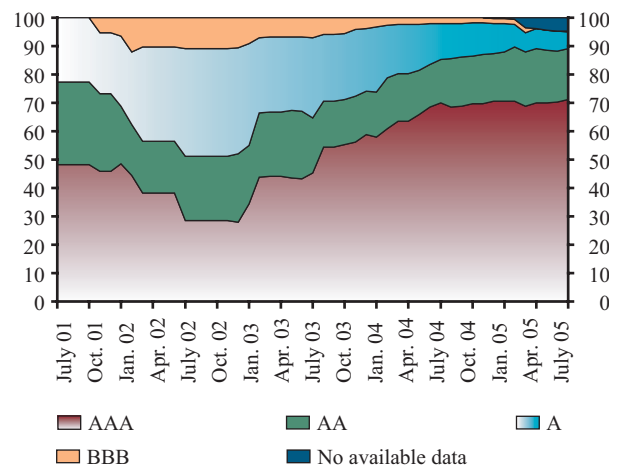
The market of euroforint bonds is less liquid than that of government securities. The main reason for this is relatively small-tranche issuances. Issuers in the market of euroforint bonds prefer fixed-coupon bonds with shorter maturities. This may have to do with the fact that investors in this market buy securities for holding; therefore, they are rather reluctant to buy long-term fixed-coupon securities, due to the implied high risks and the illiquid secondary market. Euroforint securities, the rating of which is better than that of forint government securities, are likely to attract institutional investors the credit risk exposure of which is governed by strict internal or external regulations. As securities with the best ratings (AAA) are not available in the domestic market, in a demand-driven market investors are willing to buy euroforint bonds with a good rating even if yields are even lower.

Issuers are prompted to issue euroforint securities by their need for fund raising at lower costs and/or their borrowing requirement in forint. Issuers include international organisations, companies/credit institutions and sovereigns or special-purpose issuers. The first two, which issued two-thirds of the current outstanding amount, are mostly driven by their forint borrowing requirement, whereas the third one is urged by lower financing costs (transforming their forint funds into own-currency issuances through FX swap transactions). Based on the motivation of issuers and investors, it is safe to assume that euroforint bonds complement rather than replace government securities.

This is substantiated by the fact that the amount of government securities held by non-resident investors and that of Eurobonds moved in the same direction. Funds raised on euroforint bond issuances land in forint assets, including, in part, government securities, through several intermediators. Furthermore, investors often strive to diversify their portfolios, therefore by creating a market of forint-denominated debt securities with a wider credit rating and sectoral selection a growing euroforint market may additionally increase demand for forint-denominated government securities. In the market of corporate and credit institutional euroforint bonds, however, parent companies replace domestic issuers, thereby preventing the strengthening of the domestic corporate bond market.

Chart 3-8

Current portfolio of euroforint bonds in a breakdown by ratings



Source: Reuters, Bloomberg and Euroclear.

Taking into consideration the financing decisions of the participants investing in euroforint securities and the placement decisions of the issuers, we can assess how issuances affect the domestic FX market. In accordance with what has been pointed out in connection with the impact of the government securities market, it is unlikely that investors should raise funds by selling other forint-

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denominated instruments (e.g. government securities). As investors intend to hold securities, it is safe to assume that they purchase the necessary forint funds on the FX spot market, taking exchange rate exposure.

Most issuers are assumed to use the funds acquired to lend in forint (without taking any exchange rate risk). Other issuers strive for lower financing costs in their own currency without taking any exchange rate risk as well. The latter resell forint through FX swaps, which finally translate into open forint positions for some non-resident

investor (transformed finally into FX spot transactions, the purchase of forint-denominated government securities or forint lending). As a result, euroforint issuances are reflected in forint demand, and land in some forint-denominated instrument.

This is indeed why neither in analysing the risks of turbulent times nor in assessing the degree that non-resident investors' withdrawal of forint-denominated instruments weakens the exchange rate of the forint is it necessary to add to the quantity of domestic forint-denominated instruments the outstanding amount of euroforint bonds.

3. 4. The operation of private pension funds in Hungary⁷⁵

Efficient operation and consistent long-term trust in private pension funds, representing one of the key segments of financial intermediation, is crucial to the stability of the domestic financial system. Their operation exerts a long-term impact on the reputation of the sponsor groups which are major participants of the domestic banking and insurance market. What increases the importance of a study on the sector from the perspective of stability is that, as membership in private pension funds is mandatory, members are, for the most part, vulnerable to potential adverse influences. In addition to the potential harm done to their interests, this may, through risks to pensioners' living standards, also adversely affect the financial standing of households and the long-term operation of the system currently in place. The level of members' financial culture greatly influences why they choose a certain fund. Enhancing the level of financial culture is one of the MNB's top priorities. This paper examines the efficiency of the current institutional structure, accepting the framework of the current three-pillar⁷⁶ pension system as a given.

3. 4. 1. International experience

Pension funds providing services similar to those provided by their Hungarian counterparts operate in Latin America and Eastern Europe. Companies responsible for the management of funds are, as a rule, allowed to operate as corporations after they have obtained the relevant supervisory authority li-

cence. Fund management companies are typically affiliated to banking or insurance groups. As regards the second pillar, no examples of the Hungarian system of self-governance have been found in other countries. The traditional three-pillar system was established in only three countries in Latin America. In the remaining countries either an exclusively private system with low participation of the state is in place, with no first pillar (the private system) or employees can choose from between the public and the private system (the parallel system). Because of the differences in the services provided, incomes, labour market structure and the level of economic development, income and cost indicators in Latin America cannot serve as a basis for comparison.

Pension scheme reforms began in Eastern Europe mostly after those in Hungary in 1998. The launch of the pension funds in Poland almost coincided with that of their Hungarian counterparts (1999). The reform in Poland resulted in a three-pillar pension fund scheme, with the second pillar exhibiting similar parameters to the Hungarian ones. In consequence, Polish fund managers' income, cost and profitability indicators can be used as reference when the operation of Hungarian funds is analysed. As well as similarities, there are significant differences in the second pillar in Poland. Polish pension funds are managed, on a business basis, by fund managers in the ownership of banks and insurance companies. Fund managers are responsible for asset management and the provision of administrative services. By contrast, pen-

⁷⁵ The findings of the analysis are based on a study by the MNB providing a detailed overview of the sector, to be published at the end of 2005.

⁷⁶ The first pillar is the pension disbursed by the social security system, the second is that portion of the pension that is based on social security contributions paid by members as a proportion of their wages and disbursed by private pension funds and the third pillar is the supplementary pension that is based on membership fees or insurance premia paid by insured persons or their employees.

sion funds in Hungary operate on a non-profit basis. Under the Hungarian system, asset management for funds with a sponsor group is performed typically by the fund manager of the sponsor group, while administration is the responsibility of a separate company also owned by the sponsor group. The investment costs of the launch of the pension funds in Poland were high, as expenses (over 50 per cent) on marketing and agent activity were significant in the first years. Upfront investment takes a longer period to break even, which is also subject to Polish statutory regulations. Polish legislation put a cap on fees constituting the source of revenues. Such fees⁷⁷ decrease in proportion to the assets managed. Deductions financing operational costs and charged to membership fees are also fixed. In Poland fund managers' risk appetite is higher than that of the boards of directors of the Hungarian funds. The proportion of shares in the investment portfolio of Polish funds was 34 per cent at end-2004.

International experience offers an revealing insight into the structure of the market of pension funds. Based on Polish and Latin American experience, the market of pension fund managers is highly concentrated, with the five largest accounting for an aggregate market share of 70–80 per cent. Competition for members occurs mainly through agents' acquisition activity. The number of voluntary switching is low. Overall, these characteristics suggest an oligopolistic market, where high concentration and low consumer awareness may reduce competitiveness.

The composition of pension fund portfolios and the causes of similar portfolios are key issues. In most developing countries the proportion of government securities is high, therefore investments representing higher risks are not offered as an option.

Experience confirms that the composition of portfolios largely depends on the level of development of the local securities market. Regulatory incentives, such as the time horizon of investment return measurement, also play an important role. Long-term investment return measurement may extend fund managers' investment horizon. Minimum expected returns, which depends heavily on competitors' performance (relative measurement of performance), prompts the establishment of similar portfolios.

3. 4. 2. Performance of private pension funds in Hungary

Size of the private pension fund market

Despite an ongoing increase in both membership and assets, the number of market participants has dropped over the past years, with the number of funds decreasing from the original 38 to 18 by end-2005 H1, due mainly to acquisitions and mergers. These acquisitions and mergers led to a steady increase in the market share of funds with banks and insurance companies as their sponsor groups. The underlying reason for this was the widespread recognition of these sponsor groups and the marketing and distribution channels that they used to increase the membership of their respective pension funds. As members of the funds established by employers mainly include the employees of the funding employer, no material increase in their membership has been witnessed over the past years. The total number of members of private pension funds was 2.4 million in 2004. In addressing the issue of the sector's efficiency, we focus on 10 funds with banks or insurance companies as their sponsor groups that had a 92 per cent and a 91 per cent market share

⁷⁷ Imposing limitations on fees is an adopted practice in several countries (e.g. the UK, Sweden, Bulgaria and Croatia).

with respect to membership and accumulated assets, respectively, at end-2004. Therefore, our findings bear relevance primarily to these funds.

Organisational and management issues

Pursuant to regulatory intentions, pension funds are special self-governed non-profit institutions, where self-provisioning materialises through the active involvement of members. The main decision-making body of pension funds is the general meeting, where members can exercise their decision-making rights directly or through representatives. The management of the fund is the responsibility of the board of directors, which must ensure that members of the fund are also represented. The managing director is responsible for the execution of board decisions and the successful operation of the fund. A supervisory board on which members of the fund must form a majority operates alongside the board of directors. The supervisory board is responsible for the continuous supervision of the fund's business management.

As regards the persons on governing bodies (boards of directors and the supervisory board), members employed by the sponsor group form a majority on the boards of directors and the sponsor group has strong representation on supervisory boards as well. Based on published data, the top management of sponsor groups is also represented on boards of directors. Based on this, sponsor groups are likely to wield significant influence over the managing bodies of pension funds. Practice reveals that pension fund members do not attend general meetings in person. Rather, area or employer representatives with voting rights, elected for five years by the representative electorate meeting, act on their behalf. Participation rate is low, which points to members'

inactivity. Pursuant to the Act on Private Pension Funds, the procedural rules for electing delegates are defined in the organisational and procedural rules of funds, which, however, do not always provide guidelines on the number of the votes needed for the election of one delegate. Although the rules surveyed do stipulate that, by default, over 50 per cent of the members should be in attendance, either in person or through authorised representatives, a repeat general meeting, convened if the previous meeting fails to have a quorum, is quorate, irrespective of the number of attendees. Thus, even a fraction of the members can elect delegates.

Membership interests are further curbed by the fact that, according to the minutes kept at the general meetings, even representation by delegates is flawed. Over the past three years, on average, delegates in attendance at general meetings have represented hardly over two-thirds of private fund members. Although this ensures that the general meeting has a quorum, but in that way there is no sector-level representation for the majority of the members. 99 per cent of the general meeting resolutions have been passed unanimously with no dissenting opinions voiced over the past 5 years. An overview of the actual practice of the direction of pension funds reveals that membership interest advocacy is inadequate.

Fees and charges

Specified by the individual pension funds, a certain part of the identified monthly membership fees is not credited to the members' own account, as such part increases the respective funds' operating and liquidity provisions. The fees and charges deducted from pension fund members' savings fundamentally depend on the ones charged to cover operating costs and fund management.

Table 3-2

Changes in average fees and charges as a per cent of the average assets managed⁷⁸

	2000	2001	2002	2003	2004
Fees paid to asset managers					
Private pension funds	1.07	1.04	0.99	0.97	0.96
- annual minimum	0.65	0.54	0.59	0.59	0.55
- annual maximum	1.95	1.92	2.00	1.57	1.43
Voluntary pension funds	0.58	0.67	0.78	0.70	0.73
Pension funds - Poland	0.56	0.57	0.60	0.60	0.53
Charges from payment of contributions					
Private pension funds	3.71	2.85	2.34	2.38	2.11
Voluntary pension funds	1.06	0.92	0.86	0.74	0.62
Pension funds - Poland	11.31	5.02	2.49	1.73	1.30
Total					
Private pension funds	4.77	3.89	3.32	3.35	3.07
Voluntary pension funds	1.64	1.59	1.64	1.44	1.36
Pension funds - Poland	11.87	5.59	3.09	2.33	1.83

Source: KNUIFE (Poland), HFSA.

There has been a slow sector level decline in traditional deductions from membership fees over the past years.

During the period immediately following the establishment of the pension funds, in order that an institutional and infrastructure background could be provided, significant deductions were made for operational purposes. However, the amount of such deductions was reduced once the operating conditions of the funds had been created. Translating into an over 30 per cent rise in income

from membership fees, an increase from 6 per cent to 8 per cent in membership fees over the past two years has failed to lead to a material decrease in deductions from membership fees despite the fact that operational costs grew to a lesser extent.

Within fees and charges, in proportion to growth in fund savings, the proportion of fund management fees has been increasing steadily and its extent is expected to become dominant within fees and charges over the long term.

⁷⁸ What renders the comparison of the private and voluntary funds difficult is that the majority of the voluntary funds were established, typically by employers and through significant contribution from sponsor organisations, four years earlier than their private counterparts. This also provides an explanation for lower fees in the case of voluntary funds.

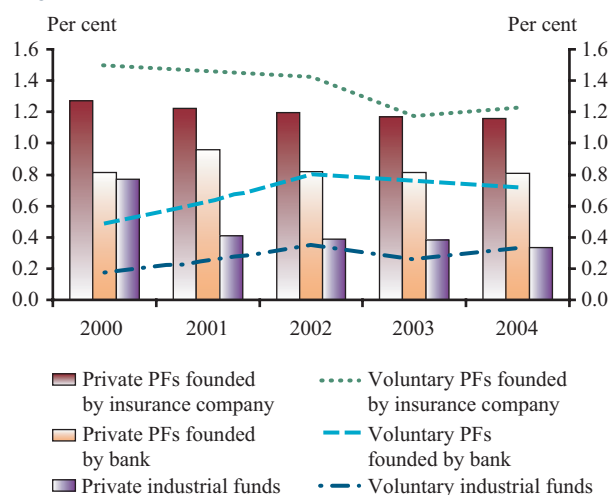
Table 3-3**Deductions as a per cent of membership fees**

	2000	2001	2002	2003	2004
Private pension funds	5.74	6.39	6.71	6.71	6.46
Voluntary pension funds	4.37	4.05	4.03	3.80	3.50
Pension funds - Poland	9.00*	8.35	6.54	6.23	6.22

Note: Based on estimation.

Source: KNUIFE (Poland), HFSA.

The asset management fees charged by most asset managers in Hungary exceed those charged by both Polish and Hungarian voluntary funds significantly. Asset management at pension funds with sponsor banks or insurance companies was the responsibility of an organisation controlled by such sponsor institutions between 2000 and 2004. Only one pension fund terminated the services of such an organisation. In this case, the business relationship between the fund and the asset manager was also terminated.

Chart 3-9**Asset management fees in a breakdown by sponsor organisations**

Source: HFSA.

In the case of private funds with sponsor banks or insurance companies, the size of fees primarily depends on profitability considerations. Sponsor

financial groups expect their significant capital investment needed for the operation of funds to break even as soon as reasonably possible. They also expect profitable operation on the group level. These expectations influence the size of fees when deductions from membership fees and asset management fees are set. As the objective of sponsor financial groups is to reach a breakeven point as soon as reasonably possible, we do not think that there is competition proper among private funds in Hungary in terms of asset management. In order for initial capital investment to break even, sponsor companies had a stake in the conclusion of a long-term contract by and between the asset manager controlled by the group and the fund. Earliest possible group-level profitability can be achieved if administrative fees, accounting for a dominant part of operational income, and asset management fees, increasing almost in conjunction with the rise in the volume of the assets managed, are retained within the relevant financial group. In 2004, an average of 60 per cent of all deductions from membership fees were earned by sponsor financial groups in the form of asset management and administrative fees.

In the case of pension funds funded by employers, asset management fees are much lower. The reason for this is that upfront costs are likely to have been much lower as well. Thus, the fees charged by asset managers selected through tender procedures only included asset management fees.

Cost structure and profitability

Group-level costs and hence profitability are difficult to assess in the case of pension funds with sponsor groups. The reason for this is that, in a number of cases, the bulk of administrative, marketing and acquisition costs are incurred by subsidiaries of sponsor groups typically engaged in fund services provision rather than by funds themselves.

Consistent with the non-profit nature of funds, profit is not recorded in their profit and loss accounts. A main source of income for fund service providers, administration fees represent a sizeable item. The reason why asset management fees are not recorded in the operational profit and loss accounts is that, pursuant to the currently effective regulations, they are charged directly to the wealth of pension funds. Profit is included in the latter fees, which is recorded by fund service providers and fund managers – in a much less transparent way. Information available on the business management of fund service providers is

based financial statements prepared in accordance with general accounting principles. Therefore, the cost structure in these statements is different from that employed by pension funds. The profit and loss accounts of asset management companies give no indication to actual costs and profitability of pension fund asset management, as those are mixed with the expenses and profitability of other activities.

As a result, only an estimate can be provided for group level costs and profitability. According to such estimates, the operation of funds became profitable in 2001 and 2002, and profitability was high already in 2003 and 2004.

Developments in pension fund portfolios

Private pension funds do not invest in higher risk and hence higher-yield assets. 70 per cent of all fund savings is invested into government securities, the share of which further rose in 2004⁷⁹.

There are several reasons underlying the fact that government securities are dominant in the portfo-

Table 3-4

Allocation of private fund investments

%	Private pension funds			Voluntary pension funds		
	2002	2003	2004	2002	2003	2004
Government securities	69.6	71.6	77.9	68.7	70.2	76.5
Other securities (investment funds, mortgage bonds, corporate bonds)	19.3	19.1	15.1	17.5	19.1	14.0
Domestic shares	9.0	7.2	3.1	8.1	7.1	5.2
Other (cash and current accounts, time deposits, foreign assets)	2.1	2.1	3.9	5.7	3.7	4.3
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: HFSA.

⁷⁹ The value of pension scheme savings accumulated by Hungarian private pension funds was HUF 804 billion at end-2004, which accounted for 4 per cent of GDP.

lio and that, compared to Polish funds, the proportion of shares is low.

Sharp fluctuations in the performance of Hungarian and international stock exchanges between 1998 and 2001 was the dominant cause of the current low proportion of shares, as, in response, funds reduced the proportion of shares in their respective portfolios. Low stock exchange indexes in 2001 H2 led to general reduction in the proportion of shares, and no material change has occurred since. As a consequence, yields have been influenced primarily by trends in the government securities market, where risk-free yields increased significantly temporarily.

The current practice of short-term yield measurement encourages risk avoidance and contravenes any significant departure from the composition of the portfolio of competitors. Decisions on asset allocation by boards of directors are likely to be influenced by the fact that income on asset management constitutes part of group-level return. This may increase risk avoidance and cautiousness, as a strategy aimed at high-risk investments may endanger the position of the asset manager.

Pension funds' investment policy specifies the minimum and maximum proportion of investments into asset classes representing various levels of risks. Based on this, it is safe to say that most funds set a minimum proportion of 60 per cent–70 per cent in the case of investments into government securities, with no material shift in it over the past years. Typically, however, no ceiling has been set for the proportion of investments into government securities. The minimum and maximum proportion of investments into shares is 0 per cent–10 per cent and 15 per cent–40 per cent, respectively, which would, in principle, allow for the possibility of a higher proportion of shares.

Fund yields

Annual yields have fluctuated sharply since the establishment of private pension funds in Hungary. Based on seven full years of their operation (1998-2004), their average annual asset weighted net real return per member was 2.8 per cent, which is primarily attributable to outstanding yield trends in 2004. If both asset management fees and operating expenses are taken into consideration in calculating average net real returns, the seven-year average weighted real return per member on investments by the private fund sector amounted to 0.2 per cent. By comparison, sector-level weighted net real return on investments by voluntary funds was 1.8 per cent in the corresponding period. With deductions for operating purposes taken into account, it amounted to 1.2 per cent.

Chart 3-10 Developments in real returns earned by pension funds excluding deductions charged to membership fees

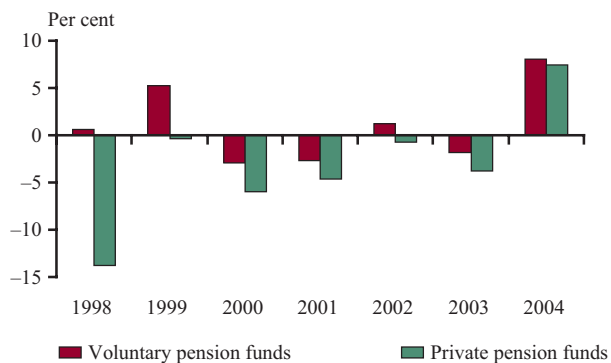


Source: HFSA.

Pension funds' investment performance has been subject primarily to trends in government securities yields over the past years, since the proportion of shares has been unable to offset market influences affecting government securities yields despite a benign stock exchange climate.

Chart 3-11

Developments in real returns earned by pension funds adjusted for deductions charged to membership fees



Source: HFSA.

Regulatory issues

In our opinion, based on what can be inferred from the operation of private pension funds, regulatory issues have arisen in three areas.

One is conservative investment behaviour as the most important challenge facing their operation. 80 per cent of the portfolio of the Hungarian funds finances the Hungarian budget, with the proportion of shares consistently below 10 per cent. Given such a high proportion of government securities, it is rather doubtful whether the objective of the 1997 reform can be attained. The reason for this is that anticipated long-term real returns are unlikely to be able to provide the cost-adjusted profit that could ensure the level of pensions that the reforms set as their objective. The current composition of the portfolio is all the more contentious as, in practice, it fundamentally amounts to government securities-based financing with a costly system of institutions in place. The anticipated long-term return earned by the portfolio is a key issue, as it greatly affects the value of the savings in the second pillar.

Capital market developments over the past seven years provide a partial explanation for developments in the composition of the portfolio.

However, over the medium term, the current high proportion of government securities is expected to shrink. The pace of such reduction is still to be seen, though. This is indeed why the regulatory issue of how long-term investment horizon can be promoted should be addressed. Direct interference with portfolio composition implies dangers and is, therefore, undesirable. Such interference would further suggest that the regulatory authority can envisage the composition of an ideal portfolio. Therefore, regulatory policies can influence asset managers' incentive system only indirectly.

Under the current Hungarian regulations, the return in the year under review and the return over the preceding four years must be disclosed by way of the measurement of performance. Under the current regulation, results are discernible over the longer term. However, comparing five successive years' annual return is not easy for the average customer to understand. The measurement of fund performance over a longer time horizon could mean a simpler and more easily interpretable solution. Polish regulators stipulate that fund managers disclose three-year cumulated returns twice each year. The disclosure of performance based on cumulated (3- or 5-year) returns could be a consideration for Hungarian regulators. The reason for this is that differences between expected returns in the individual asset classes are more marked over a longer time horizon. Gradual increase in the length of time horizon can be pre-scheduled, which could mean a further incentive. If fund members were allowed to choose from among the portfolios representing various degrees of risk, this could affect the composition of the portfolio over the longer term. Such freedom would accommodate personal risk-taking preferences. This solution is not unknown for Hungarian financial regulation, as voluntary pension funds

offer several types of portfolios to choose from for their members. For such members that do not wish to make their own choice, a possible regulatory solution is the establishment of a portfolio that matches their respective careers, one that would decide on asset allocation in accordance with age.⁸⁰ Conditions for this solution is higher consumer awareness and more solid financial knowledge on fund members' part. The possibility of free choice would be able to trigger relatively rapid changes in the asset classes of the investment portfolios of private funds, which in turn could impact the individual asset markets. This is indeed why due attention must be paid to whether or not the introduction of the optional portfolio scheme should precede the introduction of the euro in Hungary. Anticipated portfolio rearrangement would have a weaker impact on the government securities market after the euro changeover, and the entire European equity market could be accessed without exposure to exchange rate risks.

In our opinion, the second regulatory issue is the unsuitable form of operation of the funds with sponsor financial groups. In accordance with the regulatory environment, financial groups strove to adopt a model of operation that guaranteed their business interests. However, current regulations pose reputation-related and legal risks to sponsor groups, as their de facto controlling status and business interests are based on recruiting members (arrangement of general meetings) and on certain service contracts. Potential major problems arising in connection with the operation of pension funds may harm the reputation of the sponsor groups.

The root cause of the above problems is the shortcomings of Hungarian regulation. Legislators

introduced a model into the market of pension fund savings in 1997 which does not allow for the fact that self-governance is unsuited for controlling funds with considerable membership. Non-profit organisations lack both the capital and expertise that large organisations need, especially in the initial years of their operation.

Improvements in the regulation of the self-governing system would only yield contentious results. In practice, boosting the activity of fund members is not or hardly feasible. Even if there were an ideal solution, it would still remain a moot question whether savers can provide a comprehensive evaluation of their respective funds and their management and elect independent and expert governing bodies that match the self-governing nature of the funds.

Finally, in the case of funds with sponsor financial groups, as was mentioned above, cost transparency is not guaranteed as a result of the differing structure of profit and loss accounts adopted by funds as well as fund and asset management companies. The size of transfers within the individual groups and the content of underlying costs are hard to assess. Only estimates can be provided for group-level profitability.

It is rather difficult for members to overview and compare the costs incurred by the individual pension funds. Net return rates only contain investment costs. Deductions from membership fees are not included in the indicators. There is no uniform cost indicator stipulated by the Hungarian regulation which could clearly reflect the differences between the individual funds.

Based on the findings of this analysis and the overview that it has provided of regulatory issues, regulators should create an organisational form that matches the actual operation of pension

⁸⁰ An alternative of which is when asset allocation is specified by the board of directors.

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funds, as low transparency may incur high costs for savers over the long term. International best practice shows that pension funds and fund management companies are standard forms of operation. In addition to the establishment of an organi-

sational form, the provision of major guarantees for more transparent operation is a priority. Thus, to our judgement, increased focus must be placed on the enhancement of cost and performance transparency.

3. 5. An overview of preparations for the envisaged changes in financial regulations in the years to come

The brief summary that follows provides an outline of the European trends that will affect financial regulations in Hungary in the coming years. What justifies such a summary is that recent developments will translate into new tasks and approaches and provide a new timeframe for domestic regulators. There are three events that will lead to inevitable changes. One is alterations to the European regulatory mechanism (the Lámfalussy procedure), the other is Hungary's accession to the European Union and the third is a complete overhaul of banking prudential regulations and accounting standards in Europe. They will all result in fundamental changes in regulatory mechanisms in Hungary. The most important outcome is that the joint European regulatory preparation also provides a framework and a schedule for the preparation of domestic regulators. Concerted regulatory preparation in the EU reduces the regulatory risks implied in the introduction of new regulations. In addition to this, the new structure also urges a preliminary assessment of the anticipated consequences and the problems implied in the feasibility of European regulations, which are still to be drawn up.

The first practical test of close regulatory co-operation, a new phenomenon for the other member states as well, pertains to the new Capital Requirements Directive. The following section outlines related regulatory steps in Europe, which are also a top priority among the tasks facing national financial regulation in the coming years.

One of the major inventions of the Lámfalussy procedure, an official regulatory mechanism since 2001, is that it has supplemented the principle sin-

gle market – uniform regulation by common supervisory interpretation of regulations. The Committee of Wise Men, a committee chaired by Sándor Lámfalussy, realised that common regulations alone cannot promote the establishment of a single market. One of the reasons for this is that the individual supervisory authorities implemented different requirements in compliance with the same EU regulations. As a consequence, regulations, thought to be uniform initially, varied from one member state to the next, and hence encouraged differing responses from market participants.

The establishment of the Committee of European Banking Supervisors (CEBS)⁸¹ marked the beginning of intensive work aimed at enhancing the convergence of supervisory requirements for banking and investment enterprises. Consistent interpretation of regulations and its incorporation into supervisory practice will entail significant changes in the supervisory system currently in place. Despite an undisputable benefit, i.e. supervisory convergence, it may incur costs and materialise as a shock, associated with the introduction of a new system that has, from a certain aspect, remained untested in the financial market.

Following the establishment of CEBS, joint work began in connection with major issues such as the simultaneous radical reform of banking prudential regulations and accounting standards.

Preparation for the new capital adequacy requirements and reporting standards requires completely new systems and procedures. Therefore, uniform preparation for them offers a once-in-a-lifetime opportunity for regulatory and supervisory authorities to achieve supervisory convergence.

⁸¹ CEBS is a decentralised European institution comprising all supervisory authorities and non-supervisory central banks, with the representatives of the member states working in committees and working groups: www.c-ebs.org

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When new member states joined the EU's decision-making process, the wording of statutory regulations related to the working out of the capital requirements had more or less been completed (a draft version of the Capital Requirements Directive); however, work aimed at the alignment of interpretation and supervisory preparation had not started. Thus, Hungary, which used to have an observer's status, became a full member, i.e. one whose opinion is invited, at a time when substantial changes could not have been made to the draft statutory regulations. Nevertheless, it was possible to see the different ways a statutory rule could be interpreted, and that there was still room for the advocacy of national interests even at this stage.

It was also illuminative for the new member states to realise that EU directives, treated as the Holy Scriptures during legal harmonisation, one of the accession criteria, were far from being the Holy Scriptures after all. Rather, they can be adjusted flexibly to national markets and interests if there are such things. Freer interpretation is further amplified by a new regulatory philosophy, gaining ground increasingly, pursuant to which legal regulations should, first and foremost, lay down only basic principles.

In Central and Eastern European (CEE) countries we can talk of national markets and interests only to a limited extent. Key region-level characteristics of the systems of financial intermediation here are old member states' approximately 70 per cent-80 per cent ownership share in them and a 15-year-old financial market, still in its early days. The majority of CEE institutions are subsidiaries and parts of banking groups, financial holding companies or financial conglomerates registered in some other EU member state. Current prudential regulations governing banking and investment enterprises apply not

only individually but also on a group level. Thus, the operation of subsidiaries is subject to two sets of supervisory requirements: one is set by national supervisory authorities and the other is by authorities supervising parent undertakings. This environment substantially affects the room for manoeuvre for Hungarian and CEE regulators and supervisors. There cannot be too many country-specific regulations because either the current market does not need them, or they may lead to the change of current structures, taking the form of e.g. branching.

As a result, the regulatory system of Hungary as a member state has remained adaptive to a large extent, with major decisions made by European working groups. Regulations and interpretation agreed on a EU-level should not be supplemented by more country-specific regulations or interpretations than necessary. This has, of course, been true since the start of the preparation for accession. Current changes are reflected in the fact that, since Hungary's accession, we have had a say in the decisions passed by working groups and that joint work in Europe has been expanded to include consistent interpretation of community regulations. The dates of these crucial changes coincided in the case of the new member states.

The timetable for this work also hinges on a shift from national regulation towards decision-making at the EU level. Only when European regulations have been outlined is it worth establishing and finalising our own system of regulations. However, the outcomes of the planned regulations and anticipated related feasibility problems must be identified at the outset, i.e. upon the formulation of European regulations. If a rule cannot be adjusted to the Hungarian market environment or if European regulations do not apply to a national institution or instrument, the necessary

changes can be achieved on 4 levels: 1) the wording of the relevant EU statutory regulation (Committee, Council or Parliament level), 2) EU legal interpretation, 3) national, member state legislation and 4) national supervisory interpretation. The room for manoeuvre becomes increasingly smaller, as the series of decisions made on a certain level are bound by the decisions made on the one immediately preceding it. As a consequence national regulatory work will have to start much earlier. In the case of the tasks specified in Points 3 and 4, discussions among competent authorities and the dialogue between authorities and the market will have to begin years ahead, at the time when work defined in Points 1 and 2 starts.

The next part provides an overview of EU guidelines on legal interpretation in connection with calculations and reporting obligations related to the new capital requirement directive (CRD). It touches on the issues which have been examined by CEBS working groups and towards which member states have taken up their respective regulatory and supervisory stances, and which form as the basis for national legislation and supervisory guidelines as well. Although compliance with recommendations is not mandatory, the fact that both supervisory authorities and central banks have agreed on these recommendations and the supervisors and regulators of all member states participated in its formulation guarantees, to a certain extent, its incorporation into practice in member states.

Guidelines extend to issues related to both financial stability and supervisory procedures and cooperation. Examples of interpretation that affects all members of the financial system and, hence, has financial stability-related implications are major issues in terms of financial stability. Such issues are addressed in all recommenda-

tions, supplemented by practical tasks related to supervisory authorisation, cooperation and documentation, depending on the issue at hand. The summary that follows does not make any distinction in this respect. Rather, it attempts to present all the results achieved so far.

There are four documents related to the implementation of the new capital requirement directive (CRD):

- a) Validation and implementation of advanced methods and risk management systems,
- b) Recognition of external rating agencies,
- c) Practice of supervisory review and evaluation, and
- d) Common reporting requirements.

The title 'Validation and implementation of advanced methods...' speaks for itself, with the recommendation identifying the most important issues of directive interpretation related to advanced methods. The recognition of external rating agencies and accommodating their ratings lie at the heart of the standard method, while the practice of supervisory review and evaluation provides guidelines for the implementation of the second pillar of the directive. Point d, i.e. laying down requirements for common reporting requirements, represents a major step forward. In this case, supervisory experts prepared uniform tables (COREP) on an EU level to be used for reporting compliance with capital requirements. The next section discusses the results of the four documents in detail.

Although relevant for the CRD as well, the other two documents, in which European banking supervisors published guidelines on their own activity, offer a more general subject matter:

- e) home-host cooperation, and
- f) supervisory disclosure.

The guideline covers the framework of cooperation between home-host supervisory authorities

responsible for the supervision of the same banking group. The intensity of cooperation between home-host supervisory authorities from now on depends on the significance of subsidiaries and branches. In the case of significant group members, two or more supervisory authorities will have to cooperate more actively. Such cooperation may range from sharing information and supervisory work to passing joint decisions. The recommendation specifies the criteria for significant size and offers a pattern of the issues where supervisory authorities should co-operate and of the way cooperation should be organised and documented to ensure accountability.

The specification of the data disclosed by the supervisory authorities on themselves represents a major step forward. This means that they identify and make a list of the differences between the regulations and supervisory guidelines of the individual member states, make them comparable in a uniform system and disclose them on a central website. This is useful from several aspects. It disciplines supervisory authorities, urging them to implement changes to the banking directives consistently in the EU. Further, it can explore similarities in member states' addressing certain issues despite the lack of common regulations regarding such issues.

The above six recommendations promote regulatory/supervisory measures that are integral parts of the preparatory work carried out by regulators and supervisors in member states. The compilation of these recommendations makes supervisory work easier and schedules it simultaneously; thus, these measures combine to reduce regulatory risks implied in the introduction of fundamentally new rules.

Validation and implementation of advanced methods (IRB, AMA)⁸² and risk management systems

The guideline sums up and interprets the criteria that supervisory authorities will have to take into consideration in approving advanced methods and conducting on-going inspections in the future. The recommendation serves as a reference as to the compilation of an application package submitted by banks and the criteria that supervisory authorities should adopt in evaluating applications. Furthermore, it provides a uniform framework for the interpretation of those points of the directive that are either not satisfactorily detailed or difficult to interpret due to the legal structure of the directive. For market participants it is especially important that supervisory authorities harmonise their approval considerations, since model applications are submitted centrally by parent banks to their domestic (consolidated) supervisory authorities, which are also responsible for supervising banking groups as a whole, even if banking groups are present in several member states. Consolidated supervisors and those supervising subsidiaries pass joint decisions on the approval of the application.

Of the issues of interpretation, a clear definition of SMEs and their classification into the category of either households or corporations is one that bears relevance to the Hungarian environment. The proposals set forth in the recommendations prevent banks from treating two-thirds of the corporate credit portfolio as SMEs included in the retail portfolio.

Another important achievement is the clarification of the conditions for using external databases and central databases established by banks within

⁸² IRB (Internal Ratings Based) – methods based on internal ratings and used to quantify credit risks. AMA (Advanced Measurement Approaches) – used to identify the degree of operational risks.

banking groups themselves or those competing with one another in the same market. As the directive does not provide a clear recommendation in this respect, stricter interpretation of certain rules could easily have prevented banks, coping with an inadequate supply of information, from applying advanced methods based on their internal risk management.

Recognition of external rating agencies

When it is not its own internal method that an institution uses for the calculation of capital requirements, it relies on the ratings of external rating agencies to assess the credit risks posed by its customers and the necessary capital requirement. The recommendation interprets the criteria for the recognition of external rating agencies as laid down in the directive. It provides guidelines on how various ratings can be brought in line with each other and how they can be assigned to the risk weights specified in the directive. Although the directive gives the supervisory authorities in the individual member states discretion over these rules and the interpretation of criteria; CEBS has satisfied practical market and supervisory needs when providing common guidelines applicable in the whole EU.

In order for external rating agencies to be selected, CEBS has defined a uniform process, providing assistance with the recognition of rating agencies operating in several countries in one step. The co-decision procedure does not delegate the responsibility of recognition to one single country. Rather, it stipulates that it should be the shared responsibility of the supervisory authorities affected.

Practice of supervisory review and evaluation

The coordinated supervisory review of compliance with capital adequacy requirements is a completely new phenomenon in the EU. Supervisory policies vary from one member state to the next, an example of which is that on-site and off-site inspections differed in importance in the member states surveyed. Member states have always had discretion over the criteria of supervisory evaluation. This is indeed why strikingly different approaches have been adopted in the EU.

The guideline jointly formulated by CEBS members provides the criteria and a minimum set of expectations that must be met in performing the supervisory review stipulated in pillar 2 of the directive. The first half proposes criteria and requirements to be accommodated for the internal risk evaluation of banks. Pursuant to this, through a formal revision completed once in each year banks must ensure that risk taking and capital are closely aligned. Such internal evaluation by banks will form the basis of supervisory proceedings. The supervisory evaluation procedure detailed in the second half compares banks' capital formation with the findings of their own risk assessments; furthermore, in addition to evaluating the adequacy of regulatory capital, it formally reviews compliance with the criteria specified in the directive.

The supervisory requirements set by the guideline differ, depending on the complexity of the institution supervised and its role in the system of financial intermediation. As a result, the burden of compliance with regulations placed on smaller and less complex institutions could be reduced.

⁸³ IFRS (International Financial Reporting Standards), which makes the application of fair value measurement mandatory for all quoted companies (for details, please see Box 2-4).

Requirements for common reporting

The guideline puts forward a proposal for the harmonisation of supervisory data requirements in connection with the solvency ratio used in the calculation of capital requirements and related to consolidated data. Supervisory authorities have served a serious market need, as European banks have identified multiple data provision as one component of their large regulatory costs. Under the recommendation, banks will be allowed to use uniform data tables and a uniform protocol language in preparing the two reports. However, each member state will have discretion over specifying further detailed information for market participants to provide. Although the degree of detail will continue to differ, the same datum will be included in the same row and with the same content in all member states.

The draft mid-term regulatory policy programme of the European Commission

The viability of the new mechanism of supervisory cooperation and joint interpretation established on the basis on the Lámfalussy Report and tested through the introduction of CRD and IFRS⁸³ can only be evaluated after banks start applying the new methods, in 2007 at the earliest. This being the case, despite market pressure, the European Commission, responsible for EU level legislation, is not planning to change the current supervisory structure in its regulation policy strategy for 2005–2009. According to the Commission, the supervision of financial groups operating in several countries can be satisfactorily performed by home country control, supplemented by host supervisory responsibility for local members. In the Commission's opinion, the efficiency of a multi-tiered supervisory structure can be increased

through reduction in the number of exemption procedures approved in earlier directives and a clearer definition of the role of supervisory authorities in crisis situations.

Furthermore, the Commission intends to make serious efforts to promote consistent implementation of existing requirements and provide more efficient supervisory measures. Achieving supervisory convergence is vital especially to national markets in CEECs, as, owing to non-resident banks' high ownership share here, the differing supervisory requirements of consolidated supervisors headquartered in different countries may result in unjustified differences in the practice of the individual banks and hence distort competition in the national markets.

In the years to come the Commission will treat enhancing the integration of the European financial sector as a top priority in respect of both compliance with regulations and the wording of statutory requirements. In order to be able to do so, it intends to simplify regulation, put an end to inconsistencies and compile a uniform rule book of financial services codifying requirements. As a result of the revision of the efficiency of the existing regulation and its alignment with the new capital adequacy requirements, the decision has been made, amongst other things, to reform the concept of regulatory capital, the calculation of large exposures and the requirements for financial conglomerates. Greater emphasis will be put on the permanent discussion with market and supervisory authorities, easing the administrative burden on market participants as well as a preliminary assessment and a regular follow-up of regulatory measures.

The Commission will put forward proposals for new regulation only if new regulations have proven significant beneficial implications for efficiency and stability. It intends to achieve uniform imple-

mentation in member states through the provision of substantial expert help in the course of transposition, more realistic timetables for adoption as well as tighter-than-earlier follow-ups and disclosure obligations.

If the Commission's envisaged measures receive support from member states and all member states commit themselves to attaining the above objectives, the years to come may witness reduction in the costs of financial intermediation and the integration of national markets into a truly European market. Service providers' opportunities for market entry will increase and

prudential requirements will be more aligned with risks, which in turn will lead to the convergence of supervisory and internal risk management criteria and hence to further improvement in efficiency. Beyond certain limits, the efficiency of service provision can only materialise when concerted with more sophisticated consumer behaviour as well as realistic and cost-sensitive product selection. In the Commission's opinion, enhancing customers' financial culture and promoting the recognition of consumers' interests will be major tasks facing member states in the coming years.

4. Review





4. 1. Are Hungarian financial markets liquid? The theory and practice of liquidity in foreign exchange and government securities markets

By Csaba Csávás and Szilárd Erhart

(Occasional Paper series; forthcoming)

This study discusses liquidity in financial markets. The Hungarian HUF-EUR spot FX market and the market of HUF-denominated government securities are analysed of all markets segments. In the course of the analysis, we primarily wished to identify the most important factors affecting liquidity in the Hungarian financial markets. In addition, we also examined Hungarian market liquidity in a regional and international comparison. This summary gives a definition of liquidity, specifies its most significant indicators and describes the most salient findings of our empirical survey.

Although there is no generally accepted definition for market liquidity, one of the most comprehensive and widespread approaches is the following: 'A liquid market is a market where a large volume of trades can be immediately or rapidly executed with minimum effect on prices.'⁸⁴

In addition to market participants, the central bank is also highly interested in having appropriate market liquidity. Amongst other things, liquidity is a key issue for central banks in the assessment of financial stability. If market liquidity drastically drops, the stability and integrity of financial markets may be at risk. In turbulent market situations, a decline in liquidity may strengthen the effects of fundamental shocks on asset prices and generate unfavourable spill-over impacts. For this reason, markets can also be expected to maintain liquidity at a relatively constant level.

An overview of the literature on measuring market liquidity leads to the important conclusion that liq-

uidity can only be assessed with simultaneous consideration of the information provided by several indicators. As market liquidity relates with transaction costs, one of the characteristic indicators is the difference between bid and ask prices called bid-ask spread. Another frequently used indicator of market liquidity is market turnover, which may reflect a significant constituent of market liquidity called 'market depth' (denoting the largest volume of order that can be transacted without affecting prevailing market prices). Market concentration can also be used as an indicator of liquidity. A decline in the concentration of market participants who deal with market makers may suggest a rise in liquidity: if the share of highly significant participants falls, the chance that they can affect prices by their large-volume transactions also drops.

Liquidity in the Hungarian HUF-EUR spot market was analysed with the help of a so-called bid-ask spread model. Bid-ask spread models break down the difference between bid and ask prices in a specific financial asset market into various factors. Turnover, volatility, concentration and other factors may affect spreads.

The average value of the HUF-EUR bid-ask spread was nearly HUF 0.2 over the past two years. Expressed as a percentage of the exchange rate, this amounts to 0.085 per cent, i.e. 8.5 basis points. Although this value may be considered as extremely low, if expressed in forint, at an average annual turnover, the very existence of the bid-ask spread means that an aggregate cost of nearly HUF 15 billion is incurred by the investor and recorded as revenues for market makers.

One of the factors having the most profound impact on the bid-ask spread is price volatility. On account of their activity, market makers undertake market risk. For market makers market liquidity

⁸⁴ BIS (1999): 'Market Liquidity: Research Findings and Selected Policy Implications'.

carries the risk that in the period between hitting the bid and ask quotes they provisionally undertake an open position. Thus, any potential cost of unfavourable price changes is incorporated in the bid-ask spread, and the higher the volatility, generally the higher the spread is.

The bid-ask spread and volatility times series also suggest that as they are wary of rise in volatility, market makers act in a circumspect fashion when setting the spread. Sudden jumps in volatility are usually promptly followed by rises in the spread, while volatility declines are followed by gradual spread cuts only with a delay. Afraid of sudden volatility hikes, market makers lower the spread in a perceptible measure only if moderation in the volatility already seems persistent. This precaution is understandable, as volatility is usually characterised by fast and extensive rises, however, slow and gradual decline. Another feature that can be observed is that market makers tend to increase the spread more if volatility jumps simultaneously with depreciation.

The analysis of spot market turnover and concentration revealed that non-residents probably play a more important role in providing liquidity than assumed simply on the basis of their share in market turnover. This was supported by the tested bid-ask spread model: the indicators reflecting non-resident activity turned out to be more significant than the overall market indicators. Just as expected, in the tested model rising market turnover entailed a fall in the bid-ask spread, while increasing market concentration and weakening competition raised the spread, other factors being equal.

Another conclusion that follows from this model is that over the past few years market liquidity has been slightly but constantly improving. A reason for the trend increase in liquidity may be that according to anecdotal information, the share of transactions arranged via electronic foreign

exchange trading systems in the total turnover has increased in recent years. Also, we found that every Monday market liquidity is higher than on other days. This may be due to the timing of the central bank's rate setting meetings, difference between the Hungarian and American time zones or a kind of a weekend effect, as weekend news, announcements and events affecting the market appear in the market all at once on Monday.

The foreign exchange market between 1999-2005 was also examined for monthly seasonality. Amongst the summer months, only August was found to have significantly higher turnover than other months. However, the difference is not too large: it amounts to approximately 10-20 per cent of average turnover. Thus, the data available for us fail to support the hypothesis that foreign exchange activity would considerably decrease in the summer, there is no 'lay-off' in the FX market.

The bid-ask spread was also performed in an international comparison: foreign exchange market data from 25 countries were included in the cross-sectional sample. Rising turnover decreases the bid-ask spread, and rising volatility increases it, the effects of these two factors on the spread being equally important. The applied exchange rate regime may also affect the difference between the spreads of the individual currencies: in the countries that have adopted a narrow-band regime, the spread is lower. Based on the spread and the turnover, the Hungarian forint is less liquid than the Polish zloty, while the Czech koruna has a liquidity similar to the forint. As a percentage of GDP, the HUF market transacts the highest turnover of the four principal currencies in the region. An international comparison of turnover data reveals that one of the most significant factors to affect daily turnover is nominal GDP. Thus, with the increase of turnover, HUF market liquidity may still improve in the long term.

Liquidity was analysed in the government bond market on the basis of the bid-ask spread and turnover data. However, there are significant differences among the various spreads gained from different data sources. The narrowest spread in terms of yield (5–8 basis points) can be observed in the Bloomberg trading system. This is due to the fact that the Bloomberg system is indirectly also involved in trade. In contrast to this, the Reuters data contains indicative quotes, and so the spreads are somewhat broader (between 10–16 basis points). Based on the CEBI (Central European Bond Index) introduced by Dresdner Kleinwort Wasserstein, the bid-ask spread moved between 16–18 basis points across the entire maturity spectrum in July 2005.

No significant difference was found between the yield-based spreads over various maturities. As a result, the spread expressed in price is an increasing function of maturity irrespective of the chosen data source. This is because the longer the maturity of a security, the more sensitive it is to a unit of change in government bond yields.

Government bond market spreads seemed to be flat over the previous periods, the single major rise that could be identified followed the end-2003 money market turbulences. Although this rise was simultaneous with a temporary increase in volatility, the fact that spreads settled at a higher level suggest that liquidity may have fallen permanently. A sustained rise in the spread after money market turbulences is especially clear in the case of bonds with longer maturities. The analysis of government bond yields also reveals co-movement between the bid-ask spreads and turnovers of the instruments of various maturities. This may indicate correlation between the liquidity characterising the individual assets.

On the basis of turnover in government securities we found that liquidity falls as a function of the remaining maturity. Seasonal impacts also affect market turnover: on auction days secondary market turnover increases significantly. This means that turnover by participants who, speculating in the difference between auction and secondary market prices, undertake positions prior or subsequently to issue may also be focused on auction settlement days.

Based on bid-ask spreads, the Hungarian government securities market is characterised by low liquidity by international standards. It is expected that prospective accession to EMU may reduce the costs of trade in government bonds, and thus improve market liquidity.

Partly due to its size, Poland has the largest government securities market in Central Europe. In 2004, daily average turnover was around EUR 3 billion, approximately ten times the turnover of the Hungarian government bond market. Another factor that reflects lower liquidity in the market of HUF government bonds is that on the basis of data by CEBI, Hungarian market spreads are 2 to 3 times greater than Polish spreads. Bilateral interbank transactions account for the overwhelming majority of turnover in both countries, and although the operating electronic trading systems only have a low share in business at the moment, their spread may boost trading activity and increase liquidity in the government securities market over the medium term.

We have also found indications of liquidity changes in the same direction in the government securities and the foreign exchange market, which used to be characteristic of turbulent periods in particular. This suggests that liquidity may be provided by the same participants in these two markets, and thus in extreme market situations, decreasing liquidity in one of the market segments may adversely affect the other.

Appendix

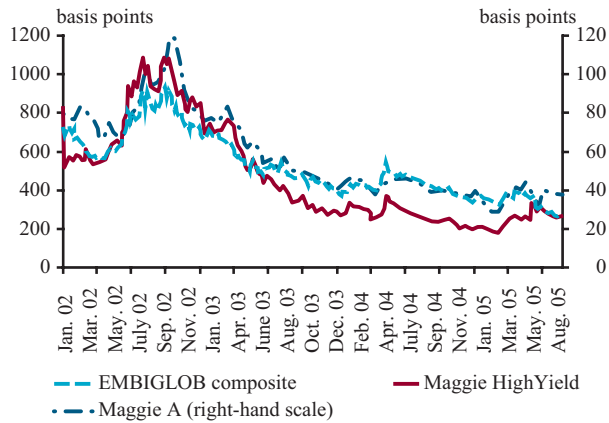




Macroeconomic and financial market environment

Chart 1

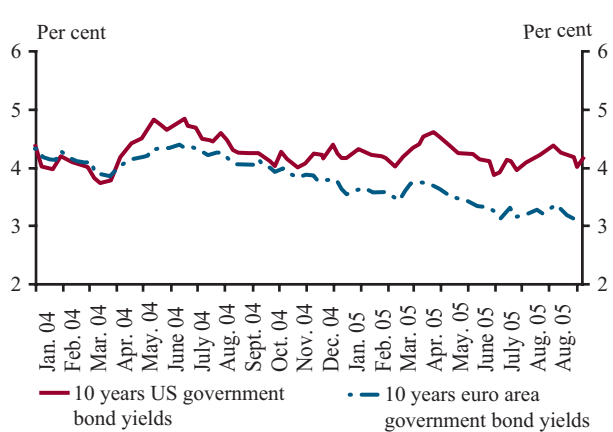
Global risk indicators



J.P. Morgan-Chase, Thomson Financial Datastream.

Chart 2

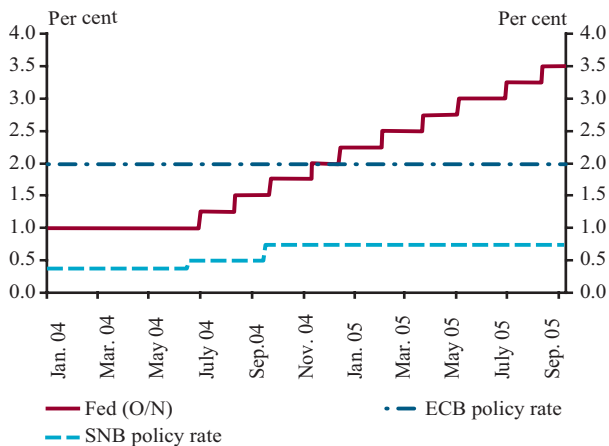
Long-term USD and EUR bond yields



Source: Reuters

Chart 3

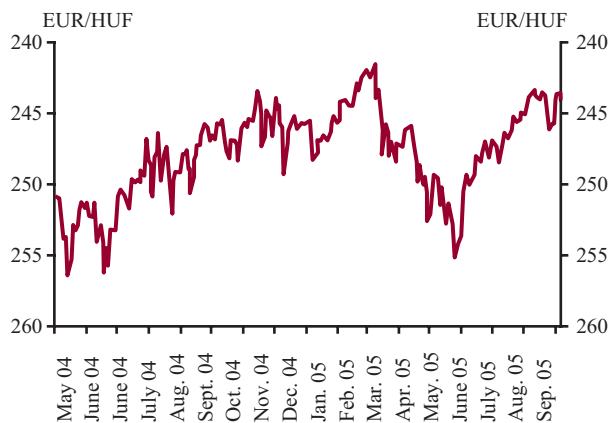
Policy rates of the Fed, the ECB and the National Bank of Switzerland



Source: Reuters.

Chart 4

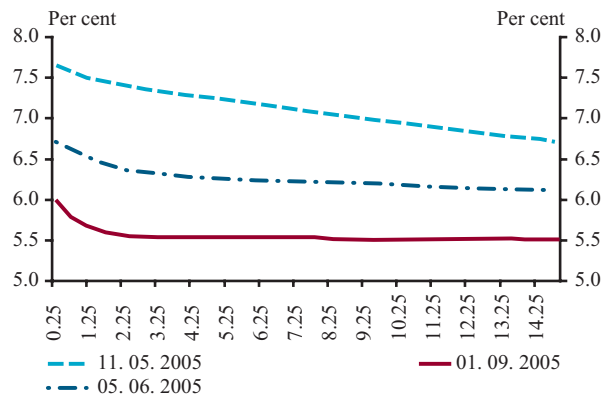
The exchange rate of the forint



Source: MNB.

Chart 5

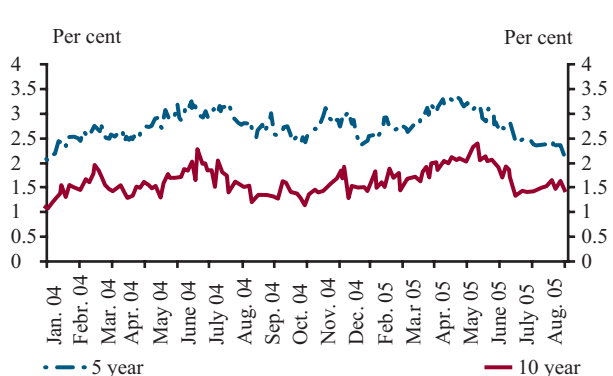
Development of the yield curve



Source: Reuters and MNB.

Chart 6

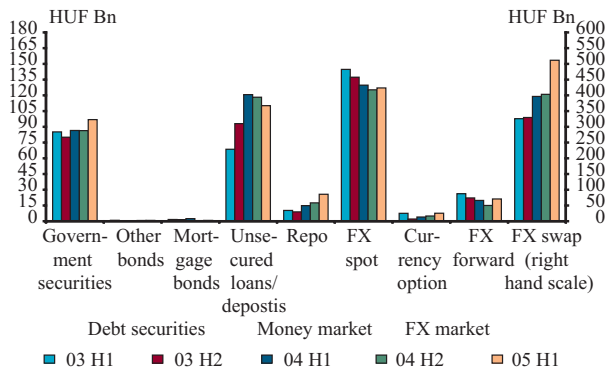
Development of implied 3 month forward differences



Source: MNB.

Chart 7

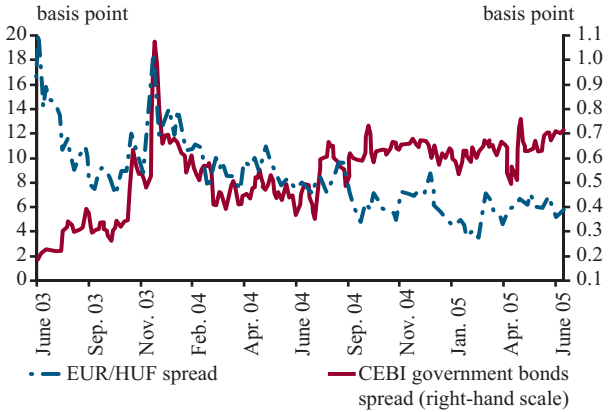
Average daily secondary market turnover of certain segments of Hungarian financial markets (Bn Forint)



Source: MNB.

Chart 8

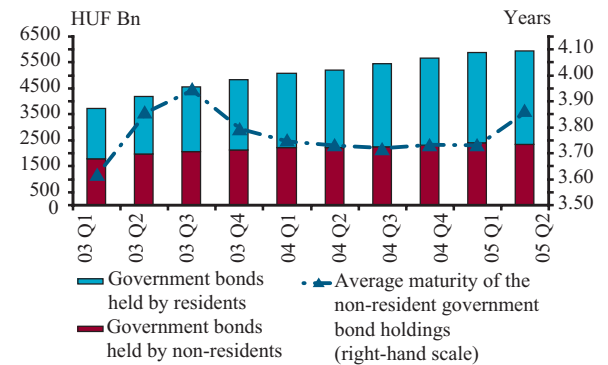
Bid-ask spreads in the spot FX market and the CEBI government bond bid/ask spread (5-day moving average)



Source: Reuters, DKRW.

Chart 9

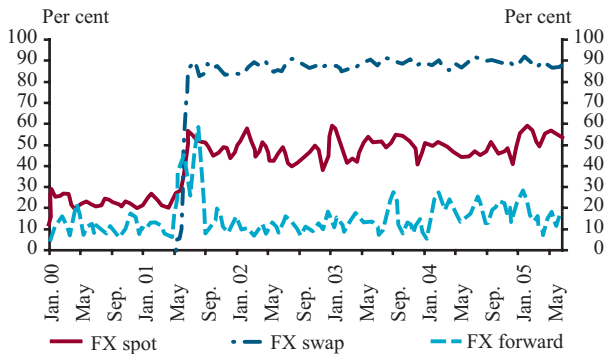
Distribution of the outstanding amounts of the HUF government bonds by resident/non-resident (average of daily outstanding amounts)



Source: MNB.

Chart 10

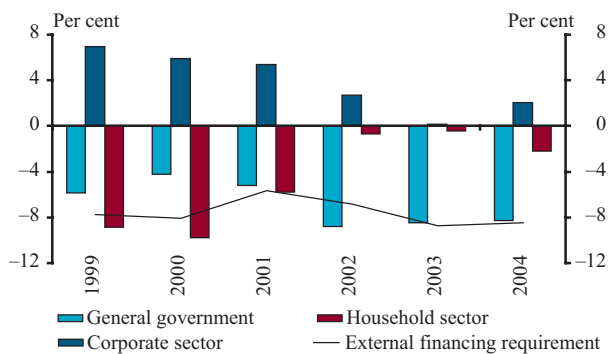
Share of non-resident market participants in the Hungarian FX market turnover



Source: ÁKK and MNB.

Chart 11

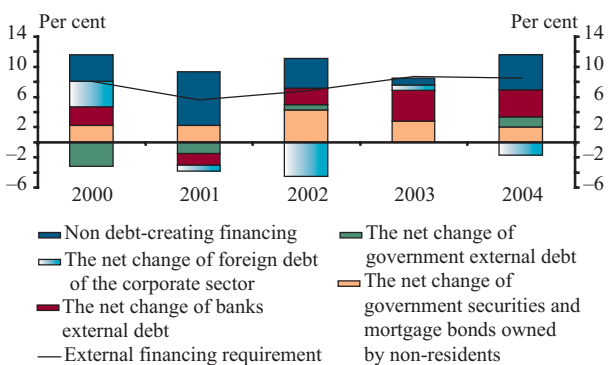
Net lending of sectors and the external financing requirement as a proportion of GDP



Source: MNB.

Chart 12

External financing requirement and its financing as a percentage of GDP

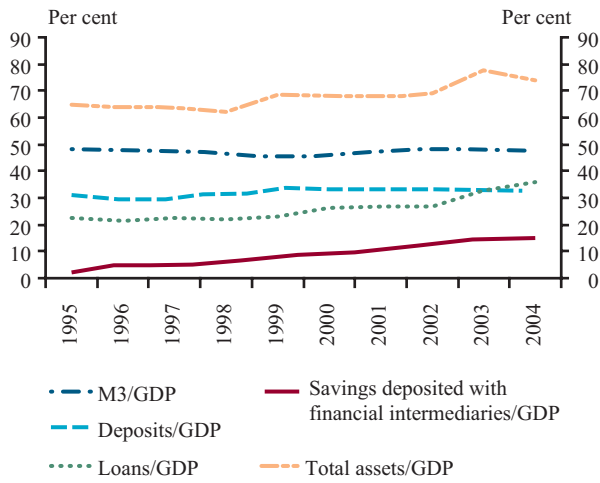


Source: MNB.

Indicators of financial stability in the banking sector

Chart 13

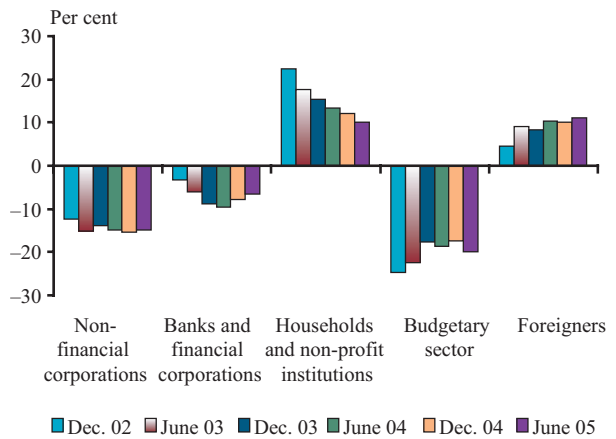
Financial Depth Indicators (in per cent of GDP)



Source: CSO and MNB.

Chart 14

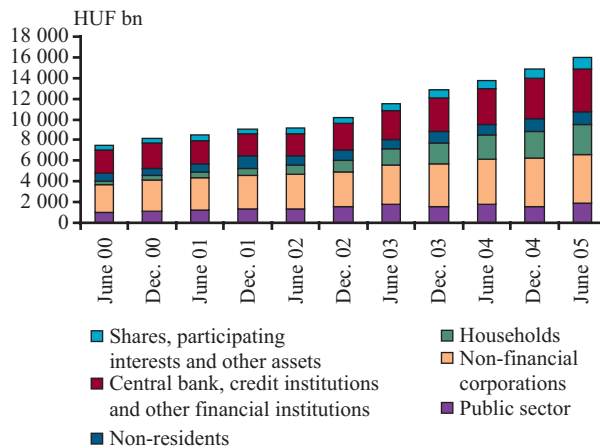
Net financial positions of different sectors vis-à-vis domestic banking sector



Source: MNB.

Chart 15

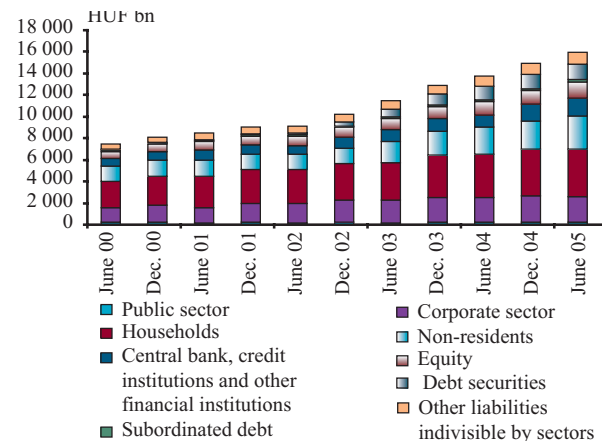
Banking sector assets



Source: MNB.

Chart 16

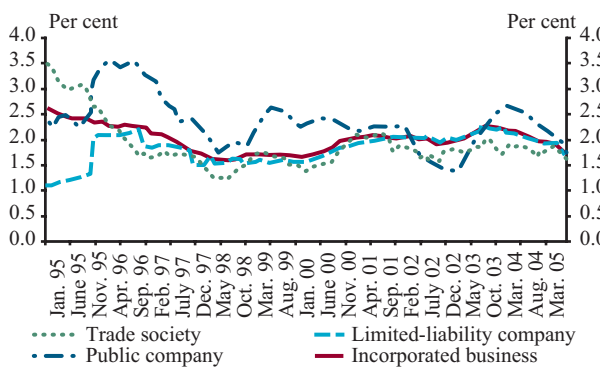
Banking sector liabilities



Source: MNB.

Chart 17

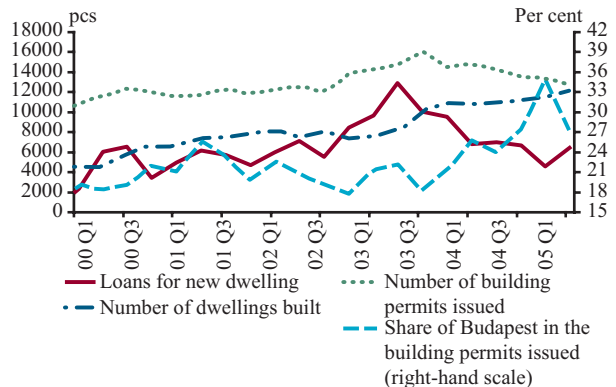
Annual bankruptcy rates for incorporated business



Source: Opten Kft.

Chart 18

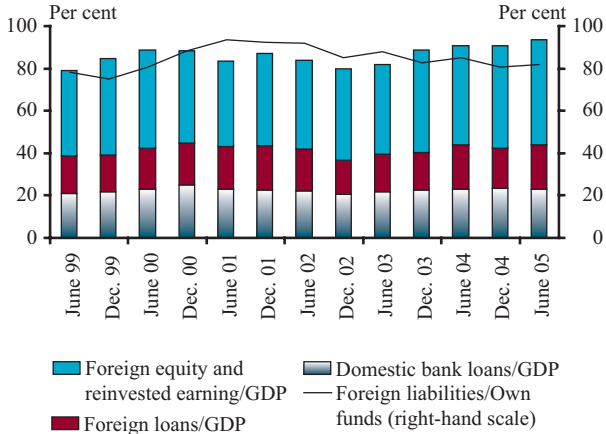
Housing market indicators



Source: CSO and DEM.

Chart 19

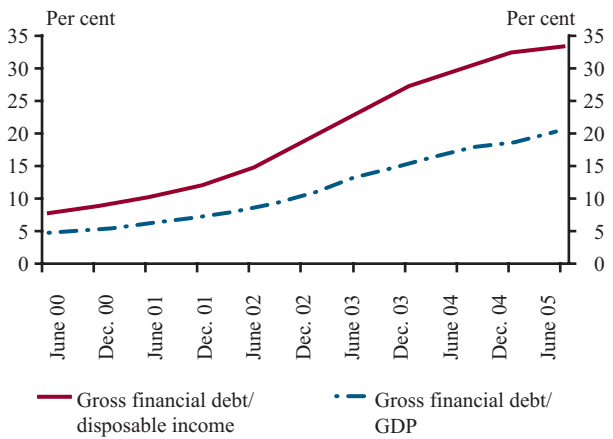
Indebtedness of non-financial corporations



Source: MNB.

Chart 20

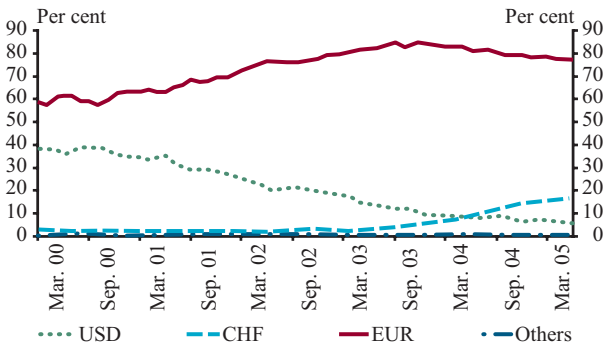
Household sector's indebtedness



Source: CSO and MNB.

Chart 21

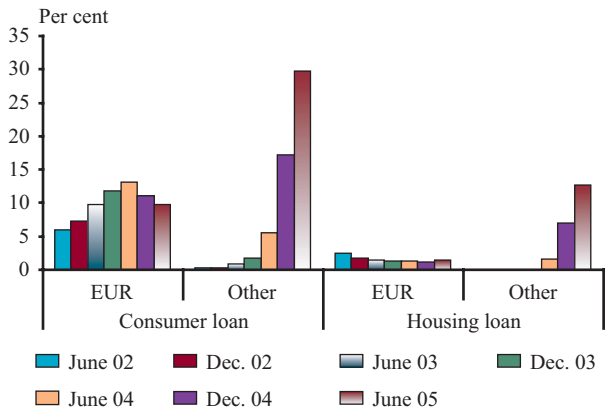
Denomination structure of the non-financial corporations' domestic lending



Source: MNB.

Chart 22

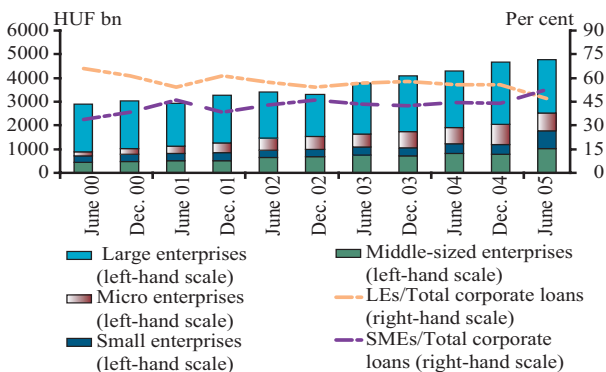
Denomination of household banking loans



Source: MNB.

Chart 23

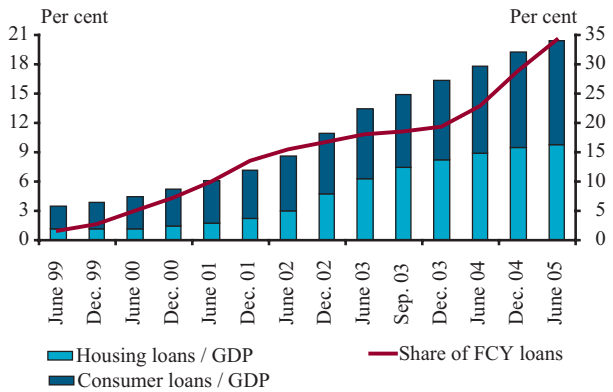
Distribution of non-financial corporate lending by company size



Source: MNB.

Chart 24

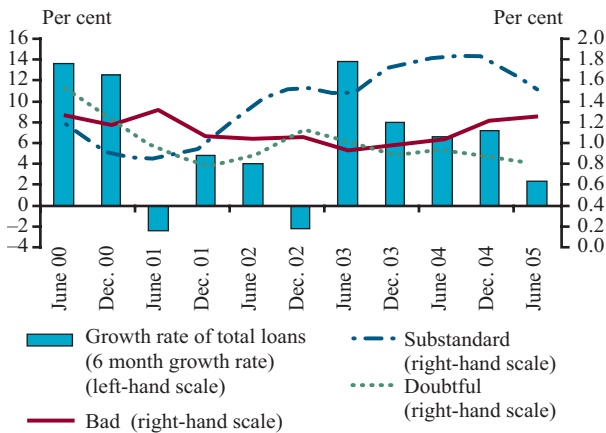
Growth and composition of household loans



Source: CSO and MNB.

Chart 25

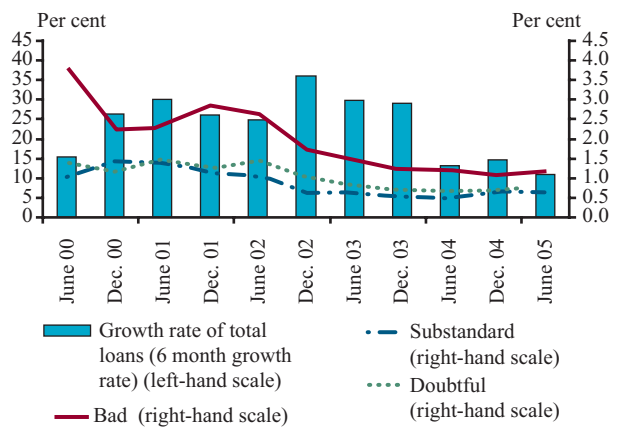
Portfolio quality of loans to non-financial corporations



Source: MNB.

Chart 26

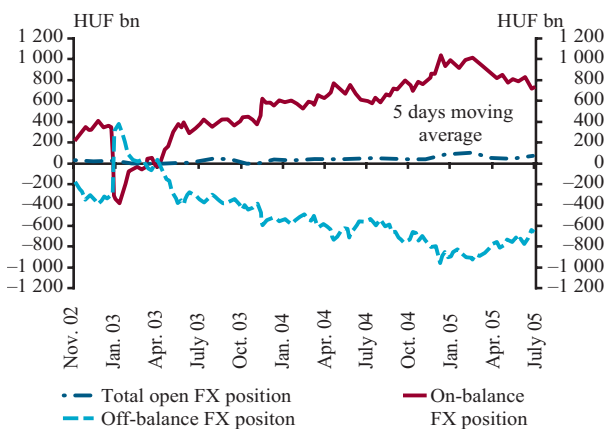
Portfolio quality of loans to households



Source: MNB.

Chart 27

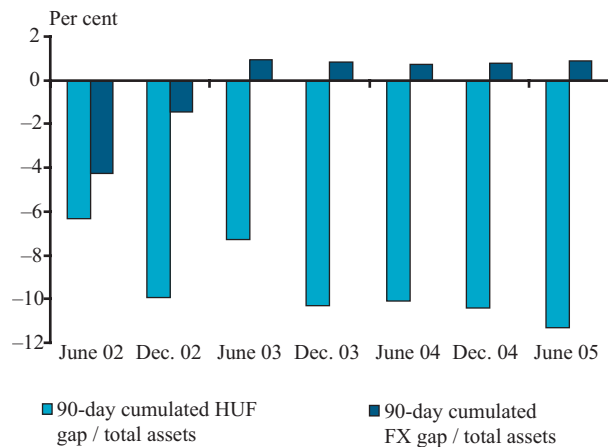
FX position of the banking sector



Source: MNB.

Chart 28

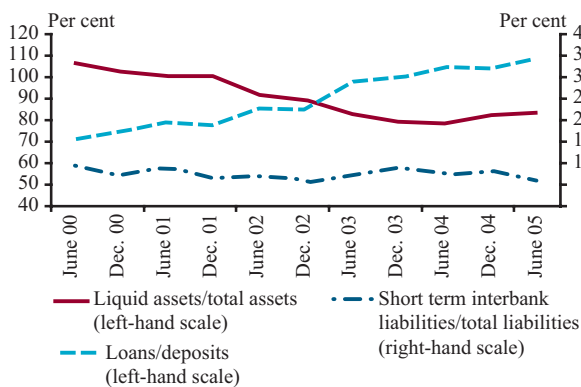
Banking sector interest rate risk



Source: MNB.

Chart 29

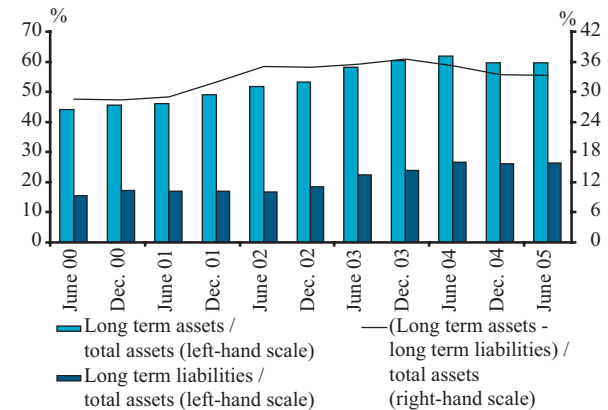
Liquidity indicators of the banking sector



Source: MNB.

Chart 30

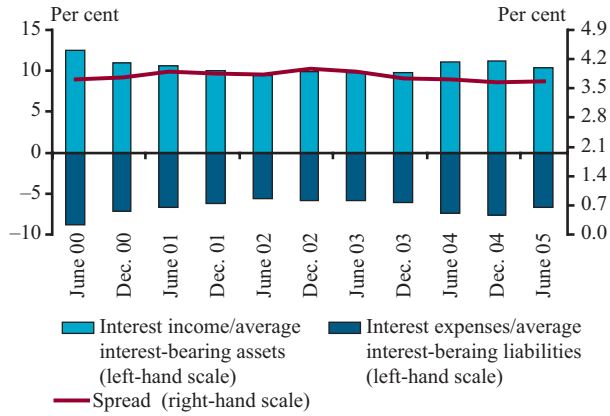
Long-term assets and liabilities of the banking sector



Source: MNB.

Chart 31

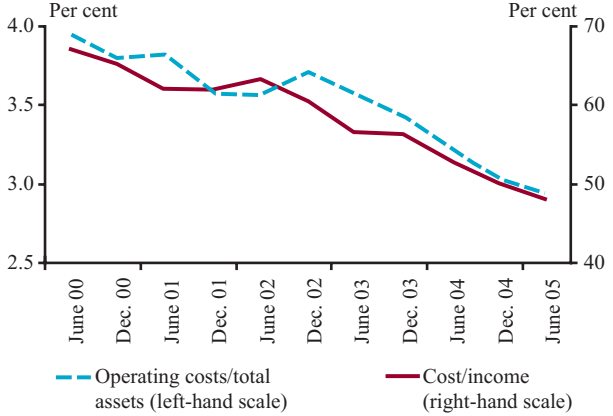
Spread and its components



Source: MNB.

Chart 32

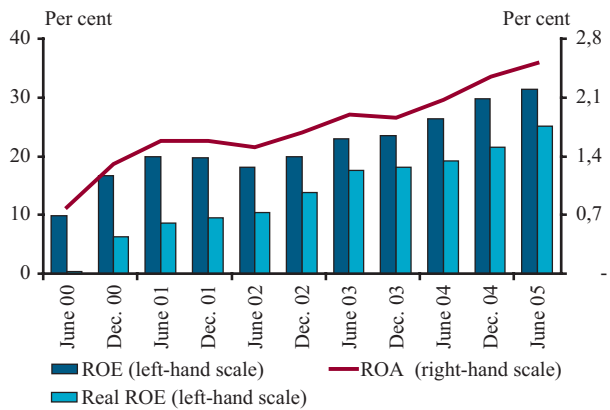
Cost-efficiency indicators of the banking sector



Source: MNB.

Chart 33

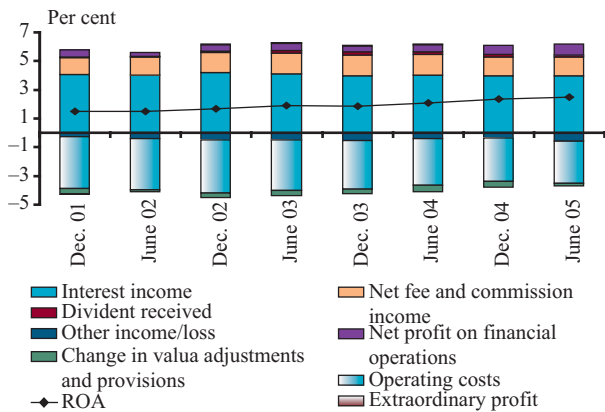
Banks' return on assets and return on equity



Source: MNB.

Chart 34

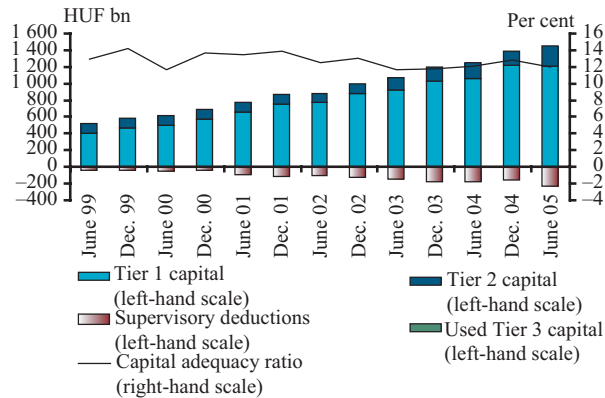
Components of pre-tax profit as a ratio of balance sheet total



Source: MNB.

Chart 35

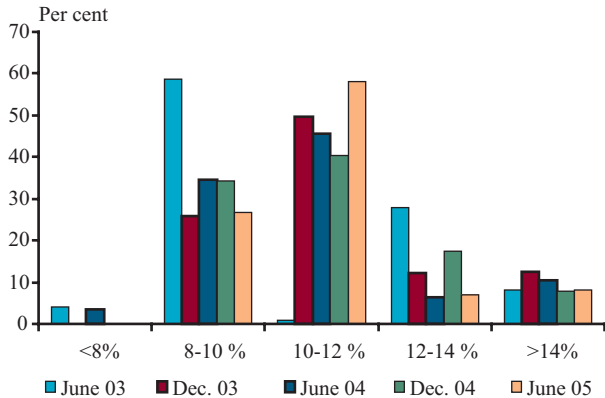
Banking sector own funds and capital adequacy



Source: MNB.

Chart 36

Dispersion of banking sector capital adequacy ratios



Source: MNB.

Notes to the Appendix

Chart 1 EMBI Global Composite – the index of sovereign and quasi-sovereign issuers' USD-denominated bonds, as calculated by JP Morgan-Chase. MAGGIE – the index of euro-denominated government and corporate bonds as calculated by JP Morgan-Chase.

Chart 8 The EURHUF spread was calculated from the best bid-ask prices of the Reuters' electronic trading system. The government bond market spread is the Central European Bond Index (CEBI). HUF governments bond spread of the Dresdner Kleinwort Wasserstein (DRKW).

Chart 13 M3: According to the ECB's definition: M2 + repurchase agreements + investment fund units of money market funds + debt securities with maturity of up to 2 years. Loans, deposits and savings deposited with institutional investors: from/to non-financial corporations and households. Savings deposited with institutional investors: life insurance, investment fund, and pension fund.

Chart 14 As a proportion of the balance sheet total.

Chart 15 Up to May 2001, private entrepreneurs are included in the corporate sector, as of June 2001, they are classified into the household sector. Up to May 2001 the household sector contains only household data.

Chart 16 Up to May 2001, private entrepreneurs are included in the corporate sector, as of June 2001, they are classified into the household sector. Up to May 2001 the household sector contains only household data.

Chart 17 Number of companies against which bankruptcy and liquidation procedures were initiated during the previous 12 months, as a percentage of the total number of companies.

Chart 18 The loans granted for the purposes of purchasing new homes are exclusive of loans denomi-

nated in foreign exchange. Foreign exchange substitution is, however, probably lower in this category.

Chart 22 The line termed 'other' contains loans denominated mainly in Swiss francs.

Chart 23 Due to a change in the definition of small, medium and micro-enterprises, the 2005 data are only partially comparable to earlier ones.

Chart 24 Consumer credit: including overdraft and loans granted for the purposes of purchasing securities. Denomination of loans provided by financial enterprises is based on MNB estimation.

Chart 27 The positive value denotes a long FX position.

Chart 29 Liquid assets: cash and settlement accounts, T-bill and T-bond holdings, securities issued by the central bank, short term deposits and short term claims on foreign banks.

Chart 30 Liabilities with maturity over a year: excluding shareholders' equity and provisions.

Chart 31 Spread: $\text{Interest income} / \text{average interest-bearing assets} - \text{Interest expenses} / \text{average interest-bearing liabilities}$. Annualised data.

Chart 32 Income is the sum of net interest income, net non-interest income, net profit on financial operations and dividends received. Interim data are annualised (preceding 12 month)

Chart 33 ROE: $\text{Pre-tax profit} / (\text{average shareholders' equity} - \text{Profit or loss for the financial year})$. Interim data are annualised (preceding 12 month)

ROA: $\text{Pre-tax profit} / \text{average balance sheet total}$. Interim data are annualised (preceding 12 month)

Chart 35 Until 05/2001 deductions due to holdings in and subordinated loans granted to credit institutions, financial enterprises, investment firms and insurance companies were subtracted from Tier 1 capital.

Chart 36 Share of banks of given range in risk-weighted assets.

Report on Financial Stability
October 2005

Print: D-Plus
H-1033 Budapest, Szentendrei út 89-93.

