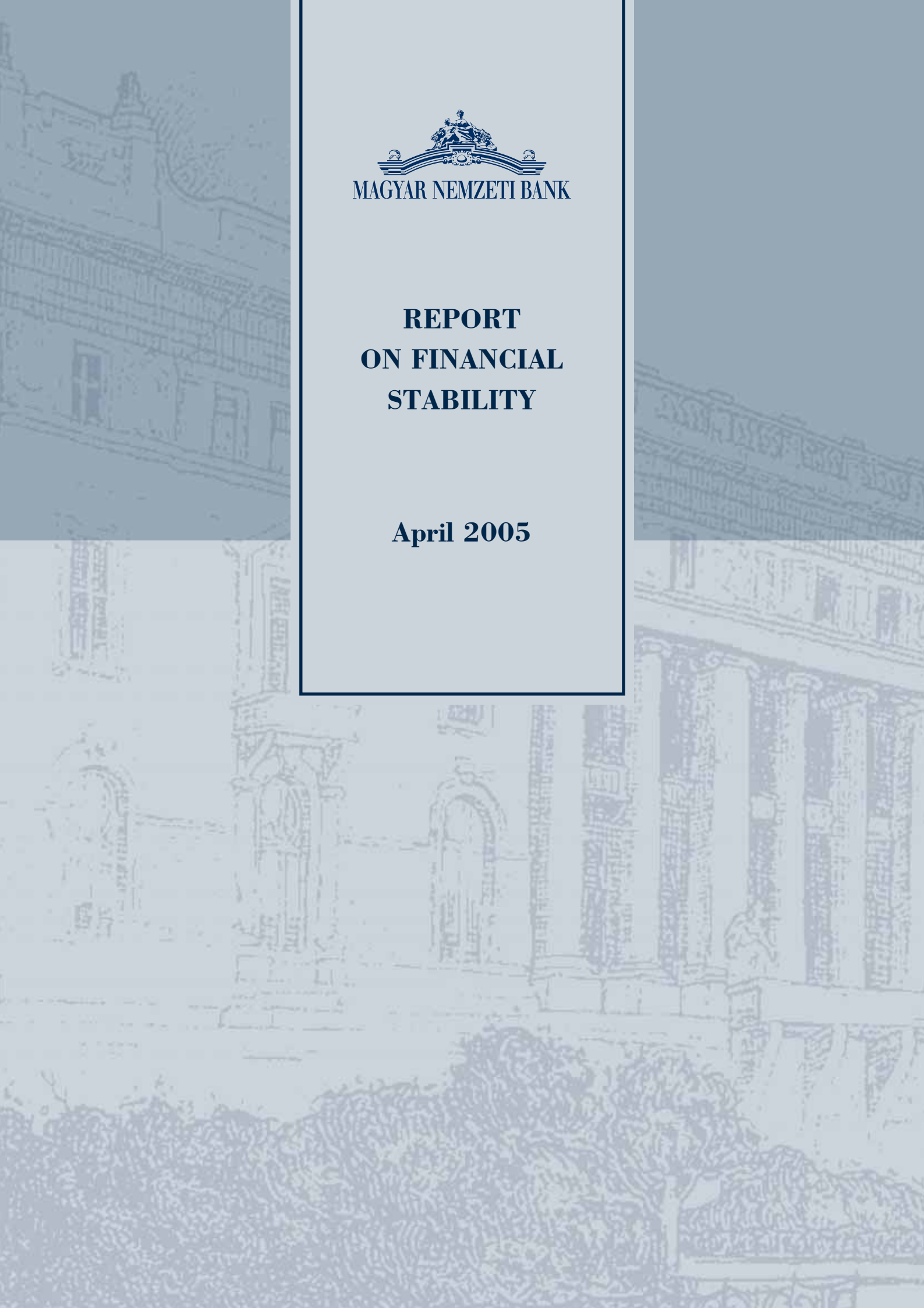

MAGYAR NEMZETI BANK

REPORT ON FINANCIAL STABILITY

April 2005

Report on Financial Stability

April 2005

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Published by: Magyar Nemzeti Bank

Publisher in charge: Gábor Missura

8-9. Szabadság tér, Budapest 1850

www.mnb.hu

ISSN 1586-832X (print)

ISSN 1586-8338 (online)

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

The Magyar Nemzeti Bank's fundamental interest and joint responsibility with other 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.

Contents

Main risks and issues

In recent months, the activity of the financial system has been marked by trends towards greater risks to stability. The operational environment of the financial system is characterised by an economy fraught with imbalances; however, the resultant risks have so far been eased by a benign global investment climate. Closely related to the behaviour of the banking sector, a steady build-up in and an intended assumption of risks are discernible, coupled with banks' outstanding profitability and stable capital position. Over the short and medium term, risks to stability are expected to persist and strengthen in certain areas

Deteriorating outlook for the world economy

The recent deterioration in prospects for the global business cycle represents a significant macroeconomic risk to stability. Economic growth appears to be particularly subdued in Europe, and it should be borne in mind that projected growth of certain EU member states of key importance for Hungarian exports (i.e. Germany and Italy) has been revised down significantly. This may have a negative effect on the growth outlook, profitability and creditworthiness of certain domestic economic sectors in the period ahead.

A sudden change in the favourable interest rate environment in developed markets may pose risks

The historically low levels of yields and risk premia in both developed economies and emerging markets have so far facilitated the management of imbalances and the financing of the deficit for Hungary as well. Developed economies have been operating in an environment of low inflation and interest rates for many years now. One of the most significant risks arising from the external environment is that this favourable interest rate environment in developed markets may change suddenly. The tightening cycle of the Federal Reserve, which began last summer, has not resulted in any significant surprises so far. In recent months, however, uncertainty has grown about the measure of the individual steps to be taken by the Fed and the yield levels its policy rate increases will establish. Consequently, the extremely strong risk appetite in emerging markets in the past two years has abated, and interest rate premia have increased somewhat. In Europe, however, a bleaker outlook for the business cycle has led to the postponement of the anticipated beginning of the tightening cycle.

Global imbalances may trigger correction on the financial markets

The risks to the future prospects of the global economy stem from the high oil prices, the unsustainably high U.S. current account and fiscal deficit and lopsided global growth, i.e. due to weak internal demand in the EU. Global imbalances continue to entail

the risk of a considerable adjustment in the exchange rates of major currencies.

Macroeconomic imbalances still persist

The general government deficit continues to be large. Despite some improvement in the balance of trade in goods and services, the current account deficit is unsustainable over the long term, with no considerable improvement expected in 2005. The structure of deficit financing has become more favourable. But, given the high percentage share of debt-generating items, Hungary's GDP-proportionate net external debt is expected to increase further. This trend represents a risk from two points of view. First, the high level of deficit represents a financing risk, and second, any further delay in substantially reducing the deficit has a negative impact on investors' risk assessment, with the resultant possible increase in risk premia adversely affecting the growth potential of the Hungarian economy.

Due to rapidly decreasing short-term rates, the yield curve has flattened

The improving inflation outlook, a stable exchange rate and a favourable international environment led to a fall in yields at all maturities resulting in an almost flat yield curve. Most market participants continue to expect a nearly flat yield curve and slight movements in the EUR/HUF exchange rate over the longer term as well, while some market participants also have scenarios for significant interest rate and exchange rate movements.

Credit risk mounts in the banking sector

The banking sector is characterized by a dynamic build-up of credit risks both in the corporate and household sectors due to an expansion in loans and a change in their composition.

Changing macroeconomic environment poses challenges

The anticipated slowdown in domestic and external demand and the adjustment to a low-inflation environment represent challenges to market participants. Firms which adjust more slowly to a level of inflation which is lower than previously expected face downside risk to profitability and possible deterioration in their creditworthiness. These factors may increase the losses on the existing loan portfolio. Due to a significant increase in debt burden, the greatest risk in the household sector will be the uncertainty arising from changes in real income in the future.

Lending is accompanied by increasing risk appetite

Banks are increasingly entering into new market segments with higher risks and no credit history, while at the same time loosening their lending standards. The lack of credit histories overarching the entire business cycle represents a key risk factor stemming from structural changes in lending. Consequently, there is a growing risk that banks may be unable to accurately assess, manage

and price the longer-term risks implied in forint and foreign currency loans extended to new client segments (in particular small and medium-size enterprises and households). This may lead to an increase in the proportion of debtors with lower creditworthiness in banks' portfolios. In addition to the uncertainty surrounding the pricing of growing risks, increasingly keen competition is also forcing banks to loosen their lending standards, which in turn may also affect income unfavourably over the longer term.

FX lending is gaining ground, increasing the FX exposure of customers

The correlation between exchange rate risks and credit risks is strengthening, as foreign currency lending is crowding out forint-denominated loans, and thus a possible exchange rate shock may worsen the financial position of foreign currency debtors. From the point of view of stability, it is especially worth noting that the share of foreign currency loans in new loans to both households and corporations is rather sizeable. In particular, the volume of Swiss franc-denominated loans with no natural hedge has been increasing the most dynamically, contributing to an increase in the exchange rate exposure of the private sector. Another risk is that in the case of foreign currency lending – due to the lower amount of instalment per loan unit – even those customers with liquidity constraints may obtain funds who would otherwise be excluded from forint financing.

Decreasing interest rates may result in narrowing margins in the long run

With regard to interest rate risks, we do not consider a lower interest rate unfavourable over the short term, as both the repricing of assets and liabilities and the change in the yield curve tend to improve profitability. At the same time, however, over the longer term we expect that a persistently lower interest rate level will lead to a reduction in the difference between credit and deposit rates, which may affect the profitability of the banking sector unfavourably.

Exceptionally high profitability is partly due to the temporary factors

Despite the aforementioned risk factors, the Hungarian banking sector has been outstandingly profitable for years even by international standards, although this was attributable in part to volatile elements. We consider the growth in commission income due to a spectacular take-off in housing loans over the past few years, the larger dividend withdrawals from subsidiaries and the margin improving effect of higher interest rates in 2004 to be temporary factors. It is important to point out that if transitory factors leading to improvements in profits are incorporated into the profitability levels expected from banks, this may prompt them to take more risks.

Improvement in cost-efficiency is still needed

Efficiency ratios indicate a continuous improvement in cost efficiency, although they still lag considerably behind the average of developed countries. From a stability perspective, we consider it to be important that banks counter the negative effect on profitability of a decrease in the interest margin, arising from lower interest rate levels and strengthening competition, by improving their cost efficiency in the future.

The capital adequacy of the banking sector is stable

The stable level of regulatory capital is mainly due to internal capital accumulation attributable to modest dividend payments to owners and banks' high profitability. The significant growth potential and the outstanding profit margin of the domestic market and regional markets in general play a key role in this and as a result non-resident parent banks realise a greater proportion of their consolidated profits through their subsidiaries in the region. Although the banking system as a whole is sufficiently capitalised, the distribution of capital adequacy is uneven within the banking system, and a number of major banks are operating near the capital adequacy threshold. Thus, due to an expected higher volatility in profitability and capital accumulation, several institutions may grow increasingly dependent on capital support from their parent banks.

Risks assumed by lease companies are increasing

In respect of the activities of non-financial intermediaries analysed in the Special topics section, we consider the risks posed by financial enterprises – in particular those by leasing companies which are especially active in car purchase financing – to be considerable. This is of key importance for the stability of the banking system, as a large number of these financial enterprises operate with a banking background, and thus any losses they incur will be reflected in the consolidated accounts.

Higher risks in the operation of the private pension scheme

The role of institutional investors in collecting household savings is gaining in importance, but we have also identified a number of risk factors in the operation of the pension fund system. These problems are related mainly to shortcomings in the regulations on outpayments and ownership structure; however, risks arising from inadequate corporate governance, low cost efficiency and insufficient supply of information to members also deserve mention.

The stability of payment system is strengthening

The Hungarian payment system is characterised by stable operation and declining risks. As far as the operation of KELER is concerned, we must point out that the MNB initiated the separation of the depository and clearing house functions, which we expect to strengthen financial stability.

Hedge funds play an increasingly important role in the financial markets of the region

With regard to the operation of hedge funds, which is analysed in the Special topics section, we assume that the activity of these participants contributed to the occasional closer co-movement of the forint with the EUR/USD exchange rate. This phenomenon is attributable to the strengthening of global risk appetite and the debt and portfolio structure of the hedge funds.

The special studies in our Report on Stability examine the connections between structural breaks and financial risk management (MNB Working Papers, 2004/11), the systemic risk-related implications of the Hungarian inter-bank market (MNB Working Papers, 2004/10), options and option strategies on the Hungarian market (to be published) and the consequences of the balance of payments deficits (to be published).

1 Macroeconomic and financial market environment

1. 1. International economic environment

1. 1. 1. Prospects for the global business cycle

Following record growth in 2004, projections for the global business cycle also remain favourable for 2005, although the outlook for the major economic regions varies to a great extent. Growth is expected to be faster in the USA and Asia, and slower in the European Union in contrast to the expectations prevailing at the time of the previous report (Table 1-1). In the USA, last year's growth rate - which was outstanding even taking a perspective of several decades - is likely to be repeated this year as well. In its annual report to the Congress in February the Federal Reserve projected growth at slightly below 4% for 2005 and around 3.5% for 2006. Data for March indicate even better figures. This robust growth in the USA is fuelled by internal demand. Against a backdrop of flat and low yield curves, the large budget deficit was easy to finance prior to the rise in the Fed's policy rate in February. Due to moderate credit risk premia, the corporate sector also had easy access to external financing. Until recently, thanks to low interest rates, US households' disposable income was high despite their high level of indebtedness. Insufficient domestic savings and subdued external demand for USD-denominated instruments has led to a large current account deficit in the USA.

Growth in the Asia Pacific region is expected to remain brisk, though somewhat less so than in 2004. China and India, the two most populous countries, are the two major contributors to vigorous growth in the region. The earlier favourable outlook for Japan proved to be short-lived. Despite last year's stricter economic policy, there is still a significant risk of the Chinese economy overheating. One of the risk factors stemming from global imbalances is whether or not the relevant countries in the region will adhere to their export-oriented growth strategy. The basic underlying principle of this strategy is that, despite huge net exports, they prevent their currencies from appreciating vis-à-vis the US dollar through central bank purchases of inflowing USD-denominated instru-

Table 1-1

Projections for the global business cycle

Expected GDP growth, %

	USA		EU-25/EMU-12		Asia[1]	
	2005	2006	2005	2006	2005	2006
European Commission	3.6	3	2.0/1.6	2.3/2.1	7.1	7.1
ECB			1.6 [2]	2.1 [2]		
IMF	3.6	3.6	1.6 [2]	2.3 [2]	7.4	7.1
Consensus Economics	3.6 3	3.4 [3]	1.9 [4]	2.1 [4]		

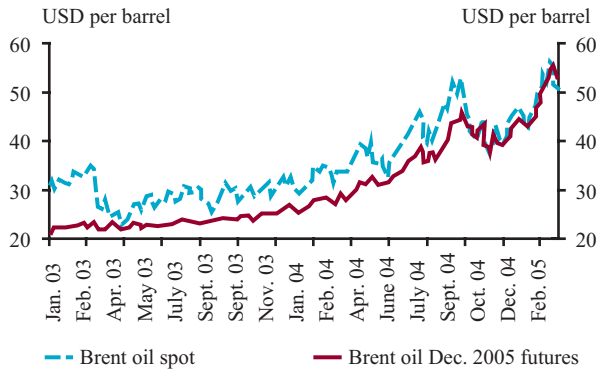
[1] Asia, excluding Japan, [2] EMU-12, [3] USA and Canada, [4] Western Europe (16 countries, EU-14, excluding Luxembourg, plus Switzerland and Norway).
Sources: European Commission: Economic Forecast 2005, IMF: World Economic Outlook, April, 2005 and Consensus Economics.

ments. In essence, the Asian foreign exchange reserves thus accumulated finance the US current account deficit.

Forecasts in Europe in the spring suggest more moderate growth in 2005 than they did last autumn. Both IMF and ECB expert forecasts for the EMU as a whole have deteriorated slightly, with the mean value edging down from 1.9% to 1.6%. Growth projections for 2005 have been revised down even more considerably in the case of Germany and Italy. Thus, the performance of Hungary's two most important trading partners will lag well behind even the EU average. Growth remains fragile in Europe, as domestic demand is hardly growing due to households' heightened cautiousness and the corporate sector's reticence about fixed investment. While the prevailing favourable business cycle facilitates economic growth in Europe, the current rate of growth in domestic demand does not allow for the full utilisation of growth potential in the region. This, in turn, means that growth in Europe remains exposed to developments in the global business cycle to a large degree. A further weakening of the US dollar and a slowdown in US and Asian growth may threaten net exports, which is currently the only positive contributor to growth in Europe.

Chart 1-1

Brent crude oil prices per barrel in USD in the spot and forward markets



Source: Reuters.

Strong economic activity has boosted demand for oil, and it increasingly appears to be the case that this level of demand is accompanied by capacity constraints. Consequently, global oil prices have been rising sharply since the end of 2004 (see Chart 1-1). Over the past few months, market analysts have been debating as to whether rising oil prices can be ascribed to genuine capacity constraints or are due to speculative market behaviour anticipating higher future prices. Based on the data published and statements made by OPEC in February, there is general consensus that, given the unchanged standard crude oil quality, only limited additional capacities for production and distribution are available. As the expansion of capacities is time-consuming, the increase in oil supply will struggle to keep up with increased demand. For the time being, however, demand fuelled mainly by robust growth in the USA and Asia has not responded too keenly to higher oil prices. According to current expectations, this will remain the case in the future, and thus market participants will need to accommodate to a level of demand that leads to capacity constraints and, hence, to permanently higher and more volatile oil prices in the long run as well. This view is also corroborated by developments in oil futures prices (see Chart 1-1). Oil futures prices are, as a rule, lower than spot prices. However, since early 2005 the two have been identical. The risk remains that inflationary pressure from permanently high oil prices will also dampen growth in regions which are the engines of global growth. The losers of the current oil market situation are likely to be those oil importing countries, mainly in Europe, where the foundations of growth were not solid anyway up to now.

Several observers point out that asymmetries in global growth could be corrected with the lowest degree of risk by way of a concerted change in the economic policies of large regions. In order for

such a correction to be made, the USA would have to make more intensive efforts to reduce its twin deficit, and internal demand would have to boost growth more substantially in Asia and Europe. If such contemporaneous adjustments are not made, unbalanced global growth will enhance the risk of a spontaneous bumpy adjustment, which in turn would result in a slowdown both globally and regionally.

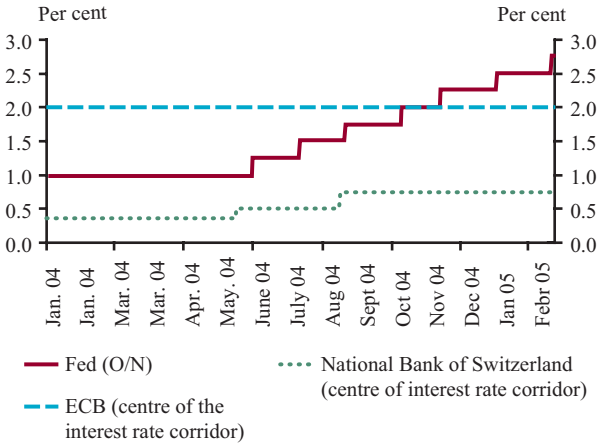
1. 1. 2. Global financial markets and financial risks

Global financial markets continue to anticipate that, to the extent that favourable outlook for the global business cycle persists, major central banks will switch from their current accommodating base rates to higher, more neutral interest rates (see Chart 1-2). In both large developed regions and certain Asian countries, e.g. China, the volume of outstanding borrowings is increasing quite rapidly, hand in hand with sharp rises in the prices of financial assets and real estate. Until February and March, relative to macroeconomic fundamentals, long-term interest rates and credit risk premia were unusually low in the USA and also in other developed countries experiencing relatively rapid growth. Regional differences in prospects for the business cycle are expected to affect both the timing and the extent of central bank measures in the major individual regions.

Longer-term yields and credit risk premia were rather low in the USA until February, when they started to pick up. Based on the Federal Reserve's communications, the markets came to the conclusion that, in the light of macroeconomic prospects, the Federal Reserve had deemed prevailing yields in the bond market to be too low. Following the policy rate raise in late March - the seventh in a series of identical raises in the Federal Reserve's

Chart 1-2

Key policy rates of the Federal Reserve, the ECB and the National Bank of Switzerland



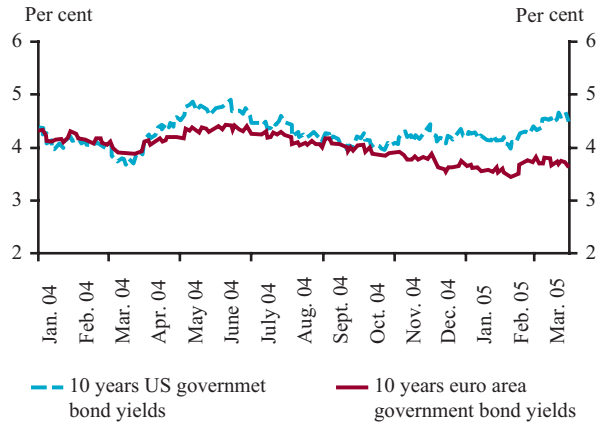
Source: Reuters, MNB.

tightening cycle, which began last June - longer term yields and credit risk premia continued to increase in US markets (see Chart 1-3). Following the increase in its policy rate, Federal Reserve communication became tougher, referring to the danger of inflation, which resurfaced as a component of its communication after several years. Its obvious objective was to avoid the instances of overshooting experienced in the bond market during the tightening cycles of earlier years, while facilitating an increase in longer-term interest rates and credit risk premia necessary for the prevention of a build-up of inflationary pressures. Markets expect the Federal Reserve to aim for a higher-than-previously-expected nominal interest rate at the end of its tightening cycle, and an increase in excess of 0.25% cannot be ruled out. US forward markets expect the Federal Reserve to raise its policy rate by a further 1% before the end of the summer in 2005. By contrast, in Europe the ECB may put off raising its base rate due to lower-than-expected growth.

Possible changes to the management of international reserves in the Asia Pacific region have become a global risk factor over the past few

Chart 1-3

Yields on long-term bonds in the USA and the euro area



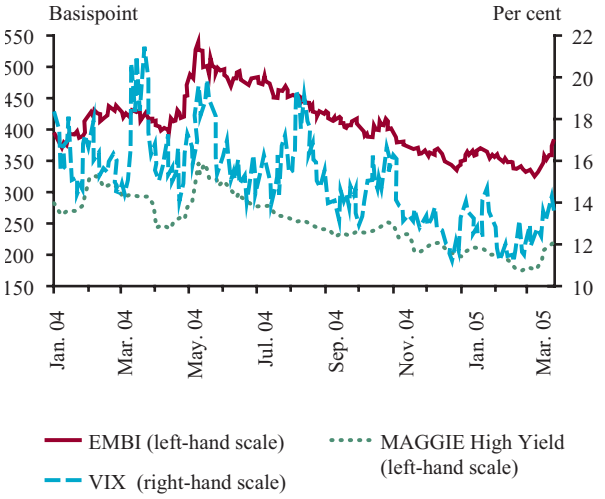
Source: Reuters.

months. High export revenues and intervention policies aimed at preventing the appreciation of domestic currencies vis-à-vis the US dollar have generated a massive increase in central bank reserves in Asia. By investing their USD reserves into US government bonds, central banks in Asia have become lead buyers of US government bonds. The dilemma facing the Asian central banks concerned is how they can diversify their reserves, or at least the future growth increment in such reserves, to mitigate their exchange rate losses in a manner that would prevent the US dollar from depreciating further. News of possible diversification of central bank reserves in Asia early this year made markets jump. Central bank behaviour in Asia and a sudden change in expectations concerning such behaviour will remain a near-term risk factor, which may speed up rise in long-term US yields, while simultaneously weakening the dollar.

Emerging markets were characterised by a mix of rapid economic growth, improving fundamentals and historically low yields prior to February and March 2005 (see Chart 1-4). When the Federal Reserve first raised its policy rate during the current tightening cycle, i.e. in the late spring and early summer of 2004, markets were concerned about an imminent deterioration in historically benign borrowing conditions for emerging countries. Their worries were based on experience from former cycle reversals. Since then, although there have been a few minor adjustments to the trend decline in emerging market interest premia, no radical change has occurred in investor sentiment. The latest adjustment came after the Federal Reserve increased its policy rate in March, when emerging market yields rose. It remains to be seen whether this mirrors a change to buy-and-hold investors' longer-term strategies or if such a change has yet to occur.

Chart 1-4

Global indicators of risk



Notes:EMBI Global Composite - interest rate premium index of sovereign and quasi-sovereign issuers' dollar-denominated bonds, as calculated by JP Morgan-Chase. MAGGIE High Yield - the interest rate premium index (bp) of euro-denominated government and corporate bonds as calculated by JP Morgan-Chase. VIX - Implied volatility derived from options on the S&P500 indices.
Source: J.P. Morgan-Chase, Standard and Poor's and CBOE.

Many attribute the rising trend in emerging market risk appetite in recent years to structural factors. They argue that mainly institutional savers intend to hold a higher proportion of riskier higher-return securities among their assets than earlier. If structural factors do indeed come into play, capital outflows from emerging markets, triggered by further rises in central banks base rates in developed countries, may be more moderate than in similar

periods in the past (see the section on the role of hedge funds in Special topics).

An acceleration of the tightening cycle in the USA and an overreaction by market participants to either the policy rate increases of the Federal Reserve or a possible acceleration in inflation represent further risks in global financial markets, although for the time being these are not very likely to materialise. Heavy indebtedness of certain segments in the financial sector and of households in several countries also adds to financial risks. Sudden marked adjustments to interest rates entail financial risks for both indebted participants and the banks lending to them. If adjustments to interest rates have negative ramifications for the financial sector in the USA, this may amplify the adverse impact on the business cycle in the USA and globally.

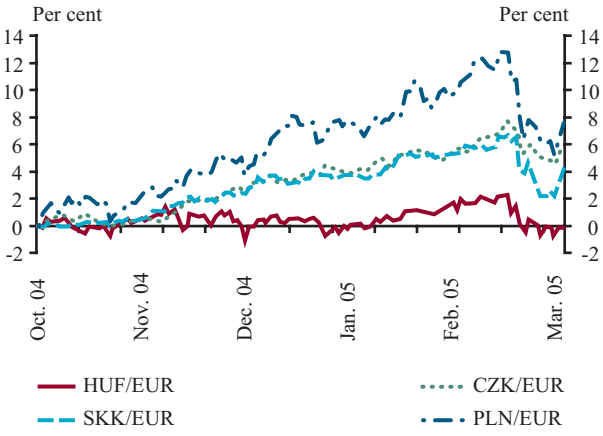
The risks currently discernible in the international environment are particularly grave from a Hungarian perspective. Growth prospects for Hungary's major trading partners are poor and are exposed to developments in the global business cycle more than ever. A sharp rise in long-term interest rates in the USA would hit the global business cycle hard and may also push up emerging market interest premia. In such a scenario investors may turn yet again to macroeconomic fundamentals in emerging countries. Hungary's precarious external balance and high budget deficit have created an investor sentiment which is vulnerable in itself and also in comparison to other countries in the East Central European region.

1. 1. 3. Regional outlook: volatile capital flows in the Central and Eastern European region

In early 2005, a record amount of capital inflow was registered to emerging market equity and bond funds, attributable primarily to rearrangement in the portfolios of dollar-based investors. Record capital inflows also affected the Central and Eastern European region (CEE countries: the Czech Republic, Poland, Hungary and Slovakia) significantly, resulting in marked appreciation pressure on the currencies in the region. Appreciation was the strongest in Poland, while it remained relatively moderate in Hungary (see Chart 1-5). In part, this can be ascribed to the proximity of the strong edge of the forint's fluctuation band and, in part, to the fact that non-resident investors differentiated between the individual countries in the region more sharply on the basis of developments in the external balance indicators, which is also reflected in changes in long-term forward differentials vis-à-vis the euro (see Chart 1-6).

Chart 1-5

Cumulative exchange rate changes in the region



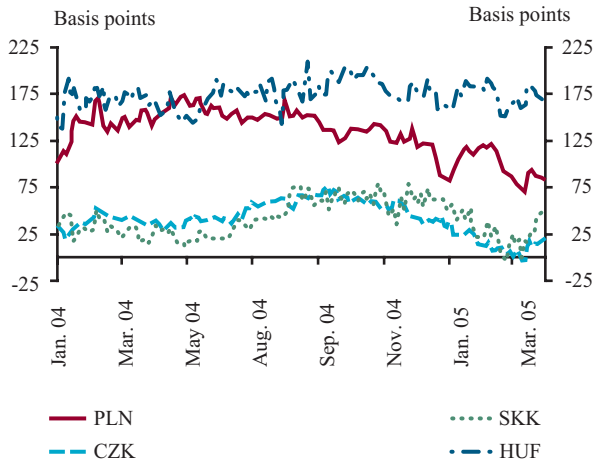
Source: Reuters.

Central banks in the region lowered their key policy rates in order to prevent excessive appreciation of their domestic currencies. In mid-March, consistent with global developments, US dollar-based investors' portfolio capital flows into emerging markets first abated and then changed course, which eased the appreciation pressure on CEE currencies and eventually led to a minor adjustment in the equity and bond markets of the region (see Chart 1-7). The change in the direction of

capital flows was also reflected in global risk appetite indicators.

Chart 1-6

Five-year forward differentials 5 years ahead in the region

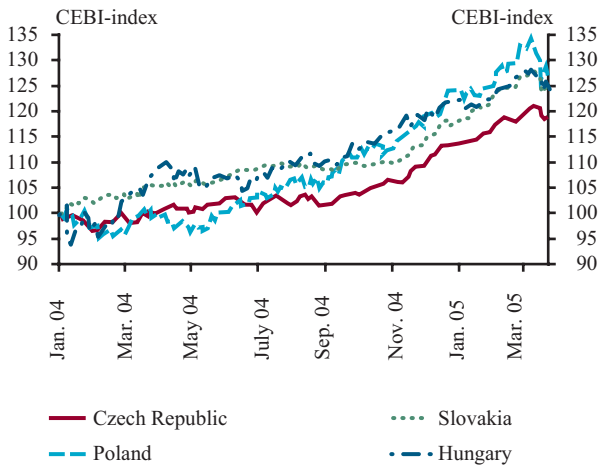


Source: Reuters.

The upsurge in capital flows into the region in early 2005 can be attributed to the fact that as the likelihood of a pronounced medium-term depreciation of the exchange rate of the US dollar vis-à-vis the euro grew[1] the CEE currencies pegged to the euro and relatively high-yield instruments denominated in these currencies became increasingly attractive. Furthermore, fundamental factors are also likely to have added to the appreciation pressure on the currencies in the region.

Chart 1-7

Changes in CEBI indices in EUR



Source: Dresdner Kleinwort Wasserstein.

The current account deficit was low in Poland and Slovakia in 2004, and was fully financed by FDI in both countries (see Table 1-2). Compared to 2003, the current account deficit decreased slightly in the Czech Republic, due to significant improvement in the trade balance and considerable income outflows. No material change occurred in Hungary's high current account deficit. Nevertheless, due to an increasing proportion of non-debt generating capital inflows, the structure of financing became more favourable compared to 2003. This, however, only points to a return to a volume of inflows which was typical in recent years. Despite this favourable change, Hungary's ratio of interest rate-sensitive items financing the deficit of the current account remains the highest in the region.

A further sign of improving fundamentals in the region is that in the second half of 2004 and in particular during the first two months in 2005, substantial disinflation occurred in all four countries due to stronger exchange rates and increasing import competition following EU accession.

It is important to note that the high level of general government borrowing requirement[2] poses a problem in all four countries, especially in Poland and Hungary. However, only in Hungary was government debt slightly above the 60% Maastricht reference value.

According to the assessment of the European

[1] See the section on Global financial markets and financial risks.

[2] In the case of government debt, figures unadjusted for the effect of the pension scheme reform were used. As, based on a 2004 decision by Eurostat, the effect of the pension scheme reform is only allowed to be recognised in the general government deficit and government debt indicators on the ESA 95 basis for a temporary period ending in March 2007, the use of an unadjusted indicator is justified in examining the risks surrounding the timing of the introduction of the euro.

Table 1-2

Current account balances and FDI as a percentage of GDP of the countries in the region

Countries	Current account		FDI	
	2003	2004*	2003	2004*
Czech Republic	-6.3	-5.2	2.1	3.7
Poland	-2.2	-1.6	1.9	2.2
Hungary	-8.7	-8.8	0.6	3.6
Slovakia	-0.8	-3.5	2.1	3.1

**Based on preliminary data.*
Source: National statistical offices and central banks.

Commission, with the exception of Hungary, the above countries have taken appropriate measures to achieve the budget deficit target set in their respective convergence programmes in 2005. The findings of the Commission suggest that the countries concerned are following a credible path of deficit reduction - at least for the time being. Nevertheless, the recent increase in political uncertainty in the Czech Republic and Poland may add to the uncertainty surrounding the achievement of deficit targets.

The increasing role of US dollar-based investors in CEE capital flows indicate that the entire region may be sensitive to fluctuations in the dollar's exchange rate vis-à-vis the euro and changes in US yields. In addition to the fact that the volatility of capital flows in the region over the past few months can be partly ascribed to global factors, improving fundamentals in the Czech Republic, Poland and Slovakia may serve as a safeguard against excessive market reactions to a possible reversal of capital flows. Large current account and fiscal deficits, which have not improved significantly in Hungary, indicate higher vulnerability compared to other countries in the region (see Box 1-1 on bond yields in CEECs).

Box 1-1 Bond yields in CEECs

Recently, the bond markets in CEECs have represented an attractive investment opportunity for many investors. Average yields on Czech, Slovak and Hungarian government securities were nearly twice euro area yields (see Table 1-3). The individual countries in the region offered similar yields to investors in the long run despite recent differences and changes in their economic conditions, the sophistication of their bond markets and their credit ratings. The risk of the individual bond markets is measured by the dispersion of annual yields. The higher dispersion is, the more uncertain expectable yields are. This capital market correlation also held true for this region: higher average yields were associated with higher average dispersion. With respect to yield per unit risk, the Czech and the Hungarian market indicators are nearly identical. In contrast, yields relative to risk in the Polish bond market, offering the highest average nominal yield, were lower.

Translated into euro, the yields earned in CEE bond markets were even higher due to the appreciation of the individual currencies. However, exchange rate fluctuations meant further risks, which is reflected in the markedly higher dispersion of

Table 1-3

Some bond market indices between 1999 and 2004

	Average annual return	Deviation of annual returns	Return/deviation ratio
In local currency			
CEBI - Koruna	8.8%	4.9%	1.8
CEBI - Forint	10.8%	6.0%	1.8
CEBI - Zloty	11.6%	8.4%	1.4
In Euro			
CEBI - Czech	11.7%	9.8%	1.2
CEBI - Hungarian	11.5%	12.2%	0.9
CEBI - Polish	12.3%	17.1%	0.7
CEBI - all	11.8%	13.4%	0.9
iBoxx (in Euro)	5.3%	4.2%	1.3
EMBI+ (in USD)	15.9%	10.6%	1.5
EMBI+ (in Euro)	13.7%	18.4%	0.7

Notes: CEBI is a Dresdner Kleinwort Wasserstein group of indices composed of liquid Central European government securities. The composite CEBI index also includes Slovak bonds from March 2002. iBoxx is an International Index Company group of indices composed of euro-denominated sovereign bonds of euro area countries. EMBI+ is a J.P. Morgan index that tracks the liquid US dollar-denominated sovereign debt of emerging countries.

index yields calculated in euro. If yields in euro are adjusted by dispersion as a risk indicator, the ratio is lower than in the case of yields in home currencies, but with no exchange rate risk.

Yields on euro area sovereign bonds have been substantially lower than those on their CEE counterparts over the past 6 years. At the same time related risks have also been significantly lower, with more favourable yields per unit dispersion than what euro-based investors experienced in CEE bonds markets. Only the Czech indicator approximated the euro area rate. By contrast, the dispersion of yields was strikingly high in the Polish market, which offered the highest yields.

Over the past 6 years US dollar-based investors would have been able to earn the highest returns, while assuming relatively low risks, if had they arranged a portfolio composed of a wide range of emerging market bonds. In contrast, euro-based investors would have had to manage a more unfavourable combination of yields and dispersion due to marked EUR/USD exchange rate fluctuations than if they had invested in CEE bonds.

1. 2. Domestic financial markets

Except for the acceleration in disinflation at end-2004 and in early 2005, in contrast to other countries in the region, no significant improvement has occurred in Hungary's domestic economic fundamentals. General government and current account deficit indicators – both of which are crucial to financial stability – remain high, while growth prospects have deteriorated somewhat.

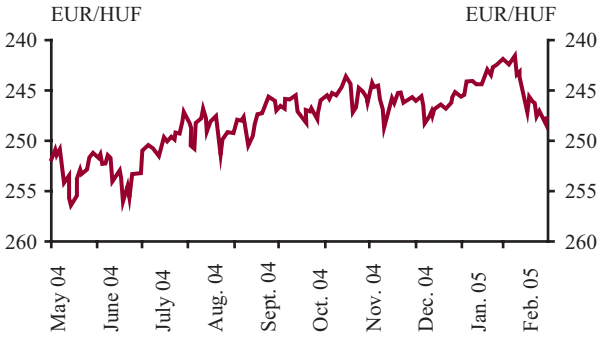
Despite macroeconomic fundamentals, which aside from favourable developments in inflation remain bleak, the EUR/HUF exchange rate - coupled with declining yields over the entire length of the yield curve - showed strong, albeit temporary, appreciation in the period since the publication of the previous Report (see Chart 1-8). For a short while the exchange rate approximated the edge of the fluctuation band. Similar developments in most emerging markets suggest that domestic exchange rate and yield developments are affected predominantly by global factors.

1. 2. 1. Exchange rate and yield developments

Since the publication of the previous Report, the EUR/HUF exchange rate has been driven by US dollar-based investors' expectations regarding the exchange rate of the US dollar against the euro and the Federal Reserve's interest rate path. In the first months of the year, due to heightened expectations of massive weakening of the dollar's exchange rate vis-à-vis the euro and a fall in long-term US yields, there was an upsurge in capital flows into countries with currencies pegged to the euro. As a result, demand for forint-denominated instruments also increased, however, to a lesser extent than what was experienced in other countries in the region. In mid-February long-term US yields began to rise. This, along with the Federal Reserve's raising its policy rate on 22 March, triggered movement in the opposite direction in global capital markets.

Chart 1-8

Exchange rate of the forint against the euro

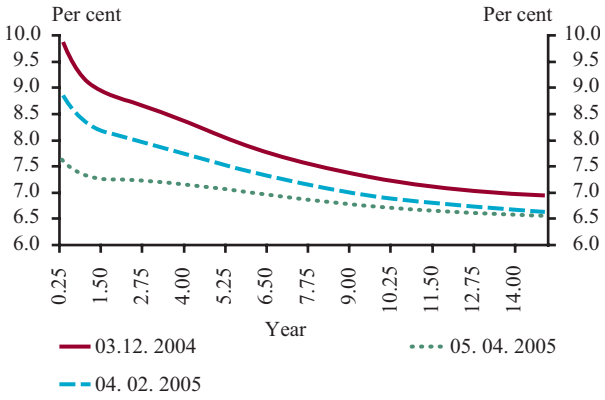


Source: MNB.

The increasingly favourable inflation outlook added to the appeal of forint-denominated instruments during the first two months of 2005, which in turn also fuelled expectations for base rate cuts. In the first quarter of 2005, the MNB continued with its cautious easing cycle, which was also reflected in falling yields along the entire length of the yield curve. The formerly inverse yield curve practically flattened out by early March (see Chart 1-9), while uncertainty began to surround near-term expectations for the interest and exchange rate due to the proximity of the strong edge of the fluctuation band. Furthermore, market information suggests that the EUR/HUF exchange rate closely approximating the strong edge of the band may lead to the closure of various exotic option positions, which may in turn significantly increase the uncertainty about exchange rate developments in the short run (see Box 1-2 on exotic options).

Chart 1-9

Yield curve at various points in time



Source: Reuters and MNB.

In the second half of March, consistent with a rise in long-term US yields and a change in US dollar-based investors' expectations, the EUR/HUF exchange rate inched away from the edge of the forint's fluctuation band, with the yield curve slightly edging up at all maturities. Similar adjustments were seen in the financial markets of most emerging countries.

Box 1-2 The impact of exotic options on the HUF/FX market

Recently, a number of analyses have been published which associate developments in the foreign exchange market with exotic knockout barrier forint options. As these options may affect, at least in the short run, exchange rate volatility and, hence, the stability of the foreign exchange market directly and in a manner that is different from the way plain vanilla options do, we provide a brief overview of the main characteristics of these option strategies.

The difference between a knockout and a plain vanilla option lies in the fact that when a pre-determined price is reached at any time before maturity, it will cause an existing option to cease to exist. Buyers of exotic options thus risk losing all accumulated gains if the exchange rate appreciates significantly. This is indeed why these options are cheaper than their plain vanilla counterparts, and this is what knockout options owe their popularity to.

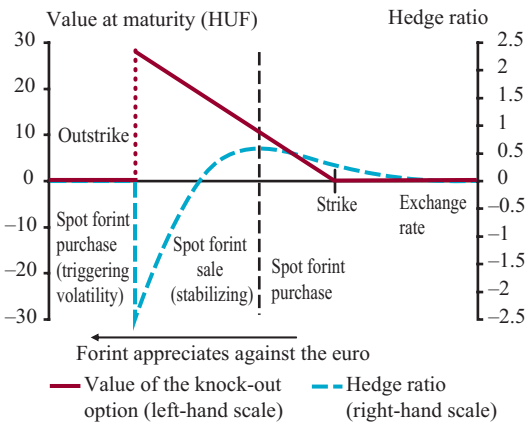
Chart 1-10 shows how the maturity value of a forint knockout call changes subject to the exchange rate. If the exchange rate exceeds the strike price, the payoff of the option rises. If, however, the knockout rate is exceeded at any time before maturity, the option loses its value even if the exchange rate subsequently weakens below the knockout rate.

As a rule, writers of knockout options are large investment banks. Often, they do not conclude these contracts for speculative purposes, but rather, in order to satisfy customer demand. Thus, in most cases they simply seek to hedge the risks that they undertake through the options sold. Applying the hedging strategy customary in option markets, they can offset changes in the trading price of the option by their spot FX position. The problem is that the extent and the direction of the hedge position is subject to the spot rate.

Chart 1-10 also shows a dynamic hedging strategy associated with knockout options. The hedge ratio (delta) denotes the extent and the direction of the position to be taken in the spot market in respect of the given unit of the option sold. In order to hedge against a weak exchange rate that starts appreciating, a long forint position must be opened, i.e. forint must be purchased. Below a certain rate the strategy is just the opposite: forint must be sold at an increasing pace. This is illustrated by reduction in the hedge ratio in the chart (to the left of the broken line). Immediately before the knockout rate is reached, a short forint position must be opened in a volume many times the nominal value of the option, which entails a rapid forint sale. In the case of large volumes, this puts a brake on the strengthening of the exchange rate. When the knockout level

Chart 1-10

Value of a HUF knockout call at maturity and the hedge ratio prior to maturity



is exceeded, the open position must be closed rapidly. This means a one-off large-volume forint purchase, which increases exchange rate volatility.

An alternative to spot hedging is when writers of knockout options conclude hedging transactions in the traditional option market. Although perfect hedging is close to unattainable even through traditional options, writers of knockout options can partially hedge their risks by selling short-term puts. In the proximity of knockout levels the most efficient method of partial hedging is the selling of a short-term put whose strike price approximates to the knockout rate. When a large volume of knockout options is hedged in this manner, the sale of short-term options in a less liquid market entails reduction in options prices and, hence, in implied volatilities. As a consequence, when the knockout rate is approximated, it is often the case that the implied volatility of short-term FX options falls significantly. A marked fall occurred in short-term EUR/HUF implied volatility in February 2005 and November 2004. This can be attributed to easing uncertainty over exchange rate developments and the hedging of knockout options with traditional options. However, subsequent adjustments to volatility confirm that the hedging of exotic options can only temporarily divert volatility from expectations.

As the hedging of knockout options is often very expensive, option writer banks can hedge the risks that they assume only partially. Unhedged options urge them to strengthen, through massive forint purchases, the exchange rate to a level above the knockout rate, which will cause an existing option to cease to exist whereby they can dispose of any potential loss. This renders the exchange rate in the proximity of knockout levels difficult to interpret and forecast, and may even lead to higher occasional volatility and exchange rate overshooting.[3]

1. 2. 2. Mid-term prospects and risks

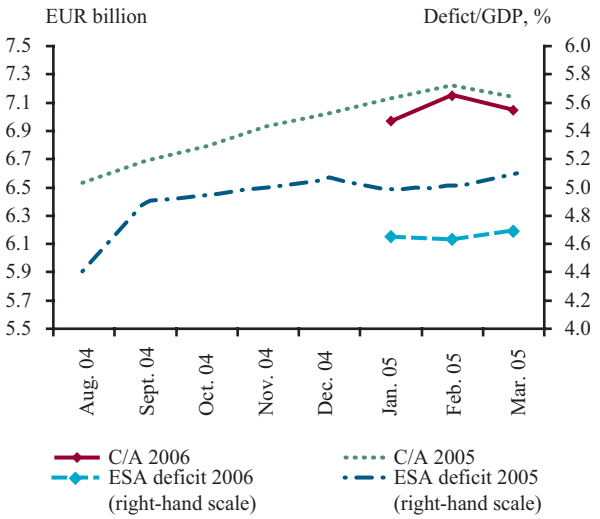
Market participants do not anticipate a substantial improvement in either the general government or the current account deficit in 2005 (see Chart 1-11). Due to the situation that in Hungary the bulk of the current account deficit stems from the general government's high net borrowing requirement and households' low saving position, the latter being attributable to structural factors, improvement in the external balance hinges largely on the realisation of the planned fiscal consolidation and the pace of its implementation.

In parallel with the base rate cuts of the past few months, market expectations regarding the policy rate for end-2005 fell markedly (see Chart 1-12). Analysts polled by Reuters in March expect the base rate to stand at 7% at end-2005. In the light of a 7.75% base rate in March, this suggests that market participants anticipate significant slowdown in the MNB's easing cycle in the future. Expectations for 10-year benchmark yields at end-2005 have dropped by approximately 50 basis

[3] For a detailed discussion of the impacts of knockout options on the market, see Csaba Csávás and Áron Gereben: Traditional and exotic options in the Hungarian foreign exchange market (currently in publication).

Chart 1-11

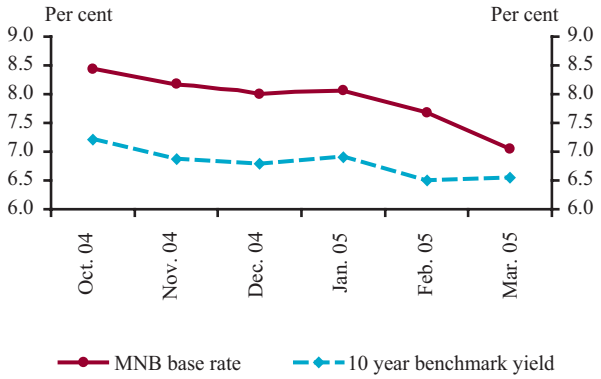
Analysts' expectations regarding the current account deficit and the GDP-proportionate general government deficit



Source: Reuters and MNB.

Chart 1-12

Analysts' expectations for end-2005



Source: Reuters.

points. The sharpest fall was experienced in February, reflecting considerably better-than-expected inflation data in January. Interest rate expectations in March suggested that the yield curve would remain close to flat, with yields between 6.5% and 7% at most maturities.

Over the past few months no substantial change has occurred in expectations for the future evolution of the exchange rate of the forint. Markets continue to deem a slight weakening of the exchange rate to be the most likely scenario. Reuters surveys reveal that expectations for end-2005 have averaged at EUR/HUF 252 to 255 in recent months. At the same time, however, citing the external balance, some (mainly foreign) analysts, do not rule out even more substantial weakening.

Fluctuating sharply, EUR/HUF forward differentials have slightly edged up since December 2004, pointing to a persistently unfavourable and uncertain long-term risk assessment of forint investments. Developments in 5-year forward premia (see Chart 1-6) reflect the prevailing uncertainty surrounding the planned date of the introduction of the euro and the convergence path leading to the fulfilment of the Maastricht criteria. Relatively high forward premia suggest that market participants perceive the risks to the implementation of the convergence path outlined in Convergence Programme of Hungary as significant.

Global factors may play a decisive role in mid-term developments in the exchange rate of the forint against the euro, which is key to financial stability, and in yields on government securities. Adverse changes in such (e.g. a significant strengthening of the dollar or heightened expectations of this and a higher-than-expected rise in the Federal Reserve's policy rate) may prompt the majority of dollar-based investors to return to low-risk dollar-denominated instruments and close their relatively risky emerging market positions. If global liquidity is constrained in this manner, unfavourable macroeconomic fundamentals may yet again gain the upper hand in developments in the EUR/HUF exchange rate and domestic yields.

The increase in the equities index (BUX) of the Budapest Stock Exchange over the past six months and, in particular in January and February 2005, which was consistent with regional trends, followed by a correction in March may also raise stability-related issues. A rapid rise and an equally rapid fall in share prices seem to warrant an analy-

sis of the chances of a potential problem in the system of financial intermediation caused by the possible evolution and bursting of a stock exchange bubble. Our review, however, found that the role of trading prices of quoted shares in the intermediation of financial stability risks is not significant and, thus we do not embark on an in-depth analysis of the hectic price developments (see Box 1-3 on the impact of the trading prices of quoted shares on financial stability).

Box I-3 The impact of the trading prices of quoted Hungarian shares on the stability of the system of financial intermediation

We can approach the risks stemming from the recent rapid rise in the trading prices of quoted Hungarian shares in two ways. One is to investigate whether or not this rise points to overvaluation and, hence, the development of a stock exchange bubble. The other is to assess the risk to the stability of the Hungarian financial system posed by a potential sharp fall in stock exchange prices that would materialise if such a bubble did evolve. In the following, we adopt the latter approach, pointing out three channels through which a sharp decline share prices may threaten the stability of the system of financial intermediation:

- direct risks affecting the income position of the system of financial intermediation;
- indirect risks affecting the income position of the resident customers of the system of financial intermediation; and
- risks arising from the behaviour of non-resident shareholders.

With a stock of HUF 280 to 330 billion in 2004 and a 6%-7% share of the total volume of quoted shares (see Table 1-4), shares held by non-financial corporations may pose direct risk to stability. However, the majority of these shares are held in pension and insurance funds, which can, in effect, be regarded as households' indirect equity ownership. In late February 2005, credit institutions held HUF 18 billion in quoted shares among their securities held for trading and investment securities, and this sum did not exceed HUF 20 billion even when combined with the stock of shares owned indirectly through mutual fund shares. This accounts for a mere 1.2% of credit institutions' share capital and remains below 1% of securities held for trading and investment securities by

Table 1-4

Quoted shares (at market value in HUF billion) in a breakdown by shareholders in 2004

	Q1		Q2		Q3		Q4	
Non-financial corporations	282	7%	323	8%	326	7%	205	4%
Financial corporations	289	7%	278	7%	282	6%	330	6%
General government	275	7%	286	7%	333	7%	384	7%
Households	177	4%	185	4%	184	4%	209	4%
Non-resident sector	3,048	75%	3,121	74%	3,421	75%	4,002	78%
Total	4,070	100%	4,193	100%	4,545	100%	5,129	100%

Source: MNB.

credit institutions. If credit institutions accepted a large volume of quoted shares as collateral for loans, this would represent further direct risk. In reality, the volume of quoted shares used for collateral purposes is not significant: as at end-February 2005, the total value of loans extended by credit institutions against securities collateral was HUF 16 billion, accounting for 0.15% of all outstanding loans. Thus, quoted shares held or accepted as eligible collateral by credit institutions do not represent a significant risk to stability.

The impact of stock exchange prices on the income position of households and non-financial corporations as customers of the system of financial intermediation may represent an indirect risk. As Table 1-4 reveals the proportion of these sectors among the owners of quoted shares is roughly identical to that of financial corporations, i.e. it can be deemed as low. We arrive at a similar result if we examine quoted shares as a proportion of the financial assets held by these sectors.

Table I-5 confirms that the proportion of quoted shares among the financial assets held by non-financial corporations and households is not significant. The volume of both sectors' share portfolio is significantly lower than that of their cash and deposit portfolio as well as other participating interests (i.e. unquoted shares and other equities) and even than that of non-equity securities in the case of households. As households indirectly own approximately HUF 160 to 170 billion in quoted shares through mutual fund shares, insurance technical reserves and pension funds, their overall equity exposure should be around HUF 370 to 380 billion. This hardly amounts to 2.4% of households' financial assets, i.e. it is not significant even if indirect ownership is taken into account. In the light of these stock data and proportions, it is safe to say that indirect risks stemming from stock exchange developments do not significantly threaten the stability of the system of financial intermediation.

Although shares held by the non-resident sector also represent an indirect risk, the character of such risk differs from that outlined above, as it does not stem from a potential change in the income position of the non-resident sector. Tables 1-4 and 1-5 reveal that the non-resident sector which holds 75%-78% of all quoted Hungarian shares is the only sector where the

Table 1-5

Financial assets by sectors

(in HUF billion, 2004 Q4)

	Non-financial corporations	Households	Non-resident sector
Cash and deposits	2,647	6,454	432
Non-equity securities	382	1,294	6,178
Quoted shares	205	209	4,002
Other participating interests	4,919	4,441	8,551
Mutual fund shares	88	777	9
Insurance technical reserves	123	2,394	0
Loans and other receivables	9,604	242	7,511
Total financial assets	17,968	15,810	26,683

Source: MNB.

proportion of shares is significant both among financial assets and compared to other securities. The most important implication of stock exchange price developments to stability could be a frenzied capital withdrawal by the non-resident sector and resultant demand for foreign currency, which in turn may weaken the exchange rate of the forint. The weight of this risk is reduced by BSE's low liquidity. The average daily volume of stock exchange trading only account for 0.3% to 0.4% of the shares held by the non-resident sector, 8% to 12% of the daily turnover of the spot FX market and 2% to 2.5% of the daily turnover of the entire FX market (including FX swaps) even in turbulent times. Given the average low volume of stock exchange trading, the non-resident sector would find it difficult to quickly close its equity portfolio. Furthermore, supposing a strong selling pressure, the low liquidity of the stock exchange would, in all likelihood, make share prices nosedive, which would gradually discourage selling. This is indeed what happened during the Russian meltdown in 1998, when the sale of shares accounted for only 2 percentage of a 40% decrease in the non-resident's sector share portfolio. The bulk of reduction was ascribable to a sharp fall in share prices rather than rapid capital withdrawal.

Based on the foregoing, the trading price of shares does not play a significant role in the intermediation of risks to financial stability. It follows then that in Hungary, in contrast to countries with deeper capital market financial intermediation, the performance of a regular in-depth analysis of developments in and the under- or overvaluation of the trading prices of quoted shares is less significant from the perspective of financial stability.

1. 3 Growth and inflation

According to the projections in the February 2005 issue of the Quarterly Report on Inflation, the growth rate is expected to slow down in 2005 and 2006, with long-term economic growth standing between 3% to 4%. However, the fact that there may be unfavourable developments in the business cycle in Hungary's export markets, as was pointed out in reference to global risks in Section 1.1, poses a downside risk to growth. High oil prices may further amplify this downside risk stemming from external demand.

Compared to 6.8% on average in 2004, inflation is expected to stand at around 3%-4% in 2005. Market analysts' projection for inflation at year-end 2005 and 2006 is 3.5%. Slow labour market adjustment to lower inflation may add to macroeconomic risks. Experience confirms that wages are less frequently adjusted in the domestic labour market than prices are. Furthermore, the practice of backward-looking wage-setting, adjusting to earlier inflation, is prevalent. In a period when inflation decelerates, wage-setting based on backward-looking inflation or inflation projected for 2005 (by market participants) at the end of 2004 may result in a higher-than-expected rise in real wages.[4] A similar outcome may materialise if firms continue allowing for favourable prospects for the global business cycle, i.e. higher profitability, in their wage-setting processes.

Both an adverse turn in the global business cycle and slow nominal wage adjustment may deteriorate firms' income position.[5] Whether this impact on corporate sector profitability is lasting, depends on the speed of labour market adjustment. Recent experience confirms that firms respond by reducing their labour demand rather than nominal wages, which may increase unemployment.

Over the longer term, sluggish wage growth and potentially higher unemployment may have a significant impact on household income and hence consumption. If corporate adjustment occurs in a quantitative manner (i.e. through unemployment), it will curb households' rising consumption demand to an even larger extent. The possible underlying reason for this is that households will, in their consumption decisions, perceive rising unemployment as uncertainty surrounding future income, to which they are likely to respond by stepping up their saving rates. The risk stemming from this is further increased by the fact that household consumption, as a proportion of households' disposable income, has reached a historically high level over the past 3 years.

[4] The forecast by market analysts polled by Reuters for inflation at end-2005 was 4.3% on average in December 2004 and 3.3% in March 2005. Experience confirms that employers and employees involved in wage negotiations are less accurate in their perception of and projections for inflation than market analysts are. Nevertheless, it is a safe bet that at the time of setting wages for 2005 (i.e. at end-2004) their expectations about inflation in 2005 were also higher than a quarter of a year later.

[5] It stands to reason that various risk factors affect different groups within the corporate sector. Any potential slowdown in the external business cycle mainly influences manufacturing, while tougher competition in imports may hit firms supplying domestic markets and trading firms hard. See Section 2. 1. 1.

1. 4. External balance

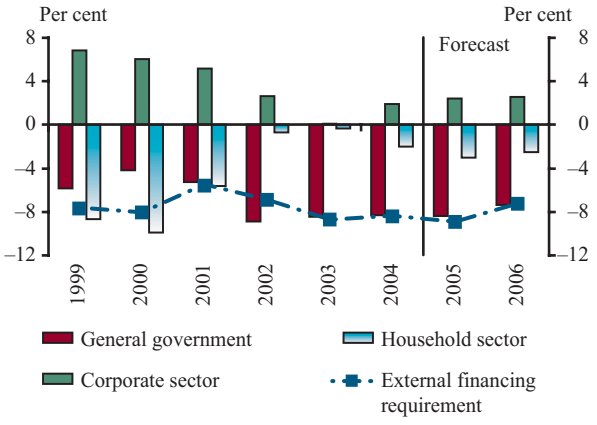
1. 4. 1. Developments in the external balance

Of all macroeconomic trends, developments in the external balance represent the highest risk over both the short and the medium term. With regard to the external balance, the Hungarian economy continues to follow a path that is unsustainable over the long term. Once again, the country's GDP-proportionate external borrowing requirement did not decrease substantially in 2004. Nor is the external balance expected to improve significantly in the two years to come (see Chart 1-13). The persistently high general government deficit alone poses a risk to stability, which is further compounded by the fact that further delay in the significant reduction of such also affects investors' assessment adversely. All of this poses a serious downside risk to the exchange rate, yields and volatility.

In 2004, the general government borrowing requirement as a proportion of GDP[6] remained practically unchanged, while 2004 data on the private sector indicate favourable trends. With consumption expenditure accelerating between 2000 and 2003, households' GDP-proportionate net financial savings declined continuously. In response to slow growth, corporate sector investment expenditure fell significantly along with a reduction in the sector's GDP-proportionate net borrowing requirement. Following a trough in 2003, in 2004 households' GDP-proportionate net financial savings rose, while demand for housing loans grew more subdued. Corporate fixed investment activity also gathered momentum. As a result, although private sector borrowing requirement did not decrease, there was a favourable shift in the structure of financing the current account deficit from the perspective of the vulnerability of the forint.

Chart 1-13

GDP-proportionate financing capacity of the individual sectors



Note: Consistent with the Quarterly Report on Inflation, our projection is for 0.6 percentage point reduction in the ESA deficit in the case of the general government in 2006, which is in keeping with the convergence path.
Source: MNB.

1. 4. 2. The structure of financing

A favourable change in the private sector's saving/investment balance was also reflected in the structure of financing the current account deficit. Along with a rise in investment expenditure, non-debt generating direct capital and equity investment rose vigorously. Following a trough in 2003, in 2004 the ratio of non-debt generating net items to the borrowing requirement rose above 55%, a favourable turn from the perspective of the

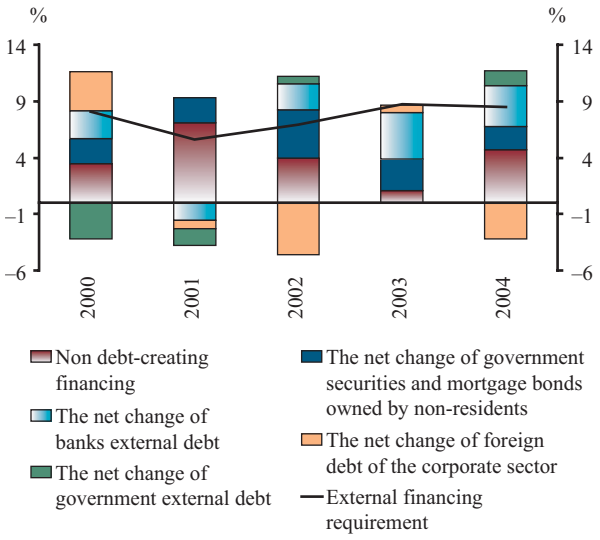
[6] General government borrowing requirement means the SNA deficit of general government consolidated with the MNB (government budget + local governments +ÁPV Rt. + quasi-fiscal activity) on an accrual basis.

assessment of vulnerability. To a great degree, this is attributable to a rise in the volume of direct capital and equity investment in Hungary. However, domestic firms' regional direct investment also fell below the 2003 level.

A rise in the proportion of non-debt generating financing and appreciation of the exchange rate of the forint led to a marked slowdown in the accumulation of external debt in 2004. There was also a major shift within debt-generating financing items. Corporate sector net external debt declined steadily in the course of the year, which - in addition to domestic financing gaining ground - can be ascribed to the fact that firms in foreign ownership replaced credit financing with direct investment. The increase in credit institutions' borrowing abroad (see Chart 1-14) can be traced back to the fact that it is the system of financial intermediation that borrows abroad in order to satisfy net demand for foreign currency loans by resident households and firms with no direct access to external funds.

Chart 1-14

GDP-proportionate external borrowing requirement and the structure of financing



Note: The breakdown by sectors complies with the balance of payments classification of the MNB. General government net borrowing also includes changes in the foreign exchange reserve.
Source: MNB.

Within credit institutions' foreign currency loans to residents, the proportion of loans to households rose conspicuously. Dynamic foreign currency lending to households generated significant and steady forint demand in 2004. The sector's foreign currency indebtedness led to a marked rise in households' exchange rate exposure, which meant that the bulk of exchange rate risks associated with increasing external debt were assumed by households. Therefore, any change in the sector's behaviour may affect both the exchange rate and yields.

1. 4. 3. Risks implied in developments in the external equilibrium and financing

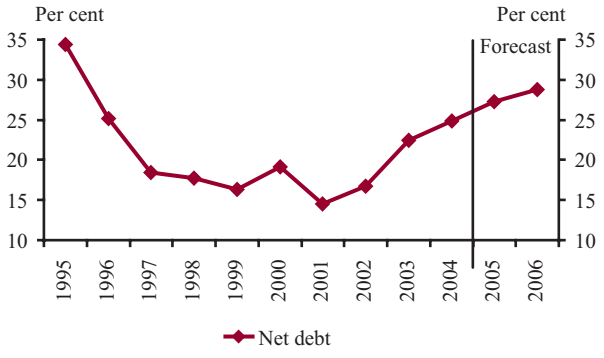
We assume that the trends seen in the private sector in 2004 will resume in the two years to come. Households' GDP-proportionate net financial savings are likely to further increase, although at a decelerating pace. By contrast, along with slower expansion in investment expenditure, firms' borrowing requirement may edge up slightly. Thus on the whole, the private sector will exert a close-to-neutral impact on the external borrowing requirement. As a consequence, a fundamental requirement for reduction of the external deficit will be a reduction in the general government's overall borrowing requirement. However, our projection shows that the more restrained fiscal policy planned for 2005 will only reduce the fiscal deficit. At the same time, due to a significant rise in quasi-fiscal investment under PPP arrangements, the general government's overall borrowing requirement will not deviate from its 2004 level. As a result, fiscal policy is unlikely to contribute to a reduction in the external borrowing requirement in 2005. With a slight increase in net EU transfers, the GDP-proportionate capital account surplus

may increase slightly. This increase, however, is expected to remain below 1%. The GDP-proportionate current account deficit is thus likely to decline slightly. Nevertheless, the euro deficit may increase further, which in turn may impair the risk assessment of the forint market. All reductions in external imbalance in 2006 will hinge on the implementation of the fiscal tightening outlined in the convergence programme.

In respect of the external borrowing requirement, the most serious near-term risk lies in developments in the general government's borrowing requirement. If fiscal policy remains unchanged due to determinations, the sector's borrowing requirement may increase further, which - in addition to causing a further rise in external borrowing requirement and net debt - will also undermine the credibility of economic policy. This impairs risk assessment, and increases exchange rate and yield volatility.

Chart 1-15

GDP-proportionate net debt



Note: The projection is based on the central path outlined in the Quarterly Report on Inflation.
Source: MNB.

In the coming 2 years, the country's GDP-proportionate net debt is expected to grow further (see Chart 1-15). Ultimately, there are three factors that influence changes to whole-economy external debt: the volume of external borrowing requirement, the structure of financing the deficit and, through revaluation, the exchange rate of the forint. Given a downturn in the business cycle and firms' stable GDP-proportionate net borrowing, the importance of the role of non-debt generating items in financing is unlikely to grow further. A high external borrowing requirement and a continuously large proportion of debt-generating financing foreshadow a further rise in GDP-proportionate net debt in the coming two years. Our analysis is based on the assumption of an unchanged exchange rate and a stable level of non-debt generating financing. It should, however, be borne in mind that risks arising from the exchange rate and the structure of financing point to a flare-up in debt, although we did not quantify the risks stemming from such factors. Rising net debt may worsen the assessment of vulnerability.

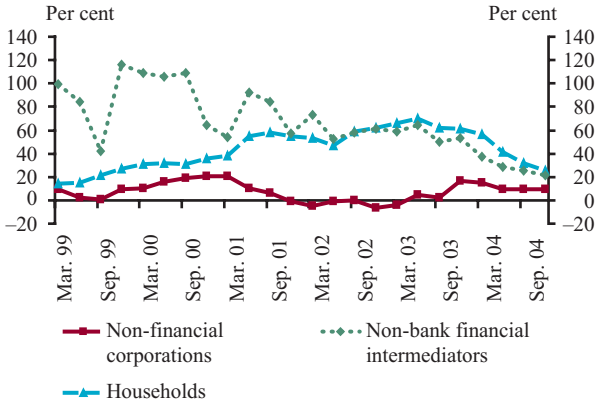
Despite the significant imbalances, market participants' confidence in the forint has not declined, due to several factors. In addition to a high interest rate differential, the introduction of the euro has served as a guarantee for investors that the general government borrowing requirement and, through it, the country's external borrowing requirement may fall to a sustainable level. Growth and exports, vigorous even by international standards, have also contributed to preserving investor confidence. Prudent debt management in earlier years, a reduction in the proportion of foreign exchange debt before 2003 and an increase in the average duration of financing have rendered debt less sensitive to interest and exchange rate changes. A relatively low level of US dollar and euro yields and a strong global risk appetite were also beneficial to developments in debt, and, overall, led to reduction in the GDP-proportionate interest burden. A change for the worse in these factors may dampen investor confidence in the forint, which in turn may increase the vulnerability of the currency.

2 Stability of the banking sector

Hungary's banking sector[7] continues to be characterised by dynamic growth and stability in terms of profitability and capital adequacy. However, an increase in credit risks and certain market risks has also observed.

Chart 2-1

Annual real growth rate of outstanding borrowing by the private sector

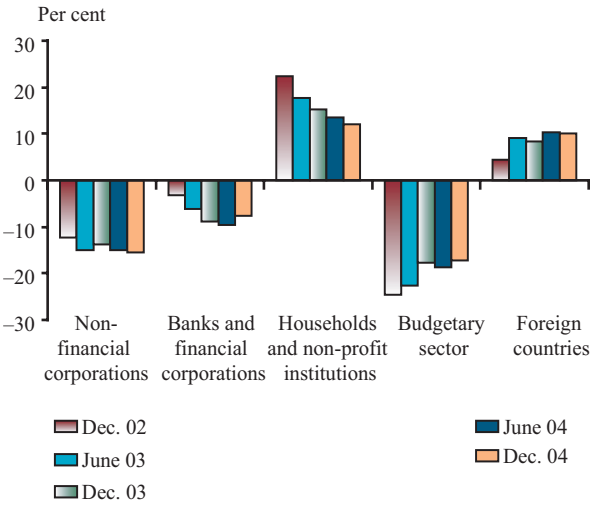


Note: GDP deflator was used for calculating the real rates.
Source: MNB.

Due to vigorous lending to the private sector, financial deepening and the spectacular growth in the balance sheet total continued in 2004 (see Chart 2-1). Albeit at a slowing pace, the banking sector's exposure to non-bank financial intermediaries, non-financial corporations and households continued to increase significantly. The decline in growth rate was especially considerable in the case of households. Banks financed the continuing strong credit growth of the private sector by issuing mortgage bonds, reducing government securities holdings and raising funds from abroad. In accordance with the trend seen in previous years, the net borrowing requirement of non-financial corporations vis-à-vis the banking sector continued to increase, and the net financing capacity of households vis-à-vis the banking sector continued to deteriorate (see Chart 2-2). However, one noteworthy change in 2004 was that a significant portion of new loans to companies and to households in particular was extended in foreign currency. Therefore, while the net borrowing requirement of the non-financial private sector increased, its net foreign currency exposure against the banking sector became larger. The dual nature of this trend may be considered even stronger, if we take into account that the private sector is also financed indirectly by the banking sector, through non-bank financial intermediaries.

Chart 2-2

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



Source: MNB.

[7] In accordance with earlier practice, the MFB (Hungarian Development Bank Ltd.) and the Eximbank (Hungarian Export-Import Bank Ltd.) are excluded from the analysis of Hungary's banking sector.

2. 1. Credit risks

The banking sector is characterised by the dynamic build-up of lending risks, and this trend is expected to continue in the short and medium run as well. Risk-taking vis-à-vis both the corporate and household sectors is increasing, due to supply and demand factors alike.

Through the deterioration of the corporate sector's financial position, the faster-than-expected slowdown in external demand and a lower inflationary environment may increase the risks in banks' existing loan portfolio. The income position of households may improve in the short run due to higher-than-expected real income growth in the event that companies fail to accommodate flexibly to the new circumstances in the labour market, but it may also change for the worse in the medium run, if unemployment rises and real growth rate of income slows.

Simultaneously with loosening their lending standards, banks are entering new market segments with higher risks and no credit history. As competition is becoming increasingly fierce, adequate management of longer-term risk of credits to 'retail' customers (SMEs and households) may become more and more difficult for banks. Another important risk factor is that within the private sector, in the case of both households and companies, foreign currency-denominated loans have a significant share (over 50%) in newly granted loans. Moreover, it may carry an additional risk that in the case of foreign currency lending even those customers with liquidity constraints who would otherwise be excluded from forint financing might obtain funds.[8]

2. 1. 1. Non-financial corporations

Unfavourable income prospects

As mentioned in the general macroeconomic assessment, in the past period the corporate sector was decisively affected by both the slowdown of external economic activity and disinflation, which was quicker than expected by economic agents. In the tradable sector, wage growth declined to a lesser extent than the growth rate of consumer prices, and thus the relative cost of labour use increased. The downturn in external economic activity resulted in declining growth in output of both manufacturing and market services starting as early as the third quarter. Increases in wages significantly exceeding consumer price inflation and weaker external economic activity are expected to continue in 2005 as well, and thus subdued demand and growing cost-push inflationary pressure together may result in a deterioration in corporate sector profitability. The extent and duration of such depend on companies' flexibility in adapting to labour-related cost increases, i.e. if they are able to preserve their profitability through wage cuts and labour adjustment. Due to existing labour market rigidities this adaptation may prove to be insufficient. Nevertheless, a fall in profitability on the aggregate level is still not inevitable, as companies exhibiting the weakest profitability will go bankrupt or relocate their production to other countries. However, this is more likely to happen only in some industries where

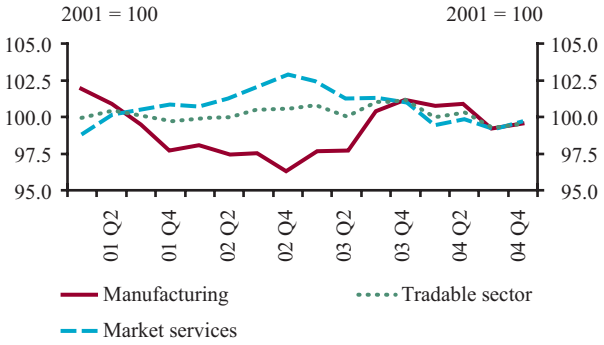
[8] From the aspect of creditworthiness, the ratio of the monthly instalment of the amount borrowed compared to the client's income is an important criterion. In case of the same amount of loan, when extending it in foreign currency, due to the lower instalment there are some clients who attain the coverage ratio determined by the banks, while, due to the higher instalment amount, the same clients are considered uncreditworthy in case of forint loans.

other factors (e.g. import competition) also play an important role.

There was an intense expansion in manufacturing output in 2003, and then, in reflection of weakening external economic activity, a slowdown in 2004. Although the reduction in the number of employed typical of the sector continued, overall productivity growth slowed, and by 2004 it lagged behind the growth rate of labour costs. Deteriorating unit labour costs first caused a stagnation in profitability[9], which had been strongly improving in 2003, followed by a minor decline in the second half of 2004 (see Chart 2-3).

Chart 2-3

Profitability in manufacturing, market services and in the competitive sector



Note: Competitive sector in the narrow sense is calculated as the weighted average of manufacturing and market services.
Source: CSO, MNB.

Output of market services is characterised by a somewhat lower growth than in previous years, while employment is notably increasing. Since early 2003 this has resulted in a moderate but continuous decline in the profitability of the sector, despite the wage growth which is slightly slower than in manufacturing. Within market services, trade is the sector where output growth especially behind the increase in the number of employed. Consequently, productivity has shown a weakening trend since 2002, and the sector's profitability has also been decreasing for a longer period of time (see Chart 2-3). However, it may be a temporary phenomenon, as the rise in employment is presumed to be attributable to the proliferation of shopping centres in the beginning of the decade, which was not followed by an immediate increase of similar magnitude in the value added.

Dynamic corporate lending

In accordance with slackening output growth, despite the slowdown in 2004, the increase in loans extended to non-financial corporations by the Hungarian banking sector may still be considered very dynamic. Beside cyclical factors, an important underlying reason for credit demand was that last year the corporate sector preferred to finance its operation mainly through domestic loans rather than directly borrowing abroad. However, the growth in volume was explained by supply factors as well: in particular, banks' willingness to lend to small and medium enterprises increased. This was also supported by the fact that nearly three quarters of the change in volume of total outstanding loans derived from the rise in foreign currency borrowing, where an increasing role was played by working capital financing for small and medium enterprises. Due to increasing competition, no easing in credit supply pressure is expected for the future. Moreover, banks plan a further loosening of lending standards and conditions for small and medium enterprises in 2005.[10] However, for cyclical reasons,

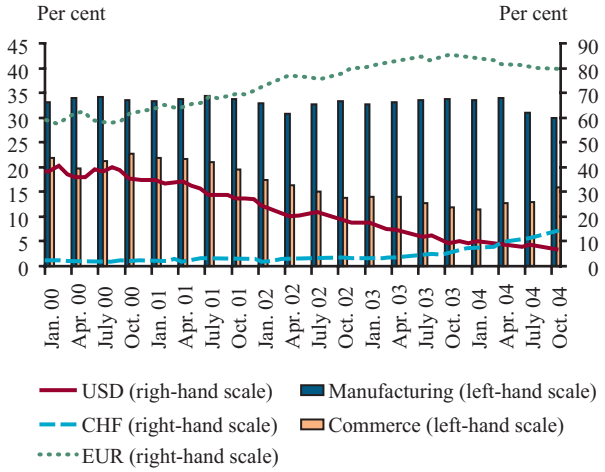
[9] As a concrete measure of profitability the inverse of real unit labour costs is applied here. In order to calculate the real unit labour cost, first the sectoral average labour costs index is divided by the sectoral productivity index (preferably the quotient of the value added produced in the given industry and of the number of employed in the same industry), then it is deflated by the industry's sales prices index (or producer prices index, if sales prices are not available). Thus, the inverse of the index reflects the average changes in sales (producer) prices of a sector's companies vis-à-vis labour costs, i.e. it practically shows the profit made on labour use.

[10] Based on the results of the February 2005 Senior Loan Officer Survey on Bank Lending Practices.

as a result of weaker-than-expected external demand and a slowdown in household consumption growth a fall in non-financial corporations' credit demand is expected. Based on this, a further overall decline in lending dynamics may be projected, at the same time with the further restructuring of outstanding borrowings toward the financing of riskier clients.

Chart 2-4

Distribution of foreign currency lending by domestic banks to non-financial corporations according to denomination and major sectors



Source: MNB

The increase in foreign currency lending to corporations without natural hedge is considered to be a risk to stability. In addition to the euro loans, Swiss franc-based foreign currency loans comprise nearly half of the changes in the banking sector's foreign currency loans. Moreover, foreign currency lending to sectors where companies typically do not have natural hedge is on the rise. It is clearly observable that last year the share of foreign currency loans by the domestic banking sector to the strongly export-oriented manufacturing industry decreased compared to the total stock of foreign currency loans, while in case of the trade sector - which is more sensitive to domestic demand - this ratio started to increase after the continuous decline that followed the widening of the forint exchange rate band in May 2001 (see Chart 2-4). Since it is the trade sector where most SMEs, which do not have any foreign currency income, operate, it is probable that in the period under review banks financed corporate clients without natural hedge to a growing extent. As 15% of the foreign currency portfolio is comprised of Swiss franc-based loans, and these borrowers probably do not have any natural hedge, in the case of at least this proportion of the foreign currency portfolio the banking sector's credit risk is higher due to the exchange rate risk undertaken by the client. The increase in unhedged foreign currency loans is caused by the interest rate differential, the trust in the stability of the exchange rate, lower instalments compared to forint loans and an increasingly strong supply of foreign currency loans.[11]

Deteriorating portfolio quality

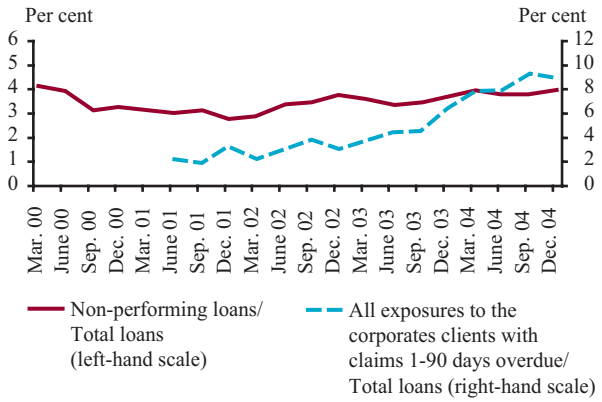
Changes in companies' operational environment and supply factors together have been the underlying reasons for the gradual deterioration in the corporate loan portfolio of the Hungarian banking sector since 2001. In 2004, the ratio of non-performing loans to total outstanding loans increased to nearly 4% (see Chart 2-5). The increase in the ratio of non-performing loans compared to total outstanding loans can be observed at nearly all banks of the financial system, which means that most market players have been unfavourably

[11] In general, it may be established that if a client's risk awareness is high, the choice between forint and foreign currency loans will be determined by the interest rate differential. Then the borrower considers whether the expected depreciation of the forint exchange rate is lower or higher than the interest rate differential. On the contrary, a client whose risk awareness is low will choose the credit with lower interest rate and lower instalment, without taking the exchange rate risk into account. Thus, in this latter case the borrower's decision is influenced by the existence of the interest rate differential itself, rather than its magnitude.

affected by the worsening profitability of companies which have borrowed. In addition to this, all banks have already opened towards new and more risky market segments (i.e. SMEs) and credit instruments (i.e. foreign currency loans). The deterioration in the corporate loan portfolio is expected to continue in 2005 as well.

Chart 2-5

Developments in the quality of non-financial corporate loan portfolio



Note: Data on outstanding loans of companies with overdue payments not exceeding 90 days are only available from June 2001.
Source: MNB.

Weakening external business activity and inflation lower than expected by market participants may have an unfavourable impact on corporate profitability. From this aspect, profit losses and an increase in the ratio of non-performing bank loans may occur in sectors that produce and trade in export goods and/or in sectors that are highly labour intensive.

Due to the growing stability of SMEs[12] and the diversification of lending[13], the financing of small and medium enterprises by banks is considered to be a fundamentally favourable development, despite the fact that compared to large companies SME clients are much more vulnerable due to their size and owing to their short credit history. In addition, the problem of asymmetric information is also naturally greater in this sector. However, it is considered to be a stability risk that - due to the increasingly fierce competition for clients - banks will be less and less able to adequately measure the credit risk and price it in the lending interest rate of new clients, especially small companies.

Due to lack of experience, it may also become rather difficult to manage the greater risks involved in lending in foreign currency. Another source of risk may be that the risk awareness of a significant portion of small enterprises which do not have natural hedge is presumably low, and they have low liquidity constraint as well. Primarily, this is the client group which is excluded from forint financing due to its poor creditworthiness and which becomes insolvent the soonest in case of a more pronounced exchange rate adjustment. Finally, a considerable concentration risk is represented by the fact that a significant portion of Swiss frank-based foreign currency lending and thus a significant portion of foreign currency lending which is unhedged against exchange rate risk is related to only three major banks (for a more detailed discussion, see Box 2-1 on the Polish experiences with foreign currency lending).

In addition to the gradual deterioration in the loan portfolio, another risk is entailed by last year's sudden growth in the number of companies which struggled with liquidity problems and consequently defaulted in payment. While outstanding borrowings of companies with overdue payments not exceeding 90 days amounted to 3% of the total loan portfolio in 2001, they reached 6.5% in 2003, and by end-2004 this ratio was close to 9% (see Chart 2-5). Long-term reasons for this include the increase in payment arrears caused by cyclical factors and the rise in lending to less liquid small- and medium-sized enterprises.

[12] The profitability of the SME sector has increased considerably in recent years.
[13] Banks may diversify their portfolios by extending loans to the SME sector. However, in Hungary this effect occurs only moderately, as many small and medium enterprises are suppliers of large companies or belong the latter's sphere of influence.

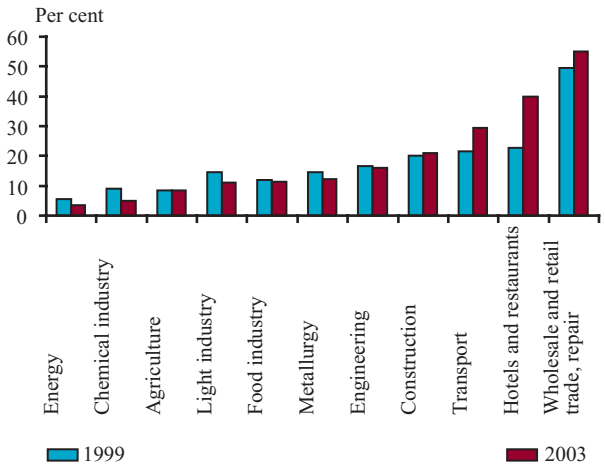
Compared to large corporations, the ratio of trade credits within the liabilities of small- and medium-sized enterprises is much higher. When loans financing goods purchases and services are paid back late or are not paid back at all, payment arrears develops, which leads to a default on obligations. It is usually large corporations that cause liquidity tensions in the sector by misusing their market power when determining payment deadlines or by late payment to their suppliers. Certain large state-owned enterprises which are in an unfavourable financial position also play a role in the development of payment arrears. It is companies in the trade, tourism, transportation and construction sectors where the role of trade credits in financing and thus the risk of formation of payment arrears may be considered high and the trend increasing (see Chart 2-6). Of these sectors trade, tourism and construction are the ones where the deterioration in profitability led to increasing payment arrears last year.

Last year, in addition to cyclical and supply-side reasons two temporary reasons also contributed to the increase in the ratio of debtors with overdue payments. Increasing interest rates on loans resulted in a build-up of the debt burden of corporations, while as a consequence of stricter tax control involving slower-than-usual VAT refunds it was probably the case that numerous small- and medium sized enterprises faced liquidity problems. This year, the expected decrease in interest rates on loans may facilitate the easing of liquidity stresses. However, there is also a counter-effect: economic prospects of sectors with widespread payment arrears continue to be unfavourable.

Examining the developments in value adjustments of the banking system according to sectors, it can be established that last year increases in credit losses in the machine, food and construction industries and tourism were the most significant (see Chart 2-7). From a system stability aspect, the deterioration in the quality of the food industry and construction portfolios and unfavourable prospects for trade deserve special attention, due to the high ratio of these sectors within the total loan portfolio.

Chart 2-6

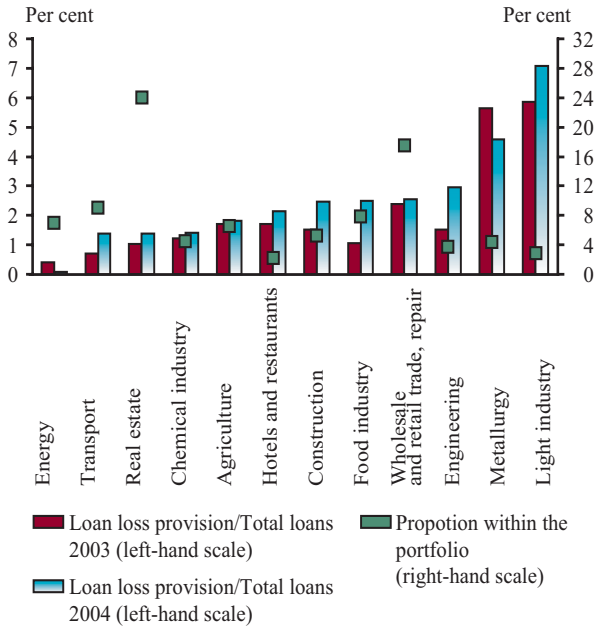
Ratio of trade credits to non-financial corporations to balance sheet total



Source: APEH (Tax and Financial Control Administration).

Chart 2-7

Loss given default of loans to economic sectors by domestic banks and their share in the loan portfolio



Source: MNB.

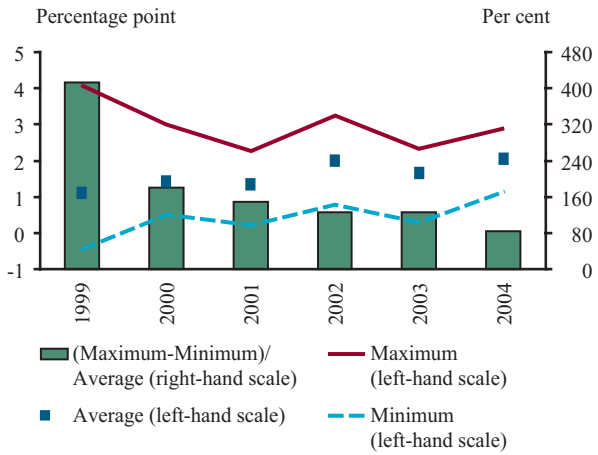
Within manufacturing, the significance of the food industry has declined considerably in recent years, as its gross output has decreased by approximately 10% since the beginning of 2002. In this sector, the decline in employment even exceeded the fall in production. Therefore, the very fast increase in wages in 2001-2002 together with stronger import competition resulted in a considerable erosion of profits. This labour intensive sector's reaction to the above developments was a marked reduction in employment and the number of operating companies, which resulted in a stabilisation of aggregate profitability at a low level after 2002. Gradual consolidation of markets, continuing strong import competition and the above mentioned unfavourable macroeconomic developments may result in a sustained high loss given default of the food industry within the banking loan portfolio in the near future as well.

As a result of a acceleration in household sector fixed investments, construction industry profitability improved markedly in late 2001 and early 2002, but this was followed by a deterioration due to a significant increase in the number of employed and to the slow-down in production growth. Profitability has slightly improved recently, although the winding-up of less profitable and loss-making companies, the increase in payment arrears and some larger construction companies' participation in especially lucrative projects are presumed to be the underlying factors in this regard. A rebound in the commercial property market could result in a sustained recovery in the construction sector. However, in terms of business activity the real estate market shows an ambiguous picture. The first signs of recovery may be felt in the office and retail trade properties market, which is mainly attributable to corporate interest related to the EU accession. Contrary to the office market, signs of a slowdown compared to the preceding continuous expansion may be seen in the housing market. The positive trend is expected to continue in the commercial property market (excluding the construction of residential dwellings), although the recovery is considered very fragile for the time being. It is regarded as a stability risk that some major banks still continue to pursue a very expansive strategy in the field of lending to the construction industry and especially for commercial property constructions. By extending new loans and refinancing existing projects, these banks significantly increase their market shares, which leads to a rise in concentration risk.

Taking expected future trends into account, the deteriorating profit prospect of market services, including especially the trade sector, represents a financial stability risk due to the sector's high share within the bank portfolio. In employment adjustment, compared to manufacturing, the market services sector is probably more rigid, thus it is much less flexible when there is a need to react to macroeconomic risks. Moreover, an additional risk is carried by the fact that within corporate financing the weight of trade credits is the most

Chart 2-8

Changes in difference between the annual average corporate lending rate newly announced by the 10 largest banks and the BUBOR 3-month fixing



Note: Mathematical average was used for averaging.
Source: MNB.

significant here, which increases the risk of the development of payment arrears (see Chart 2-6). Simultaneously with the risk-taking described by the macroeconomic outlook and supply-side developments above, the risk premium included in interest rates on loans is lagging behind. The interest rate gap between short re-pricing corporate loans and 3-month BUBOR fixing gradually increased last year, although its level hardly exceeds the average value of the last four years (see Chart 2-8), while corporate portfolio quality has gradually deteriorated since 2001 (see Chart 2-5). Due to strong price competition banks covered their risks partly by raising non-interest income, fees and expenses as well. The increasing price competition of recent years is well illustrated by the gradual narrowing of the difference between the highest and lowest interest rates on newly granted loans, i.e. the decrease in the relative difference. Based on the above, increasingly fierce price competition in the corporate credit market might contribute to an inadequate pricing of risks.

Box 2-1 Polish experiences in foreign currency lending[14]

From a financial stability aspect, we devote special attention to the risks involved in foreign currency lending in Hungary. As far as international experience is concerned, Poland may be considered a guiding example, because, similarly to Hungary, the ratio of foreign currency lending is high, the difference between euro and domestic interest rates is significant, and market participants have negative experience due to the considerably depreciation of the zloty.

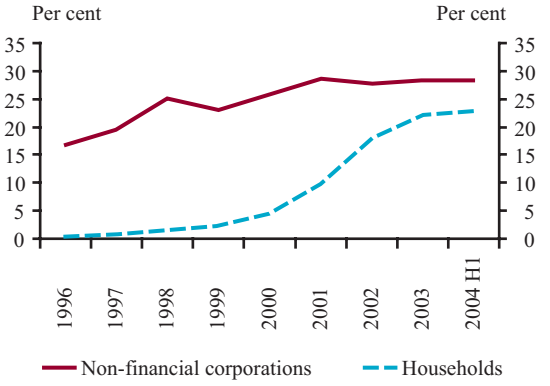
Foreign currency lending both to corporate and household clients quickly became widespread in the Polish banking sector in the beginning of 2000, following the crisis in Russia. In case of clients with natural hedge it was the strengthening export sales, while in case of clients without hedge, especially in households, it was the low financing costs that boosted credit demand. On the supply side, this process was supported by Polish banks' market-building efforts and their easy access to foreign funds. In the period under review unhedged currency loans for home purchase to households increased at the fastest rate.

However, in 2003, the dynamic expansion of foreign currency lending was disrupted due to the significant depreciation of the zloty (see Chart 2-9). After 2003, the slowdown in foreign currency lending continued in 2004 as well. The fall in the demand for foreign currency loans was caused by the increasing risk awareness of clients, the steadily low inflation and the marked decline in the difference between zloty and euro interest rates. The drop in the stock of foreign currency loans was also explained by the conversions between existing foreign currency and zloty loans.

At the same time, not only clients, but banks also became less tolerant towards risks. A more restricted loan supply and

Chart 2-9

Private sector foreign currency loans compared to total credit



Note: Developments in loans outstanding excluding exchange rate effect.
Source: NBP.

[14] This box is based to a great degree on the following publications of the Narodowy Bank Polski: Financial Stability Report (2002-2003), Financial Stability Review (first half of 2004), Summary Evaluation of the Financial Situation of Polish Banks (1998-2003, first half of 2004).

stricter lending standards and conditions contributed to a decline in lending. Financial institutions required additional collateral and were willing to finance only those companies and households where cash-flow and disposable income provided satisfactory cover even in the event of an additional 15%-30% depreciation. This trend was strengthened by the recommendation issued by the supervisory authority as well, which called on banks to examine the exchange rate exposure of foreign currency borrowers in a more detailed manner than previously and to take into account the revealed risks in client rating and pricing.

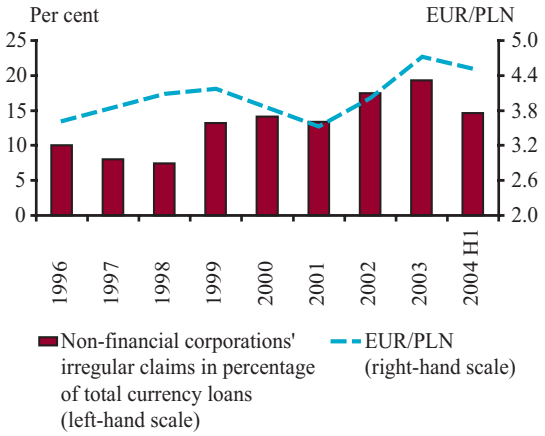
According to Glogowski's and Zochowski's empirical research (2003)[15], in 2002-2003 the annual deterioration in portfolio quality deriving from the 30% depreciation of the exchange rate of the zloty reached 0.3% of the balance sheet total and nearly one-third of pre-tax profit. Although the depreciation of the zloty and thus the increase in the debt burden caused a significant loss in profit, it did not lead to any significant damage to the Polish banking sector. First, this is due to the fact that contrary to the Russian crisis, which affected the total exposure of banks in 1998 and 1999, the depreciation of the zloty in 2002-2003 only impaired the quality of the foreign currency portfolio. Second, in 2004, the vigorous economic recovery and the rebound of zloty compensated for earlier negative effects (see Chart 2-10). Third, since the Russian crisis the Polish banking sector has become much more resistant to shocks.

Nevertheless, the massive depreciation of the zloty affected the profitability of the banking sector not only through the deterioration of the portfolio, but also through the demand for foreign currency loans. In 2003, corporations' demand for foreign currency loans increased, despite the growth in the debt burden of foreign currency debtors. The negative effect of the weakening of the exchange rate was counterbalanced by favourable business conditions, improving competitiveness due to the depreciation of the zloty and the increasing profitability of exporters. On the other hand, households' demand for foreign currency loans declined due to the exchange rate depreciation and the decrease in imported consumer goods.

Based on the Polish experience, a significant exchange rate depreciation in Hungary would probably lead to a sudden deterioration in loan portfolio, a decline in households' credit demand and thus to a considerable fall in profit of the banking sector. A decline in Hungarian households' foreign currency loan demand would also have a negative impact on exchange rate and yields through a shift in the financing structure of the high current account deficit. The likelihood of emerging financial instability depends on the extent and duration of a possible forint depreciation.

Chart 2-10

Portfolio quality of foreign currency loans and exchange rate changes



Source: NBP.

[15] Adam Gogowski and David Zochowski: 'Modeling the impact of the zloty depreciation on the quality of foreign currency assets of banks' Financial Stability Report, 2003, Narodowy Bank Polski.

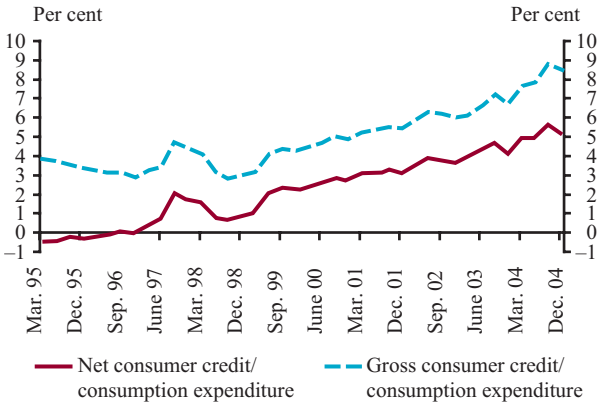
2. 1. 2. Households

Stabilisation on a new consumption-indebtedness path

As a result of a slowing rate of consumption, following a spectacular rise between 1998 and 2003, the consumption rate stopped increasing in 2004 and stabilised at a high level even by international standards. Despite a decline in real wages, the stabilisation of consumption rate at this high level was a result of dynamic growth in other income as well as increasingly vigorous consumer borrowing. The latter development is well characterised by the fact that while in 1999, on average, households financed 4% of their consumption expenditure through borrowing, this ratio doubled by 2004 (see Chart 2-11). Investment activity (purchase and construction of dwellings) remained buoyant, despite the tightening of the subsidised home purchase scheme. However, this was a result of the realisation of investment decisions brought forward following the news regarding the subsidy scheme restriction. Simultaneously with the stabilisation in the consumption-indebtedness path, in 2004 households again slightly increased their financial savings, although it is unlikely that they will reach the high ratio typical of the pre-2000 period again. As a result of the stabilisation process, simultaneously with a decline in the dynamic growth rate of indebtedness in 2004, the shift in its composition was also a favourable tendency. Based on GfK's survey[16], due mainly to demand reasons indebtedness grew to a lesser extent in more risky loan segments; moreover, savings also increased to a larger extent, due to precautionary considerations. The most important underlying reasons are last year's income and labour market developments (decreasing real wages, continuously increasing unemployment from the middle of the year), which mainly affected those groups of society that are more risky from a lending aspect (people with medium or low income, i.e. those in bad financial situation, people with low educational level and groups of people where employment is low). International experience shows that households with more than one type of debt constitute a riskier client portfolio. Their proportion did not increase, which also confirms the cautiousness of households, however, in the future a reversal of the trend is expected led by the banks' riskier credit policy. Macroeconomic uncertainties either do not affect the income prospects of households in the short run, or have a slightly positive influence. However, depending on the corporate sector's ability to adjust in the labour market to the risks outlined under Section 1. 3., risk factors may indirectly and to a varying degree impair households' position after a period. In 2005, real wages are expected to grow. However, the increase in other income, which played a role in sustaining last year's consumption growth and which constitutes nearly

Chart 2-11

Households' consumer borrowing as a proportion of consumption expenditure



Note: The magnitude of gross borrowing is an MNB estimate based on available stock and maturity data and interest rate statistics.
Source: MNB, CSO.

[16] GfK's (GfK Hungarian Market Research Institute) financial market data supply.

one-third of households' disposable income, is expected to fall considerably. A significant part of other income originates from construction, real estate trade and financial[17] enterprise activities, which are to be confronted with a more difficult situation in 2005. Based on the money market developments of late, interest income and exchange rate gains, which also belong to the above income category, are expected to start to decline as well. Due to unemployment-related fears, the general strengthening of precautionary considerations which was already observed last year is projected in certain groups of households. In addition to the developments outlined above, as a result of the high income-proportionate debt service burden relative to the level of indebtedness and the saturation of major market segments (housing, automotive and consumer durables markets), households will most probably moderate their investment spending and the growth rate of borrowing for consumption (see Box 2-2 on households' debt service burden). Thus, overall loan demand is expected to fall, and the increase in indebtedness may be maintained by the strengthening loan supply.

Box 2-2 Hungarian households' debt service burden

As a result of previous years' rapid development of indebtedness, debt servicing constitutes an increasing burden for households. The amount of and changes in instalments have a considerable impact on the household sector's solvency and its consumption and saving decisions, and thus on the situation of the economy as a whole.

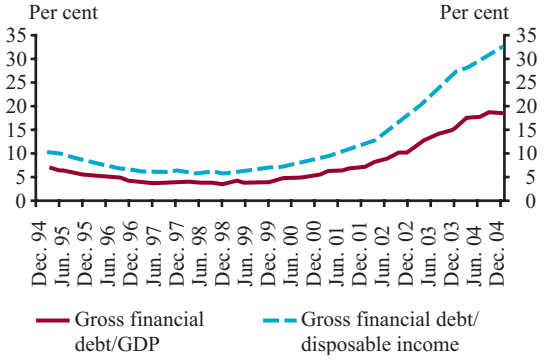
In the euro area, despite the rapid rise in the household sector's income-proportionate indebtedness in the 1990s, the ratio of the debt service burden did not change, because increasing repayments of principal were counterbalanced by decreasing interest payments due to a lower interest rate environment.[18]

The adjustment process which took place in household behaviour in Hungary between 2000 and 2004 and is still underway to a certain degree was rather typical of all converging and transition economies in the last decade. As a result of this process, households switched from an equilibrium path characterised by lower consumption and indebtedness to a new, higher equilibrium path. However, euro area income-based indebtedness ratios are still more than two and a half times higher: the value of the GDP-based indicator is 55%, while that of the disposable income-based indicator is 84% (see Chart 2-12)[19]. The sector's outstanding borrowing in proportion to its savings (25%), which is a kind of coverage ratio, is at the level of the euro area.[20]

By 2004, the ratio of households' debt service burden to disposable income increased to nearly 8.5%, which is not far from the 10% value of the euro area. Several factors underlie

Chart 2-12

Households' indebtedness rates



Note: The 2003 and 2004 values for disposable income contain the MNB's own estimates.
Source: MNB, CSO.

[17] For example, small enterprises engaged in real estate trade and loan brokerage.
[18] The above process was especially considerable in the earlier periphery countries. See details on page 51 of the ECB Financial Stability Review, December 2004.
[19] For a more detailed, country-specific comparison, please, see page 46 of the Report on Financial Stability June 2004.
[20] In developed countries (US, UK, euro area members) a parallel increase in debts and savings could be observed. In the late 1990s the rate of increase in financial savings was somewhat below that of indebtedness.

this debt service burden which is high relative to indebtedness (see Chart 2-13).

Portfolio composition is the most important factor: as opposed to the mere one-third ratio of the euro area, short-term consumer loans constitute 50% of Hungarian households' debts, which results in higher reimbursement flows and interest payments. However, in recent years, in parallel with the upswing in housing loans, the income-proportionate debt service burden increased at a lower pace than the outstanding debt. It is estimated that calculating with the ratio of the euro area, reimbursement flows would be approximately 1 percentage point lower, while interest payments would be nearly 0.5 percentage point less.

The second most important factor is that interest payment is higher than in the euro area due to other reasons as well:

- despite the significant share (over 60%) of foreign currency and subsidised housing loans, the average interest level is higher due to non-subsidised forint loans,
- due to higher lending risk and less fierce competition, lending margins are greater.

The effect of the higher level of interest rates of non-subsidised forint loans is estimated to amount to 0.75 percentage points. According to calculations, portfolio structure and high-interest non-subsidised forint loans together result in an approximately 2 percentage points higher income-proportionate debt service burden.

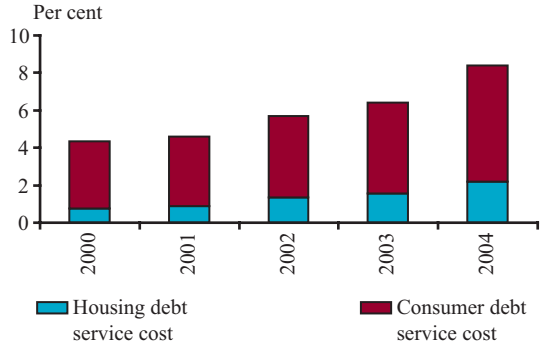
In the future, a strengthening of factors resulting in lower instalments is anticipated. An increase in the share of housing loans, a further expansion of foreign currency lending, a decline in the forint yield level and more fierce competition between service providers is expected. The completed sensitivity survey shows that of the above factors lending structure may have a more significant impact on the debt service burden than foreign currency lending or falling forint interest rates. Due to the expected decline in reimbursement flow and interest payment related to outstanding borrowing, the growth rate of the debt service burden may lag well behind that of indebtedness and its level is not expected to become critical.

From a credit risk aspect, in addition to the level of the debt service burden, its interest and exchange rate sensitivity are of importance. The examination of sensitivity to interest rates was carried out regarding loans re-pricing within a year. Transmission was supposed to be perfect: when pricing, banks completely follow the 2 and 1 percentage point upward shifts of the forint and foreign currency yield curves, respectively[21]. Rate fixation of housing loans usually exceeds 1 year. Most consumer loans are of short re-pricing, although due to their high interest rates and short maturity a supposed rise in the interest rate only increases the existing instalments to a small extent. Consequently, in the event of the above changes in interest rates at the same time, total instalment is estimated to increase by a mere 0.25 percentage points.

On the other hand, exchange rate exposure may be considered somewhat more significant, as creditors shift the entire exchange rate risk to borrowers. As foreign currency loans constitute one-quarter of total borrowing, a 15% exchange rate depreciation would increase the total debt service burden by approximately 0.5 percentage points.

Chart 2-13

Composition of households' debt service burden as a percentage of disposable income



Note: The 2003 and 2004 values for disposable income and debt service burden are MNB estimates.
Source: CSO, MNB.

[21] The effect of interest rate rises is probably weaker, as adjustment of consumer loan interest rates to market interest rates is considered exceptionally inflexible. (Cs. Horváth - J. Krekó - A. Naszódi (2004): 'Interest rate pass-through in Hungary' MNB Working Papers, 2004/8).

Strengthening credit supply[22]

The increasing importance of credit supply is well illustrated by the fact that in 2004 indebtedness increased despite a decline in the growth of net real wages (which constitute the basis of loan repayment). Increasing willingness to lend was reflected in sales, in significantly strengthening efforts to reach potential borrowers and also in easing lending standards and conditions.

Non-price conditions, including standards, many of which were eased by many banks in 2004, are a major determinant of a lender's risk-taking. The underlying reason for relaxation is the increasing competition of banks and non-bank creditors. From a risk aspect, of the non-price conditions, minimum mandatory contribution and maximum income-proportionate instalment are the most important ones. The level of maximum income-proportionate instalments is already high. Banks consider Hungarian households' informal income to be significant, and they allow high instalments compared to stated income, or often refrain from examining borrowers' income. As for strategies, in market expansion, along with sales and marketing tools, greater willingness to take risks has also become an important factor. When elaborating new credit facilities, banks increasingly strive to lessen households' liquidity and wealth constraints (foreign currency loans, longer maturity and decreasing mandatory contributions, respectively), targeting an increasingly wider and riskier client portfolio. For the aforementioned demand reasons, this opening in business policy will probably increase the riskier client portfolio only slightly.

Expansion of the credit supply mainly involves loosening non-price conditions; from a borrower's aspect receiving a certain amount of credit may be considered as a step forward. Households are usually less price-sensitive than companies. Thus, in the initial period of credit run-up there is practically no price competition. In 2004, banks already slightly eased their price conditions as well. However, the extent of easing was different in each credit type. The decrease was mainly observable in case of housing loans and large-amount foreign currency consumer loans. At the same time, in case of most consumer loans (overdrafts and hire purchase loans, personal loans), margins could increase somewhat, compared to market yields[23]. In Western Europe price related lending conditions play a greater role in banks' supply[24]. With the market maturing and competition strengthening, the role of pricing is expected to become more important.

Increasing supply is well reflected by the fact that banks spend considerable amounts on sales promotion and on building their sales networks in the household business. Building up the household market is more costly due to several reasons. On the one hand, finding the potential small fractions of demand, providing adequate information and improving financial culture generally require expensive mass marketing tools. On the other hand, one must get close to potential clients, and expanding sales networks requires considerable efforts. This process is well reflected by the fact that simultaneously with the growth in the household segment, marketing costs in past years increased faster than operating costs, and in 2004

[22] Mainly the results of the Senior Loan Officer Survey on Bank Landing Practices and banking operations expense data served as a basis for capturing the changes in supply behaviour.

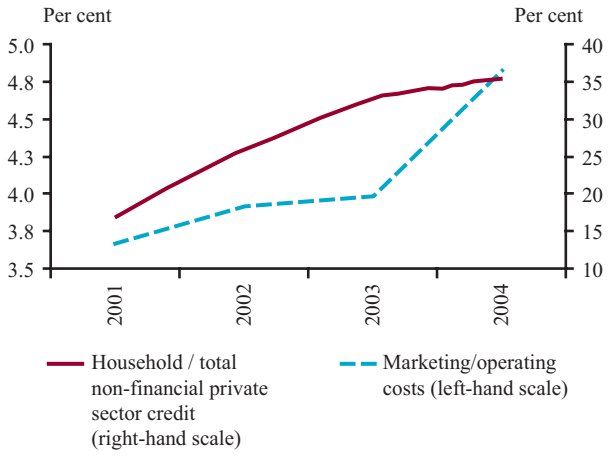
[23] This conclusion was weakened by the existence of intermediation commissions and fees and by the change in the composition of forint loans. For example, in the case of hire purchase loans the commission granted to retailers may be significant and growing. It is mainly loans with higher amounts which are increasingly characterised by the use of foreign currency loans, while forint interest rate statistics rather continue to contain smaller loan amounts, which, due to their higher specific costs, involve higher margins.

[24] Based on the results of the ECB's Bank Lending Survey received to date.

they ran up even more, while in the large enterprises business their ratio remains at around 1% (see Chart 2-14). Channels of distribution are in a period of transformation. Due partly to the sector's consolidation, the number of traditional bank branches is stagnant. Some banks are expanding their branch networks dynamically, although these branches work as sales points employing only 3-4 persons and thus operate with significantly lower costs. Sales through agent networks and call centres are also on the rise.

Chart 2-14

Marketing costs in the banking sector



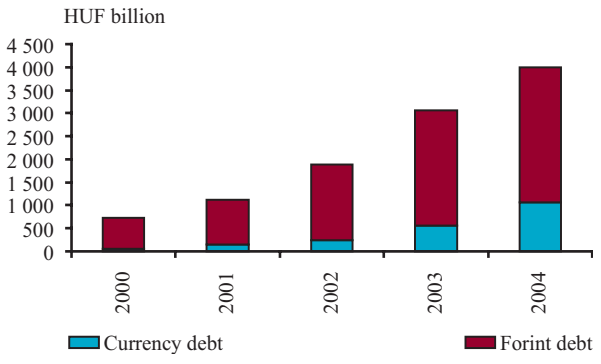
Source: MNB.

The role of increasing foreign currency lending in indebtedness

Since 2004, foreign currency lending has played an increasingly important role in households' indebtedness, which is considered to be a risky development in terms of stability. By the end of the year the ratio of foreign currency loans exceeded one-quarter of all outstanding borrowings of households (see Chart 2-15). The extremely fast spread of foreign currency lending was driven by demand and supply, institutional (housing subsidy) and money market factors as well. Due to their generally low risk awareness, positive experience and liquidity constraints, households tend to opt for foreign currency loans in case of larger-sum consumer loans because of the difference in instalments. Due to the subsidy related to earlier large-sum forint loans, this type of behaviour appeared in housing loans as late as in 2004. On the lenders' side, as a result of the appreciation of the households credit market and increasing competition, foreign currency facilities have become more and more important in order to increase the amount of loans outstanding and market share. Creditors can lend more in foreign currency than in forints. Simultaneously, the interest rate of the favourable international money market environment has for a long time resulted in a significant interest rate differential in terms of instalment amounts. Most new foreign currency loans are Swiss franc-based loans with short re-pricing period. Households which have no natural hedge become indebted close to the strong side of the forint intervention band, while, due to the macroeconomic fundamentals and environment, the vulnerability of the exchange rate is higher than previously. It constitutes an additional risk that in case of foreign currency lending even those customers with liquidity constraints who would otherwise be excluded from forint financing may obtain funds. Consequently, considerable exchange rate depre-

Chart 2-15

Denomination structure of outstanding household debt



Note: The denomination structure of loans of financial enterprises is based on estimates.
Source: MNB.

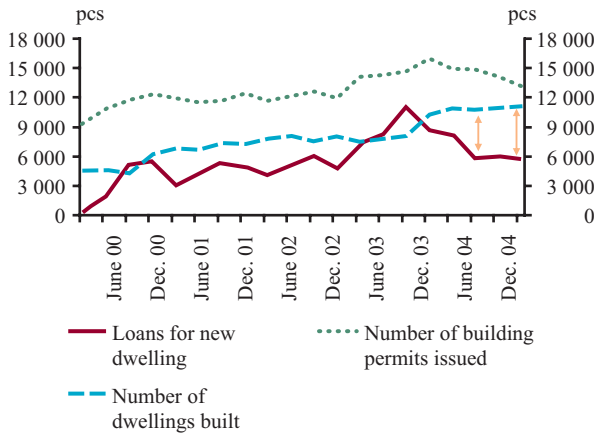
ciation could have a significant effect on the whole financial intermediary system. Due to the demand and supply factors of foreign currency loans and to the existence of the interest rate differential, foreign currency lending is expected to gain ground in the future as well.

Declining but riskier housing loans

In the second part of 2004, the effect of the tightening on the housing subsidy scheme could already clearly be observed. Following the change in regulations, the interest rate on forint-based loans approached the market yield level, which can be interpreted as a kind of interest rate shock for households. At the same time, bank margins on subsidised loans also declined markedly. Demand for subsidised loans plunged. However, market facilities, which were almost exclusively foreign currency ones, started to grow dynamically, and their ratio within total new loans increased to 40%. The demand side practically immediately adapted itself to the tightening in the housing subsidy scheme, while the supply of new houses increased steadily last year as well (see Chart 2-16). The slow adjustment of supply is also reflected by the decline in the price increase of new flats sold last year and the fact that from end-2003 the number of loans requested for the purchase of new housing fell to a gradually increasing extent behind both the number of building permits issued and the number of newly built homes. Simultaneously with the supply side adaptation and the further slow decrease in demand for homes, the level of household investments in housing is expected to decline in 2005 and 2006. This has been confirmed by 2005 credit demand data, as the amount of loans taken out for the purchase of new real properties has gradually been decreasing since the first months of 2004.

Chart 2-16

Major housing market indicators



Source: CSO, DEM Information and Economic Research Office.

With regard to competition, concentration is high in the market of housing loans, which reflects relative weakness in competition (see Chart 2-17). Due to their special status, mortgage banks and banking groups with mortgage banks are becoming the price setters for subsidised loans[25], so a part of commercial banks may become competitive only in riskier segments, which may be considered as an unfavourable development.

The maximum level of income-proportionate instalment, which may be regarded as one of the fields of competition, is already very often high, and thus a further relaxation of this condition cannot be expected. In addition, and partly in connection with the above, due to the low LTV[26] many banks treat housing loans simply as collateralised products, without conducting any thorough income monitoring. Most current outstanding loans have a low, 35%-45% average LTV.

[25] Loans targeting the purchase of used housing are tied to mortgage bond refinancing. For this, commercial banks must establish a partnership with a mortgage bank and allow the latter to have a part of the subsidy.

[26] Loan to value: loan amount in proportion to the market value of collateral.

Due to the above, competition increasingly extends to the reduction in the minimum mandatory own contribution, generating a new market for banks. At present, several Hungarian banks have products with LTV around 70%. International experience suggests that loans with high LTV rates are extremely risky, their loss indicators are much higher, and they are significantly more sensitive to economic cycles. Foreign currency denomination may further increase risks that generally characterise loans with high LTV rates: exchange rate risk may raise the probability of default (sudden jump in instalment), risk exposure (the amount of outstanding loan increases) and loss given default (at the same time many borrowers do not pay, which reduces income from quick sales).

Due to the risks of high-LTV lending, banks in developed countries use mortgage insurance facilities, which allows them to shift the additional credit risks of potential demand deriving from higher LTV rate to the insurance company and the related costs upon the borrower. Within the framework of the 'Nest-building programme' the government introduced a state guarantee for high-LTV loans, and first experience shows relatively strong potential demand for this facility. However, because of its numerous restrictions, this facility has only had a minor effect on new contracts so far.

Overall, as a consequence of an expected decline in investment spending, it is demand which may limit further growth in the housing loan market. On the supply side, competition among banks appears to be increasing and they seem to be more willing to take risks, which is considered to be a risky development.

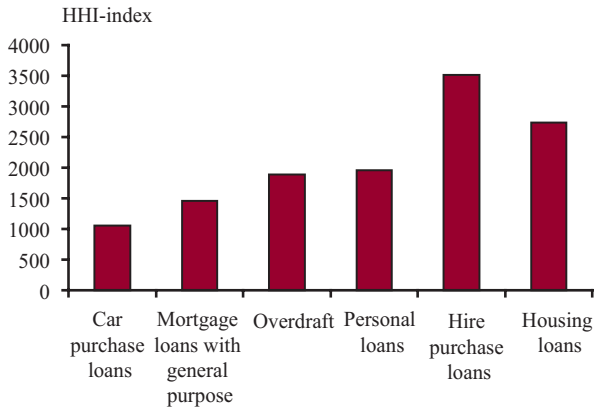
Increasing consumer credit risk

Contrary to previous years' trends, as a result of the slowdown in demand for cars last year and still buoyant consumer durables sales, the wide gap between the growth rate of car purchase loans and consumer loans decreased. Slackening demand for car purchase loans is reflected by the fact that for the first time since 1995 the number of new cars sold fell in 2004. Moreover, in the beginning of 2005 there was an unprecedented decline in car prices as well. Households' housing investments are expected to drop in 2005, which may negatively affect the related demand for consumer loans for the purchase of furniture and interior decoration. Based on the above, demand for consumer loans is expected to weaken.

Despite this, in terms of the market segments of consumer lending, lending for car purchase may continue to be an especially risky business. Unlike in other markets, competition here is pre-

Chart 2-17

Concentration of individual household market segments in December 2004



Note: Financial enterprises were taken into account as consolidated with their mother banks, while the savings co-operatives sector was treated as one participant. HHI: Herfindahl-Hirschmann index.
Source: MNB.

sumably extremely fierce, which is also confirmed by market concentration indicators (see Chart 2-17). In view of this competition, both sales and lending activities are increasing in the automotive market, thus the level of credit risks is not expected to decline. Maximum income-proportionate instalment has been high for a long time, the importance of high-LTV lending is growing.[27]

With regard to consumer loans, it was the amount of commodity loans that increased the least last year. This is probably related to the increased use of bank cards and the spread of overdraft facilities and card-based credits. Substitutability between the products of concentrated market segments is expected to grow slowly, which results in a further increase in sub-market competition.

Anticipated deterioration in portfolio quality

The previous Sections described that lenders' willingness to take risks is increasing in each market segment, while loan demand is expected to fall. These two trends lead to growth in household credit risks. However, as a result of newly extended loans and due to outstanding bank loans which are 'young' on average, accumulating risks have not yet been reflected in a change in portfolio quality. Of the various quality indicators of loan portfolio it is only the ratio of overdue payments which increased to a certain extent.

[27] For details of risks of lending for car purchase, see Section III.1.

2. 2. Market risks

Although direct market risks of the banking sector did not increase significantly last year, there are several discernible trends which may have important consequences for stability. As far as FX risk is concerned, the magnitude of positions building-up within the balance sheet and its reasons may contribute to the banking sector's vulnerability to external shocks despite the deep liquidity of the foreign exchange market.

As for interest rate risks, in the short run the considerable fall in short-term yields early this year and the flattening of the yield curve exert a favourable income effect due to banks' transformation characteristics, while in the longer term the expected decline in spreads and an eventual shortening of the effective maturity of deposits may result in a growing significance of interest rate risk.

As a result of a slowdown in lending and of long-term fund-raising, the liquidity conditions of the banking sector improved temporarily, but over the longer term a further narrowing of liquidity is expected.

2. 2. 1. Effect of foreign currency lending on banks' net FX position

The fast expansion in foreign currency lending last year affected the balance sheet structure and exchange rate risk of the banking sector as well. Partly as a result of this, by end-2004 the surplus of foreign exchange assets vis-à-vis foreign exchange liabilities increased to an unprecedented level, i.e. to 6.3% of the balance sheet total (approx. HUF 1,000 billion).

The on-balance sheet FX position of banks basically depends on the current account deficit and the funding composition and denomination structure of this deficit. In previous years for example, it was the intense purchases of government securities by non-residents' that contributed to the opening of the on-balance sheet position, as the required forint funds were obtained by investors through conversion at banks. Contrary to the above, the opening of the FX position in 2004 was probably attributed to the domestic sectors' significant demand for foreign currency loans. On the one hand, opening of the position depends on banks' ability and willingness to raise foreign exchange funds, and on the other hand, it is considerably influenced by the developments in domestic economic sectors' demand for foreign currency loans.

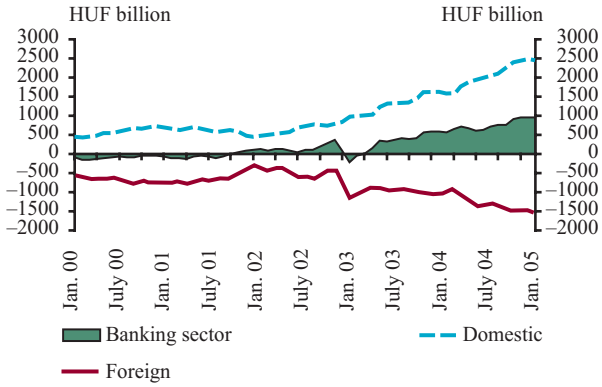
On the basis of the chart below (see Chart 2-18), it can be seen that the widening foreign exchange position of the banking sector is not a reason for but a consequence of the increasing foreign exchange lending during the recent period. (It is not the abundance of foreign exchange funds of foreign origin that motivates banks to extend foreign currency loans.) The chart clearly illustrates that growth in the on-balance sheet position started as early as end-2001, and, apart from the speculative attack in January 2003, the open position has steadily been increasing since then. Domestic sectors' continuously growing demand for foreign currency loans and the lagging foreign exchange funds from abroad together result in the expansion of the on balance sheet foreign exchange position[28] due to the strong domestic

[28] In the short period following the speculative attack the withdrawal of hot capital that had flowed in also contributed to the opening of the position.

demand and banks' willingness to lend, developments in domestic foreign exchange position and foreign exchange funds from abroad drifted away from one another.

Chart 2-18

Resident and non-resident sectors' foreign exchange position vis-à-vis the banking sector and the banking sector's on balance sheet FX position[29]



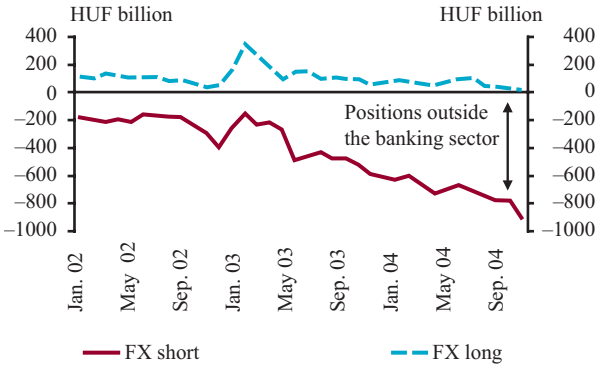
Source: MNB.

The trend shown above does not represent a stability risk as long as the liquidity of the foreign exchange market provides adequate possibility for banks hedge the open on-balance sheet FX position. The fact that banks almost fully hedge their on-balance sheet FX position by means of off-balance sheet transactions could be considered favourable from stability and prudential aspects. Thus, as a net effect of hedging excess FX assets banks in fact provide ostensible foreign exchange liabilities. However, as a result of foreign currency lending banks need to hedge more and more transactions denominated in Swiss francs, so a euro-Swiss franc transaction is also carried out due to the low liquidity of the Swiss franc-forint market.

The most significant stability risk in the above described process is that the aforementioned trend has been relevant to almost all Hungarian banks for the last two years. Consequently, the entire banking sector (approx. 98%) found itself on the short side of the FX market (see Chart 2-19). While in previous years banks were much better able to hedge their foreign exchange positions with intra-banking sector transactions, by now it has become impossible without the participation of other economic sectors (corporations, non-resident sector). This trend may result in the sector's increased vulnerability despite the improvement in liquidity and the advancement of the FX market in recent years. However, the picture looks more benign taking into account the deep liquidity of the euro-Swiss franc market is close to zero.

Chart 2-19

Direction of off balance sheet FX positions of the banking sector



Source: MNB.

2. 2. 2. Impact of declining interest rate environment on interest rate risk

At the beginning of 2005, following the considerable interest rate cuts, expectations of a further interest rate cut diminished in the financial markets. As a consequence, by the end of March the forint yield curve became nearly flat. Deriving from the interest rate risk, quickly falling interest rates may have a considerable impact on banks' stability, especially in view of the fact that during the recent

[29] The positions shown represent net values (e.g. resident sector's net position = banking sector's internal foreign exchange assets - banking sector's foreign exchange liabilities collected from the resident sector).

2-3 years the interest rate transformation role has increased significantly as a result of the growing role of forint housing loans and short-term deposits (long re-pricing housing loans were more or less funded by short re-pricing excess liabilities). On the other hand, simultaneously, the upturn in foreign currency lending in 2004 did not have an important influence on interest rate risks in certain foreign currencies.

However, despite the seemingly increasing risk exposure it is worth observing that even in the period of significant rises in interest rates in 2004 the banking sector did not suffer notable losses in its net interest income. Moreover, interest income even increased.

From a stability aspect, interest rate risk deserves special attention because banks undertake it within one of their core functions. Consequently, this exposure is typical not only certain for banks, but for the system as a whole (endogenous risk). The interest rate risk exposure of the banking sector may emerge from the following four factors.[30]

1. Repricing risk: the difference appearing in the repricing structure of banks' assets and liabilities.

2. Yield curve risk: due to the presence of repricing risk, banks' financial conditions are also influenced by changes in the shape of the yield curve (flattening, steepening).

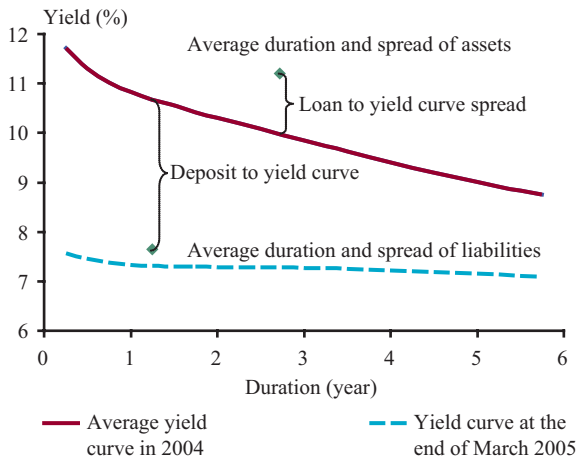
3. Basis risk: the risk emerging from the imperfect correlation between the interest rates of assets and liabilities side.

4. Risk of embedded options: on-balance sheet explicit and implicit options may significantly influence the maturities of assets and liabilities and thus the exposure deriving from interest rate transformation mentioned under point 1.

Chart 2-20 below illustrates the importance of the aforementioned interest rate determining factors calculated on the basis of 2004 interest rate spreads. Based on the above, the following analysis will consider what kind of influence the accelerated interest rate cut trend of early 2005 may have on banking sector stability.

Chart 2-20

Summary chart of factors determining the interest rate exposure of the banking sector [31]



Source: MNB.

Based on repricing risk, the declining interest rate environment may favourably influence the position of the banking sector. As is well illustrated in the chart, while the duration of the liabilities side was around 1.2 years at end-2004, the duration of the assets side already exceeded 2.6 years. Consequently, quickly declining interest rates have a positive effect on the interest income of the banking sector and on the market value of its equity capital as well.

From the aspect of yield curve risk mentioned under point 2, flattening also has a favourable impact over the short run. As a result of the flattening of the yield curve, interest income from transformation may increase 'automatically', and

[30] For details of supervision and management of interest rate risk, see Basel Committee on Banking Supervision Principles for management and supervision of interest rate risk, July 2004.

[31] Attention must be called to the fact that due to the lack of foreign currency breakdown the average loan and deposit side interest rates refer to the total balance sheet, thus the extent of spreads in the chart is suitable for illustrative purposes only.

the market value of equity capital may also increase. In 2004 and in previous years as well, the sharply increasing shape of the yield curve resulted in an approx. 50-100 basis point ostensible 'loss' in the interest rate spread.[32]

However, taking into account the third factor, i.e. the risk of changing in spreads (basis risk) as well, the picture becomes more complex. Following a change in the interest rate, the spread, due to banks' maximising their profits, usually widens (partly this was the reason for last year's high interest income). This temporary widening of the total spread is basically influenced by competition as an external factor. Since competition on the lending side may be considered fiercer than on the deposit side, when interest rates are falling, banks have smaller chances of delaying repricing than in case of increasing interest rates.[33] This means that when interest rates move downwards the income improving effect of the temporary widening of the total spread may be lower than when interest rates rise. Not only the change in interest rates, but the decline in the level of interest rates is also unfavourable. When a certain level is reached, banks cannot decrease interest rates on the deposit side any further, as some deposit (sight deposits) rates are already close to the lower limit (zero interest rate). All in all, regarding to the basis risk, due to the strong competition on the lending side a decline in interest rates will probably not be able to cause a significant spread widening, and due to the implicit lower limit of certain deposit rates, a decline of interest rates to a low level also forebodes a fall in the total interest spread.

The presence of the risk of embedded options in the above chart may be interpreted as follows: the effective duration of liabilities (deposits with rollover option) and assets (mortgage loans with early redemption option) may change. On the liabilities side, some deposits have such long maturities that this may render it possible to hedge the interest rate risk in a relatively straightforward manner. Over the longer term, declining interest rates influence this favourable situation in two ways: First, the prepayment ratio of mortgage loans may increase. Second, at low retail bank interest rates the effective maturity of deposits may shorten, since alternative investment opportunities are becoming more and more attractive. As a result, banks are compelled to make up for the consequently missing or relatively decreasing liabilities by alternative funding (securities issuance, interbank borrowing), which - due to the aforementioned reasons - have less favourable properties than relatively stable core deposits from the aspect of interest rate risk management.

Box 2-3: Systemic risk of banks' trading activity

Following the widening of the HUF band and as a result of increasing volatility and foreign exchange liberalisation, the trading activity of the Hungarian banking sector increased considerably. Although based on the capital requirement charged for individual positions, trading activity still does not seem to represent a significant stability risk (a mere 2%-3% of total capital)[34], the possibility of a swift, joint shift in positions deserves attention from a stability viewpoint. Therefore, in this box the systemic aspects of banks' trading activity are examined. In terms of systemic risk, it may be extremely prob-

[32] The interest rate spread deriving from the shape of the yield curve may be interpreted as the risk spread of maturity transformation.

[33] For details of competition in individual market segments, see Csaba Móré - Márton Nagy: 'Competition in the Hungarian Banking Market', MNB Working Paper, 2004/9.

[34] In international comparison this ratio cannot be considered low. For details of American banks' trading activity see: Beverly J. Hirtle: 'What market risk capital reporting tells us about bank risk', Federal Reserve BNY, Economic policy review, September 2003.

lematic if trading book risks of individual banks move together to a great degree, as in the event of increasing volatility joint effects may become significantly stronger due the presence of common risks.

As adequately frequent data on banks' actual positions and the directions of positions are not available, what can be examined is the similarity of changes in the absolute magnitude of positions based on capital charges. However, co-movement of capital requirements does not provide information about the similarity of directions of positions. In this analysis, the daily capital requirements of 17 Hungarian banks maintaining a trading book were used for the period between March 2004 and March 2005. Capital requirement of banks' trading positions ensues from interest rate risk, equity price risk, option risk (together: position risk), counterparty risk and risk of large exposures. Since it is the interest rate risk and the counterparty risk that constitute approximately 70%-80% of the trading book capital requirement, it is mainly these two risk factors that are focussed on. Although in certain transition periods large exposure may also be considerable, it is usually concentrated at one or two banks.[35]

Examining the common factors of interest rate and counterparty risks (macro prudential risk) the extent of co-movement of changes in capital charges for each bank measured between two days is analysed. Basically two factors may underlie the change in capital requirement and thus the aforementioned endogenous risk: change in the same direction emerging from the revaluation of existing positions, on the one hand, and banks' decisions regarding the magnitude of undertaken positions, on the other. As only the capital requirement hedging the absolute magnitude of position is available, the significance of these two effects cannot be separated.

The change in time of average common exposure is captured by breaking down the whole period under review into 30-day moving and overlapping periods. For the examined partial periods, the following formula was used to calculate the average correlation for the entire banking system (homogeneity index), measured by the mean of the pair-wise correlation of the daily changes of the capital charges[36]:

$$\underset{T=t}{\overset{t+30}{p}} = \frac{\sum_{j=1}^{n-1}\sum_{k=j+1}^{n} cor(\Delta c_i, \Delta c_k)}{\frac{n*(n-1)}{2}}$$

where n is the number of banks examined, while Δc_i and Δc_k are the daily percentage changes in the capital requirement of the i^{th} and k^{th} banks, respectively. The procedure described above was carried out vis-à-vis the capital requirement of interest rate and counterparty risks in turn.

In terms of stability, the positive average homogeneity coefficient and the average homogeneity coefficient approaching 1 *(p)* may be deemed unfavourable. This may indicate that risks of trading activities of individual banks are changing at the same time, and thus the banking sector faces some sort of common risk. Attention must be called to the fact that an increase in homogeneity does not necessarily represent an increase in the aggregate risk of the banking sector's trading activity. Homogeneity can increase even if banks' own position is declining at the same time. This phenomenon is advantageous, as the magnitude of positions exposed to risk decreases. However, it may indicate the existence of endogenous risks, which may be a greater problem in terms of stability. On the other hand, a decreasing and negative average homogeneity coefficient may indicate a declining level of systemic risk in the sense that the possibility of a simultaneous shift of risks is lessened, i.e. the magnitude of common risk declines.

One may wonder how taking directions into account may alter the picture. From a stability viewpoint it may also be of significance if the absolute change in risks is the result of an increase or a decrease in positions of the same or opposite directions.[37] In our opinion, in respect of trading book risks

[35] The sum of individual and general position risks is considered as the total capital requirement of interest rate risk.

[36] In terms of systemic risk, of course, other statistical characteristics (quartiles, skewness etc.) of the distribution of correlations by pairs may also be examined.

[37] This may distort the picture especially in the case of interest rate risk, where the magnitude of potential losses depends on the direction of positions as well.

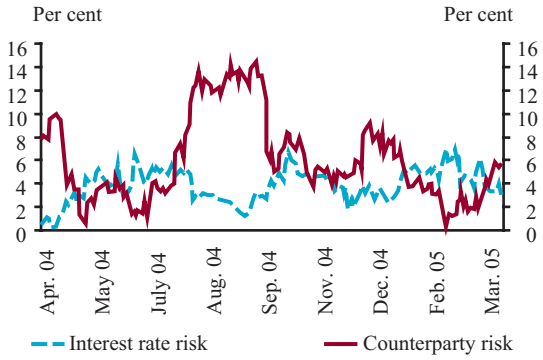
- in addition to directions - the size of the position itself and its change also provide important information. In terms of trading book positions, risk depends much more on changes in volatility than on the direction of the position. Therefore, it is postulated that examining the co-movement of capitals allocated behind trading book positions may provide information on the presence of common exposure and its magnitude. However, it cannot be discerned whether the common exposure defined as described above derives from banking decisions or same-direction revaluation of different positions.

Chart 2-21 below illustrates the average correlation coefficient of the interest rate calculated in the aforementioned manner and counterparty risk capital requirements in the period under review. It illustrates that in this period and for both risk factors changes in capital requirements showed some, although rather moderate co-movement (0%-10%). On the basis of this finding, it is ascertainable that changes in capital charges were rather dissimilar in the period under review, i.e. the size of endogenous risk was relatively small. This in itself may be considered favourable in terms of financial stability.

Despite the relatively short period under review, on the basis of the above analysis it may be concluded that the changes in capital charges of the trading position of banks showed rather few similarities, i.e. endogenous risk was relatively low. This in its won right may be considered favourable in terms of stability, as there is a relatively low risk of positions' simultaneous building up or declining within the banking system. As banks' trading activity will most probably remain intense in the coming future as well, the analysis of the aforementioned homogeneity indicators may continue to provide important information.

Chart 2-21

Developments in the average correlation coefficient of interest rate risk and counterparty risk
(30-day moving sample)



Source: MNB.

2. 3. Liquidity risk

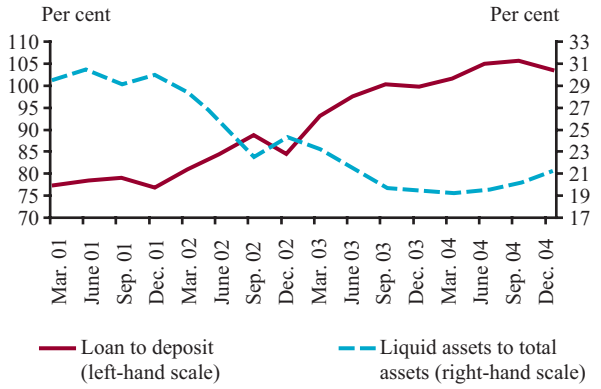
In terms of market risks, one of the most favourable developments in 2004 was the relaxation of the tense liquidity conditions which had previously characterised the banking sector. Both the significant increase in loan to deposit coverage and the decline in the ratio of liquid assets clearly ceased last year (see Chart 2-22). This favourable development was basically the result of two factors. On the one hand, the growth rate of long-term housing loans slowed. On the other hand, the ratio of long-term financial liabilities which funded most of the housing loans increased.

Although the banking sector's liquidity conditions improved, it still exhibits a considerable structural liquidity surplus, rendering liquidity management much easier. Consequently, tightening liquidity did not cause any serious problems in earlier years. However, one must recall that the distribution structure of liquidity surplus among banks is rather asymmetric. Several banks already rely to a great degree on money market liabilities. Therefore, developments in 2004 primarily eased the liquidity risk of these banks.

Despite the aforementioned favourable effects, this improvement in liquidity conditions is considered temporary. Due to improving long-term lending and the probable further decline in the ratio of deposits, banks already characterised by scarce liquidity will most probably have to rely on money market liabilities again to a greater extent in the period ahead.

Chart 2-22

Liquidity conditions in the banking sector



Source: MNB.

2. 4. Financial conditions in the banking sector

Following a significant improvement in banking sector profitability, banks' financial conditions strengthened further. Due to the high level of internal capital accumulation, the decline in the capital adequacy ratio of the banking sector stopped, putting an end to the trends of previous years. From a stability perspective, the high profitability of banks and strengthening of their capital position is viewed as a favourable development, because it facilitates the banking sector's shock absorbing capacity.

The picture is less rosy due to the fact that outstanding profitability has involved an increase in banks' willingness to take risks. Sustainable profitability requires that banks adequately calculate in additional risks involved in opening towards retail markets, which may be rendered difficult by strengthening competition. In addition, over the medium run one important challenge facing banks is to adequately adapt themselves to an environment of lower interest rates. The decline in interest rates, coupled with intensifying competition will narrow the interest margin. Therefore, to maintain adequate profitability, more attention may be paid to the improvement of cost efficiency.

2. 4. 1. Profitability

Further improvement in bank profitability[38]

The improvement in banking sector profitability continued in 2004. Banks' 25.4% return on equity, calculated on the basis of after-tax profit, was the highest value in the period since consolidation. It may also be considered favourable that last year's improvement in performance was significant in low and medium profitability categories as well. However, when evaluating this spectacular improvement, it is important to call attention to the fact that transient factors and banks' higher risk-taking also contributed to this improved profitability. First, some of the improvement in profitability was a result of higher average level of interest rates in 2004. Second, a shift in lending towards riskier segments and products (e.g. foreign currency lending) can be observed. Despite the slowdown in the growth of housing loans, mortgage loans continued to play an important role in profit generation.

Both an increase in income generating capacity and improving cost efficiency have contributed to the major improvement of profitability in recent years.[39] Additionally, looking at the relative weight of the two factors, a strengthening of the role of cost efficiency improvement in 2003-2004 is discernible (see Chart 2-23). This development is considered favourable, as improvement in cost efficiency contributes to the strengthening of banks' financial conditions in a lasting manner.

However, with respect to the improvement in income generating capacity, the picture is more variegated. Comparing the developments in the two major factors which influence the income-to-assets ratio, it can be derived that the improvement in income generating capacity can mainly be ascribed to banks' enhanced willingness to

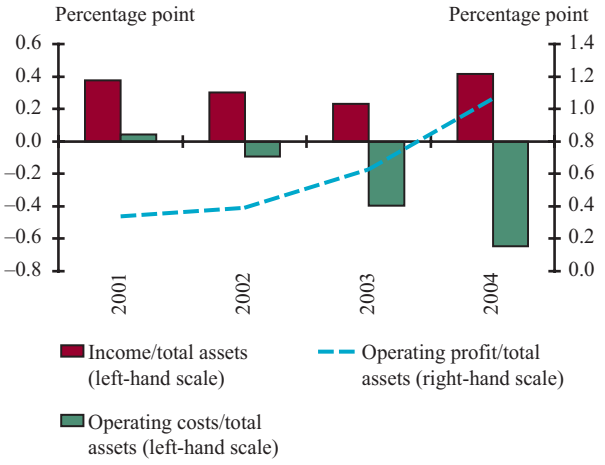
[38] In the analysis of the profitability trends in the banking sector, the 2004 aggregated data also include interim accumulated data of the two banks that ceased to exist due to mergers during the year.

[39] As changes in provisioning costs played only a minor role in the improvement of profitability over the whole period, only the operating profit (calculated without provisioning) is broken down into its components here.

Chart 2-23

Cumulative change in the banking sector's operating profit and its components between 2001-2004 as a proportion of total assets

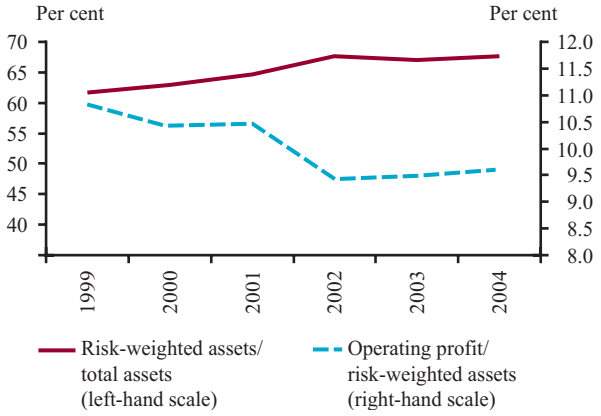
(2000 = 100%)



Source: MNB.

Chart 2-24

Risk-weighted assets as a proportion of total assets and operating profit as a proportion of risk-weighted assets



Source: MNB.

take risks.[40] This is indicated by the significant increase in the ratio of risk-weighted assets to total assets between 1999 and 2004, mainly as a result of rapid growth in lending to the private sector.[41] In the same period, the ratio of operating profit to risk-weighted assets declined, although its level remained high, and finally stabilised in the last two years (see Chart 2-24). However, it must be taken into account that the fast growth of housing loans played a decisive role in the break in the downward trend. This makes the picture more benign, mainly because the banking sector realises a high interest margin on most housing loans, and this was typical of the period before the tightening of the subsidy conditions and is not in conformity with the relatively lower risk of mortgage loans.

Rapid growth in interest and non-interest income

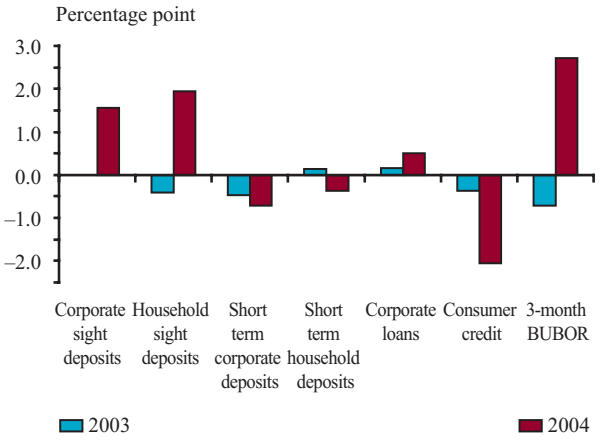
An analysis of the sources of increase in banks' income in 2004 reveals a marked expansion of both interest and non-interest income. Net interest income grew by 25% as a result of a dynamic, albeit dwindling, increase in lending and the slight widening of the interest margin, which was already high by international standards.[42] The persistence of high interest margin was mainly supported by the considerable increase in differentials of sight deposit rates relative to market yields (see Chart 2-25). Due to rigidity of pricing, developments in the margin on sight deposits greatly depend on the changes in the level of market rates. About one-third of the increase in annual interest income is estimated to have been derived from the significant widening of the margin on sight deposits. The shift in the structure of lending towards riskier segments, especially lending to SMEs and con-

[40] Banks' income is the sum of net interest income, net fee and commission income, profit on financial operations and dividends received.
[41] Banks' willingness to take risks was proxied by the ratio of risk-weighted assets, used for calculating the capital adequacy, to total assets.
[42] (Net) interest margin here is interpreted as the ratio of net interest income to average total assets.

sumer loans, has a positive impact on the margin. However, the strengthening competition between banks for corporate and household time deposits, which is indicated by the decline in deposit margins, results in a narrowing of the interest margin.[43]

Chart 2-25

Annual average change in deposit and lending margins and the BUBOR in 2003-2004[44]



Note: Corporate and household deposits refers to deposits with a maturity of up to one year, corporate loans refers to loans with variable rate or an initial fixed rate of up to one year.
Source: MNB.

The contribution of non-interest income to the increase in income continues to be strong, as indicated by the 23% growth in net non-interest income. On the other hand, a significant change in the structure of non-interest income can be observed towards profit on financial operations, which is considered as a more volatile source of income. This is mainly a result of a sharp rise in income recorded on foreign exchange items and operations. However, a decline was observed in the growth rate of net fee and commission income which may be considered the most stable component of non-interest income. This is mainly attributable to the slowdown in the growth of housing loans. Examining the income structure as a whole, following a dynamic expansion of net interest income, the shift towards non-interest income which characterised the previous years has come to and end.

Improving cost efficiency

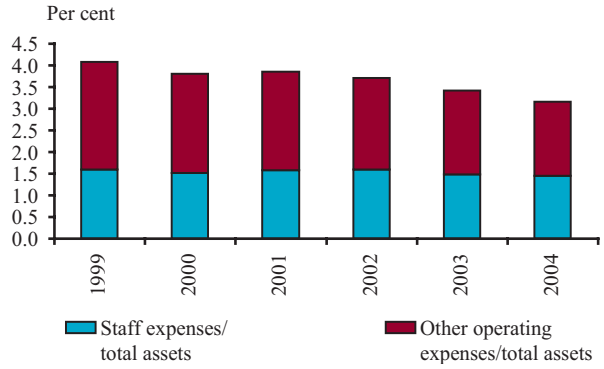
The continuing improvement of the banking sector's cost efficiency is reflected by the fact that the increase in operating costs is lower than the increase in both total assets and income. Banks' cost efficiency improvement derives mainly from more efficient utilisation of existing capacities, as a result of a strong growth in lending to the private sector and especially to households (see Box 2-4 on the relationship between the banking system's cost efficiency and bank intermediation). Due to rapid lending growth, the improvement in banks' cost efficiency over the last two years occurred despite considerable growth in the real value of operating costs.

In respect of the cost structure, there is a sharp contrast between developments in staff expenses and non-personnel related costs. It follows from this comparison, that the improvement in cost efficiency is mainly a result of a more moderate increase in non-staff expenses (see Chart 2-26). In contrast, the ratio of staff expenses to total assets has been broadly stable; thus, banks did not achieve significant cost savings in this area. This is partly due to the fact that between 2000 and 2004 the downward trend in bank staff numbers stopped. The rapid increase in mortgage lending and some banks' opening towards retail banking resulted in an increase in staff, although this was mostly counterbalanced by staff reductions related to mergers in the period under review. The significant real growth in per capita staff expenses also played an important role, with the average annual real growth rate being 8% between 2000 and 2004.

[43] Although the margin on consumer loans narrowed in 2004, it still remained at a high level (above 10 percentage points).
[44] Deposit margin: BUBOR - deposit rate. Lending margin: lending rate - BUBOR.

Chart 2-26

Banking sector staff and non-staff expenses as a proportion of total assets



Source: MNB.

In addition to the significant improvement of efficiency for the aggregate banking sector, it is important to mention that considerable heterogeneity among banks was observed with respect to developments in cost efficiency last year. Following capacity increasing investments carried out in order to strengthen positions in the household market, some banks' expenses have been increasing faster than the average. The number of staff and branch network of these banks has shown expansion of late. Capacity increasing investments have only a temporary negative effect on cost efficiency indicators, provided that banks striving for market acquisition have realistically assessed the prospects increasing business volume. In terms of the banking sector's cost efficiency, last year's mergers had a contrary effect as they were accompanied by staff reductions and branch closures.

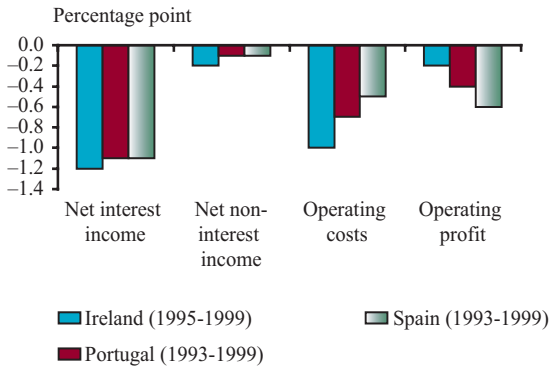
Box 2-4 Cost efficiency in the banking system and the depth of banking intermediation

Both an increase in income generating capacity and enhanced cost efficiency contributed to the significant improvement seen in banking profitability over the past period. Over the medium term, further interest rate convergence and intensifying competition will be major challenges for banks. The reason for this is that the expected narrowing in the interest margin may permanently reduce the rate of growth of domestic banks' most important source of revenue. International experience suggests that banks are primarily able to offset the adverse impact of considerably narrowing interest margins by improving cost efficiency. In the EMU member states which started monetary convergence from a relatively high level of interest rates before they joined the euro area, a large decline of interest rates narrowed the interest margin to a major extent. In these countries improved cost efficiency played a major role in slowing down the decline in profitability (see Chart 2-27).

Over the past period, the Hungarian banking system made significant progress in improving efficiency. Despite this, the ratio of operating costs to total assets remains high, and is more than double the average of the EU-15 countries. This suggests that there is still a considerable efficiency gap to close for domestic banks. Empirical analyses carried out on large

Chart 2-27

Chart II-27 Change in operating profit and its components as a percentage of total assets in selected EMU countries before euro adoption



Note: Operating income = interest income + non-interest income - operating costs
*Source: OECD.**

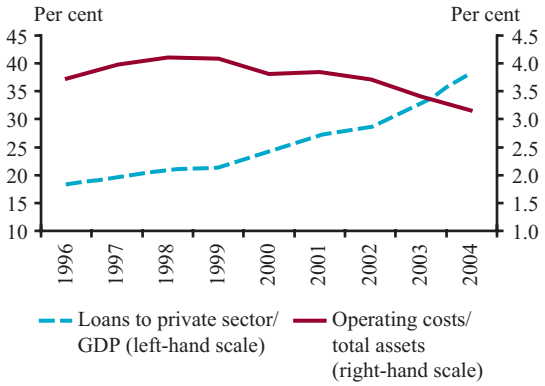
cross-country samples reveal that the depth of financial intermediation has a positive correlation with cost efficiency.[45] A possible explanation for this is that deeper financial intermediation entails more intense competition, which in turn prompts banks to raise the efficiency of their operations and brings down costs. According to another hypothesis, scale economies may also be interpreted at a systemic level by analogy with individual banks ('systemic scale economies'), and consequently, banks active in larger-size (or deeper) markets incur lower costs.

These considerations suggest that as banking intermediation deepens, the efficiency gap in the Hungarian banking system will narrow. The marked improvement in cost efficiency seen over the last two years, due primarily to deepening banking intermediation, confirms this expectation (see Chart 2-28). Although at real value bank costs rose by 9% and 4% in 2003 and 2004, respectively, this was more than offset by the nearly 10% increase in the credit-to-GDP ratio during the same period. This stems from the fact that banks can utilise their existing capacities more efficiently owing to strong growth in customer lending, and especially that of housing loans.

From the perspective of financial stability, it is important that over the longer term banks' adjustment to a lower interest rate environment occurs primarily through further improvement in cost efficiency. In the future, natural deepening in banking intermediation may result in a further decline in the ratio of costs to total assets. However, while financial deepening is expected to continue, there is increased risk that its pace will slow down in comparison to the past two years. Consequently, tighter cost management may take on a more significant role in the improvement of banks' cost efficiency.

Chart 2-28

Deepening bank intermediation and the cost to total assets ratio



Note: The credit/GDP ratio is calculated using an average loan portfolio; and loans include lending to non-financial corporations, households and other financial intermediaries.
Source: MNB.

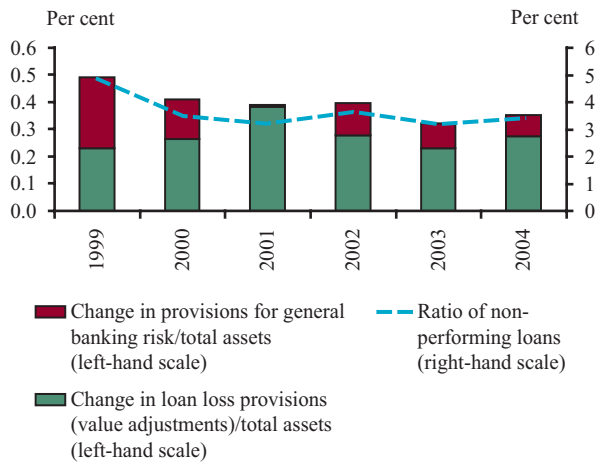
[45] See the following studies: Kunt Demirgüc and Harry Asli-Huizinga (1998): 'Determinants of Commercial Bank Interest Margins and Profitability: Some International Evidence', World Bank, Policy Research Working Paper 1900; and Biagio Bossone and Jong-Kun Lee (2004) In Finance, Size Matters: The Systemic Scale Economies Hypothesis, IMF Staff Papers Vol. 51, No. 1.

Deteriorating portfolio quality and rising provisioning costs[46]

As the only negative element in profitability developments, provisioning costs increased significantly in terms of absolute value compared to the previous year. Loan loss provisioning costs (including provisions for general banking risk) also increased moderately as a ratio of total assets in 2004, in accordance with a slight deterioration in portfolio quality. The moderate increase in the ratio of non-performing loans to total loans was due to the deterioration of corporate loan quality (see Chart 2-29). An analysis of the correlation between provisioning costs and profit before provisioning for the entire banking system over the period between 1999 and 2004 suggests that banks generally do not use provisioning as a means of income smoothing.[47] Banks' behaviour, however, differs to a great degree in this respect. Although the aggregated data do not suggest income smoothing in 2004, with a major improvement in operating profit, many banks increased provisions faster than earlier. Some large banks, however, increased their provisions to a far smaller extent than allowed by their - in certain cases, exceptional - improvement in operating profits.

Chart 2-29

Ratio of provisioning costs to total assets and the ratio of non-performing loans



Note: Data on non-performing loans refer to the loans of non-financial corporations and households.
Source: MNB.

Profitability outlook

With regard to expected interest income developments in 2005, in our assessment the factors hindering an increase in net interest income could be stronger. The increase in interest income may slow as sight deposit margins narrow due to falling interest rates, corporate and household lending growth decelerates, and the ratio of loans granted at very high lending margins declines further within banks' housing loans. These factors may be partly offset if bank lending shifts increasingly towards riskier segments. Banks are likely to make up for part of their revenue losses suffered as a result of the expected slowdown in the growth of the net interest income by raising commissions and fees. Thus, the contribution of net fee and commission income to profitability is likely to increase after a temporary drop.

If income eventually increases at a slowing rate, the maintenance of high profitability may require curbing rises in operating costs. Provisioning costs continue to rise in 2005, primarily as a result of a possible further deterioration in the quality of corporate loans. In this respect, slower-than-expected economic growth and liquidity problems characteristic of certain sectors may entail risks. In sum, however, bank profit generating capacity is

[46] Changes in provisioning costs include changes in value adjustments for loans and provisions for general banking risk.
[47] Changes in the rules of provisioning for general banking risk bias this relationship. Banks were required to make provisions for general banking risk up to 1.25% of their risk-weighted assets by 1999. In 2000 banks were still required to maintain this minimum, however, since 2001 provisioning has been optional.

likely to remain robust, and no considerable decline is to be expected in bank profitability levels over the short term.

In addition to the above, it is important to mention that the special tax levied on banks in 2005-2006 will reduce after-tax profits. Estimations based on 2004 profit indicate that this would add a tax burden of about HUF 20 billion per year for the banking system as a whole. The temporarily levied special banking tax has an adverse impact on banks' profitability and thus the stability of internal capital formation. As banks are likely to continue registering high operating profits, increased taxes are not expected to have a considerable systemic impact.

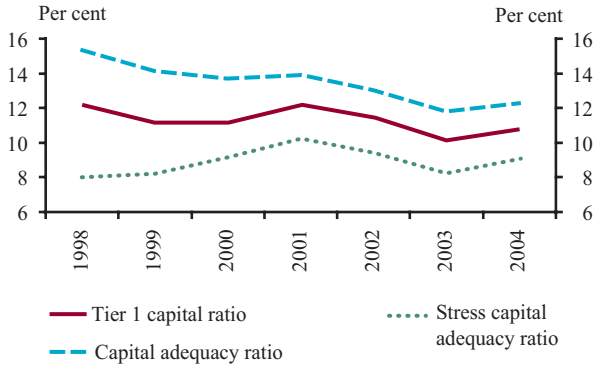
2. 4. 2. Capital position

Banks' capital position remained stable as the end-2004 banking sector capital adequacy ratio (probably) exceeds 12%[48]. From a financial stability point of view, a moderate increase in both the capital adequacy ratio and the Tier 1 capital ratio is a favourable development after several years of decline (see Chart 2-30)[49]. The rise in the Tier 1 based stress capital adequacy ratio (stress CAR) is indicative of improving shock absorbing capacity of the banking sector, even assuming an extreme scenario.[50]

Another favourable development is that due to banks' strong profitability and a high ratio of reinvested earnings, internal capital accumulation remains the primary source of capital increase. The fact that the stress CAR exceeds 8% for six of the ten largest banks indicates the increasing ability of the banking system to withstand shocks (see Chart 2-31). However, the banks 'below the line' have not improved their situation, and two large banks still do not have sufficient (Tier 1 type) buffers to absorb a shock in the case of an extreme scenario.

Chart 2-30

Banks' capital adequacy ratios



Note: In order to calculate the stress CAR, both the numerator and the denominator in the Tier 1 capital ratio are adjusted for the net value of non-performing assets.
Source: MNB.

Despite favourable developments in the capital position of the banking sector as a whole, it is important to point out that there are considerable differences between banks in terms of solvency. Despite increasing internal capital accumulation, a few large banks' capital adequacy ratio remained at around 9% at the end of 2004.[51] The market share of banks operating with a capital adequacy ratio below 10% can be considered relatively high in an international comparison. In 2003, these accounted for a mere 10.5% in the EU-15 and 14% in the ten new Member States, as opposed to 25% in the Hungarian banking sector. It is also worth mentioning that this ratio has stabi-

[48] The estimated end-2004 indicator is calculated by a 70% reinvestment of the preliminary after-tax profit, unless the information available on the expected dividend payment at the time of writing the Report justifies a lower ratio.

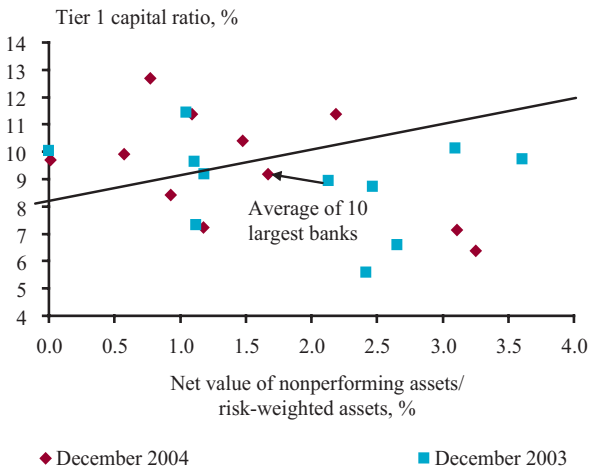
[49] Under the relevant statutory provisions, capital requirement for exchange rate, commodity and trading book risks is excluded from the calculations. Thus, the measures to be taken in the case of non-compliance with the ratio do not apply either; therefore, for purposes of comparability, we use the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

[50] The stress CAR is calculated with the assumption that in the wake of an eventual shock, banks must write off the full net value of current non-performing assets.

[51] Moreover, some large banks' interim capital adequacy ratios (which do not include the accumulated profit of the current year) exceed the 8% minimum requirement only to a small extent.

Chart 2-31

Ten largest banks' Tier 1 capital ratio and non-performing assets as a percentage of risk-weighted assets



Source: MNB.

lized at a higher level despite the outstanding bank profitability seen in the past few years.

The fact that some banks with a relatively tighter capital position have smaller buffers to withstand unexpected shocks may represent a risk. Such risks are, however, considered as modest in the short term. First, as banks' profit generating capacity is likely to remain strong, adequate internal capital formation can be maintained even if profits grow at a slowing pace. Second, due to their stable ownership, domestic banks can most probably expect capital increases from their parent banks even in the case of an unexpected shock. Taking a longer perspective, with the introduction of the Basel II Capital Accord requirements, banks' capital management may face a significant challenge. Although the new regulation may have numerous favourable effects, some argue that as a negative effect it might contribute to an increase in capital volatility. For this reason, in the preparation period prior to introduction (2005-2006), it may be more important for banks currently operating with a tighter capital position to increase buffer capital above the minimum requirement.

3 Special topics

3. 1. Risks in non-bank financial intermediation

Over the past few years, non-bank financial intermediation has been taking an increasingly high-profile role in Hungary.[52] Financial enterprises are shouldering an increasingly significant share of financing households and corporations.[53] Within the span of just a few years, the sector doubled the amount of financing it extended, and in 2004, the average amount of outstanding loans exceeded 6% of GDP. The share of household savings deposited with institutional investors is increasing: while in 1998 they accounted for 3% of GDP, in 2004 they contributed 13%. As the majority of non-bank financial corporations have intricate links with banks via ownership and other relations, an analysis of the banking system is incomplete without a description of the activities and risks of such institutions.

The significance of non-bank financial intermediaries in terms of stability lies primarily in the fact that the net financial assets of the non-financial private sector are heavily affected by financing and the available savings alternatives. At the sectoral level, they generally represent little direct risk to stability. In respect of the activities of financial corporations there are certain factors that currently give room for uneasiness in Hungary, and operating problems are discernible in the case of pension funds.

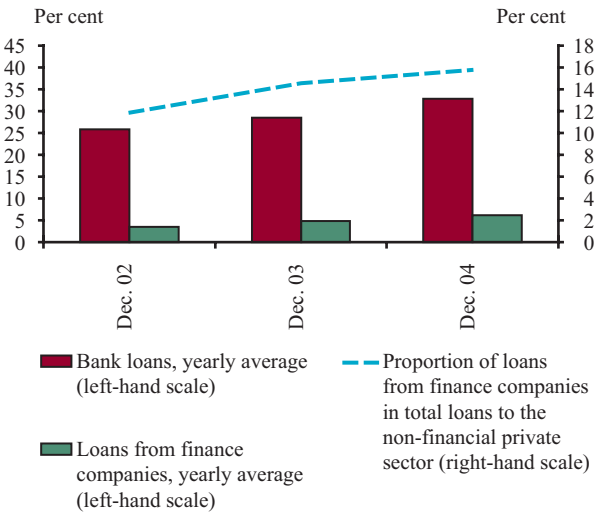
3. 1. 1 Financial enterprises

The role of financial enterprises in financing the non-financial private sector

Financial enterprises play an increasing role in financing the non-financial private sector at the expense of banks. At end-2004 their share already approached 16% (see Chart 3-1). These institutions are especially significant in household con-

Chart 3-1

Non-financial private sector loans as a percentage of GDP, and financing granted by financial enterprises



Source: MNB.

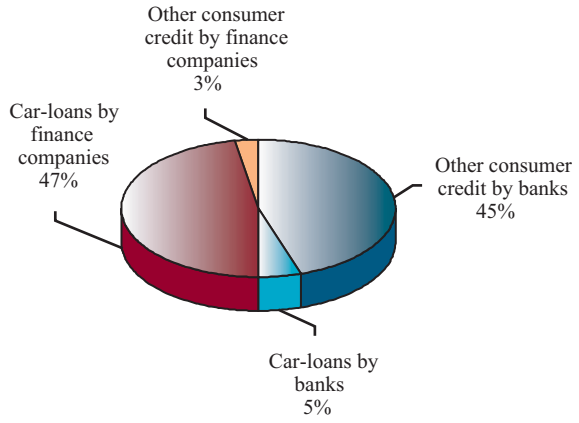
[52] The institutions analysed within non-bank financial intermediaries (financial enterprises, life insurers, pension and investment funds) are identical with those included in earlier reports.

[53] The analysis of financial corporations is based on data required by the Hungarian Financial Supervisory Authority from financial corporations pursuant to a memorandum of understanding between the HFSA and the MNB.

sumer lending, and more specifically in car purchase loans: more than 90% of the HUF 860 billion stock of car purchase loans of households has been extended by financial enterprises (see Chart 3-2).

Chart 3-2

Division of consumer loans between banks and financial enterprises, December 2004



Source: MNB.

Risks to financial enterprises and car purchase loans

In the sector of financial enterprises, the past few years saw aggressive competition in the field of car purchase loans, culminating at the beginning of 2004 in the appearance of definitively high-risk products and low margins on loans. The adverse effects of massive growth in conjunction with an easing in lending standards was revealed as early as 2003 in the deterioration of loans. In 2004, part of the sector - primarily bank-owned corporations - experienced decline in profitability, partly because large amounts were accounted for as value adjustment, and partly as dealers' commissions had settled at high levels, whereas margins had fallen. In 2004 H2, rearrangement began and margins slightly rose, but several significant risk factors still obtain. The high exposure to credit risk, which follows from the sector portfolio, contributes to the banking system's overall credit risk to a major extent.

The sector is highly concentrated: the 10 largest groups of 210 financial enterprises account for nearly 90% of the total amount of outstanding loans. Banks have an extremely strong interest in the sector: bank-owned financial enterprises[54] account for 20% of the sector, holding 70% of the roughly HUF 1,600 billion balance-sheet total. Nine out of the ten largest groups are in bank ownership. In addition to bank-owned enterprises with a predominant role in the sector, another group of companies, the so-called 'captive finance' enterprises[55], subsidiaries of non-bank financial institutions with a strong presence in the international market, clearly started emerging by 2004. This group represents 10% of the market, whereas their market share increased to 22% in 2004. The group of international financial service providers had a major part in sharpening competition in the sector.

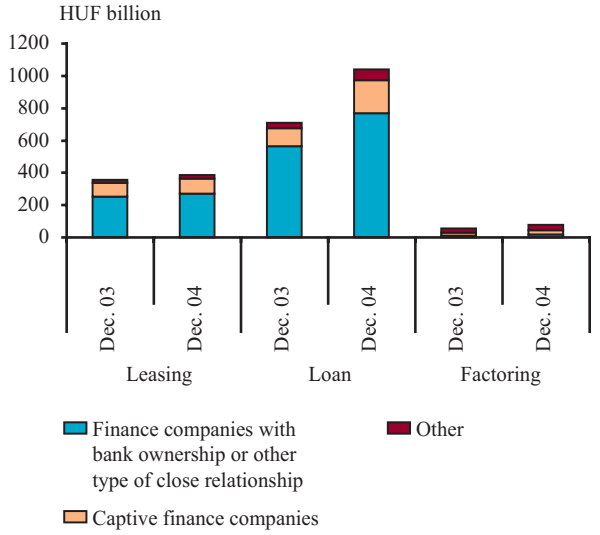
In the past few years, lending has become the primary source of growth for financial enterprises. Factoring and traditional leasing lines increase lending only moderately (see Chart 3-3). In 2004, car purchase loans accounted for 75% of the nearly HUF 400 billion increase in lending by the sector. The growth rate slowed in comparison to 2003 as a result of market saturation rather than tighter lending standards.

[54] Here we use the term 'bank-owned' for a financial enterprise if it is in the direct or indirect ownership or under the controlling influence of its parent bank.

[55] The term 'captive finance' is generally used by international non-bank financial institutions engaged in car financing. Hereinafter the group of high-profile financial enterprises with members engaged in car financing and owners that are 'captive finance' enterprises or other enterprises engaged in financing (personal lending, hire purchase and factoring) and in the ownership of international financing enterprises are termed as 'international financial service providers'.

Chart 3-3

Loans granted by financial enterprises in a breakdown of business lines and major groups[56]



Source: MNB.

The risk factors observed in the previous years in lending for car purchase persisted in 2004. Numerous enterprises continue to offer financing at low downpayment, although due to earlier unpleasant experiences and losses, most businesses backed out of extremely high-risk schemes (e.g. imputation of 'junk cars') in 2004. The low downpayment requirement attracts households in poor income situation, which involves higher risk. Moreover, as such debts are highly likely to exceed the market value of the car, the value of the collateral for the loan gradually decreases. Financing of used cars implies similar concerns.

The pricing war fought with commissions and interest rates further enhances risk to car financing. In 2004, the commission paid to car dealers settled at the earlier achieved high rate (6%-10% of the contractual amount). In order to boost demand, which had dropped drastically in early 2004, first international financial service providers and then the bank-owned enterprises cut interest rates and APRC in an unprecedented measure to gain market. In 2004 H2, margins slowly started to recover. The spread of foreign currency-based lending enhanced credit risk. In 2004, new contracts were concluded practically only in foreign currency, primarily in Swiss francs. At the end of 2004, foreign currency-based loans accounted for no less than 80% of the total loan portfolio.

The above factors suggest that the existing portfolio carries considerable risk. Most market-leading firms reported a major increase in the number of cars taken back, which is highly indicative of the risk inherent in the loans granted in preceding periods and their deterioration.[57] The rate of overdue loans in the portfolio, the amount of value adjustments and the profit reflect only part of the risks involved.

The rate of overdue loans did not change considerably[58], however, the individual businesses differed considerably. Some of the market-leading businesses accounted significant amounts of value adjustment: it seems that these businesses anticipated losses on the portfolio by more rigorous standards than earlier, and despite the decline, the 2004 profit still allowed most businesses to account higher amounts of value adjustment.

In contrast to credit risks, the significance of market risks is low in this sector. This is because in terms of both foreign currency distribution and repricing, financial corporations adjust their refi-

[56] For the sake of transparency, the chart only plots data for bank-owned enterprises and international financial service providers.

[57] Estimates indicate that car financers may have taken back around 10,000 cars over 2004, which represents 1% of the total loans outstanding. Most frequently, cars were taken back under contracts where junk-cars had been imputed or those that had not required downpayment.

[58] As certain claims were sold and others excluded from the portfolio after the cars had been taken back, the ratio of overdue loans to the existent portfolio fails to accurately indicate real losses on lending.

Table 3-1

Return on assets (ROA)[59]

	Dec. 03	Dec. 04
Finance companies with bank ownership*	3.7%	2.8%
Captive finance companies	5.8%	6.5%
Other	9.6%	9.3%
Total	4.6%	4.0%

Source: MNB.

nancing structures, funded by parent banks or other sources, to their loans outstanding, as this way they can considerably reduce exposure to exchange rates and interest rates.

Despite increased business activity, in 2004 there was hardly any change on the previous year in the aggregated profit financial enterprises registered before taxes, which amounted to nearly HUF 40 billion. The sector's return on assets declined, although remaining high. Nevertheless, the individual business lines, enterprises and groups differ widely across the sector (see Table 3-1). This can be explained by the following:

– The various businesses accounted value adjustments in widely different amounts. Bank-owned businesses usually accounted far higher value adjustments than international financial service providers and groups of other enterprises, which realised outstanding rates of return on assets. In the two latter cases, the amount of value adjustment is probably inadequate compared to portfolio quality.

– The majority of the loans still allow a margin that yields an appropriate return. However, the risk remains that in some cases the decline in the margin is excessive.

– Owing to their ownership structure, businesses in the group of international financial service providers operate under different conditions than bank-owned enterprises. Most frequently, they benefit from the size-related advantages of their owners, as they are present worldwide or all over Europe, and so they can profitably operate even at lower interest margins.

– In addition to the above, the wide differences between the performances, profiles and cost settlement practices of the individual businesses render a sector-wide assessment of return even more difficult.

There are close ties between the sector and the banking system. In addition to capital, bank-owned enterprises are financed almost completely by their parent banks through loans, and capital gearing is on the increase in the case of non-bank owned businesses as well. For this reason, the risks building up in the sector's loan portfolio considerably increase risk exposure in the banking system, because banks generally do not set limits for the enterprises in their ownership.

Expected trends in the activities of financial enterprises

As in lending for car purchase, market participants' propensity to maintain or increase their market share is fairly high, and their parent banks or owners will continue to put lending pressure on

[59] Return on assets was calculated on the basis of the average balance sheet total and the profit before taxes.

them in 2005. Once all the possibilities inherent in price competition have been exhausted, a shift towards high-quality services (e.g. residual financing[60]) may provide for progress and a successful business strategy.

After the boom in lending for car purchase dies down, financial enterprises are expected to increasingly enter the field of financing SMEs. The support programmes of the European Union and the European Development Bank have contributed greatly to the financing of this segment and its access primarily to leasing facilities.

In the field of leasing, excessive focus on a single asset (i.e. car) results in a biased structure and renders the business line vulnerable. In international practice, the rate of other machines, equipment and real property is much higher; the Hungarian market, however, does not seem to have moved in this direction up to now.

Factoring also exhibits growth potential as in Hungary the rate of financing through factoring is low even by international standards. The fact that two major banks have entered the market by purchasing factoring enterprises may give impetus to this field of business.

From the perspective of financial stability, the expected increase in diversification of customers, assets and activities is considered favourable.

Box 3-1 Challenges related to regulation of financial enterprises and accession to the European Union

For several years the sector has been calling for a minor limitation of competition in order to ease risks. The sector's demand for self-organisation and regulation has found expression in the Hungarian Leasing Association's Code of Conduct, which, however, cannot provide a complete solution as it is not compulsory. Most market participants even consider central regulation as a possible solution to control the conditions of competition.

Excessive risk-taking can be limited in two ways: by consumer protection regulations, which are meant to raise customers' risk sensitivity and awareness, or guiding rules for the conditions of financing, not unknown in the international practice (e.g. minimal downpayment requirement, maturity and loan amount ceilings, etc.). In both cases, the process of regulation takes a rather long time, and by the time the rules take force, the portfolios of businesses may have been filled with poor-quality loans. They can have a major significance only for business lines launched subsequently.

The most conspicuous changes affecting the financial enterprises due to accession to the European Union also took place in the regulatory framework. The possibilities of providing cross-border services and establishing branch offices opened up for financial enterprises. However, masses of new participants are not expected to appear, as international non-bank financing institutions had already entered the Hungarian market in significant numbers in the form of establishment of subsidiaries or acquisition of shares prior to the country's accession to the European Union.

In other fields, primarily in leasing, market participants expect EU membership to promote the termination of certain factors that impede market expansion, e.g. the reduction of duties, which are considerably higher than in other EU member states and hinder the spread of real property leasing to a major extent.

[60] Under this scheme, the financier can pledge customers for a long term. 2-5 years after the loan is taken out and the new car is purchased, the customer can buy a new model with the residual value of his old car set off up and the difference paid (naturally, from a new loan).

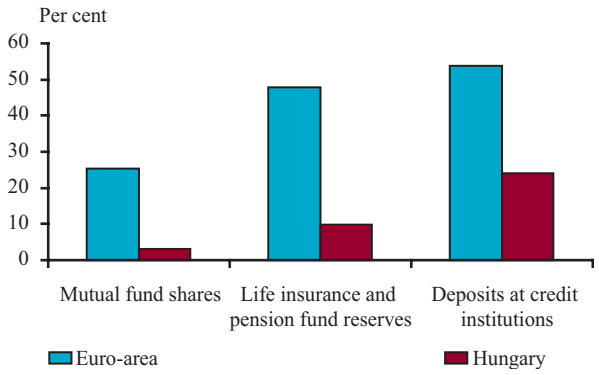
3. 1. 2. Institutional investors

Changes in institutional investors' significance in financial intermediation

In Hungary, institutional investors are gradually increasing their significance in financial intermediation, although they are of less importance than in other Member States of the European Union (see Chart 3-4). In the longer term, as the population's financial education and investment-consciousness increases, these institutions are predicted to gain further significance.[61]

Chart 3-4

Household savings deposited with financial intermediaries, as a percentage of GDP, 2004, a comparison of the euro area to Hungary



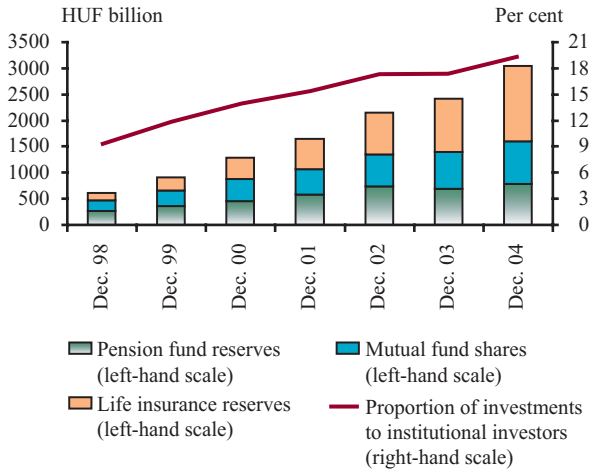
Source: ECB. Data for the euro area: September 2004, annualised GDP, investment funds include the complete portfolio of the non-financial private sector. (For Hungary: September 2004 data).

Through a revaluation of their investments, the unfavourable money and capital market developments observed in 2003 H2 and early 2004 hit each of the three sectors hard. However, on account of their peculiar features, their significance in household savings developed in slightly different ways (see Chart 3-5).

The population's frequently unreasonable behaviour (they buy at a high and sell at a cheap rate)

Chart 3-5

Household savings deposited with institutional investors, volume and share in the gross financial assets of households



Source: MNB.

was clear in the case of investment funds. At late 2003 and early 2004, the assets managed by investment funds fell drastically as a result of declining exchange rates and asset withdrawal by investors. As market developments took a favourable turn, in 2004 H2 portfolio revaluations and net capital inflow once again increased the assets managed by investment funds. The largest inflow of capital was recorded at the end of the year, with constantly rising daily rates of investment fund units. In 2005, further increase is expected in the assets held by the funds. Investors' confidence has returned, and as the yields of other instruments fell considerably, the rising backward-looking yields offered by investment funds once again became attractive.

Changes in investor behaviour are less detectable in the case of life insurance savings, although unit-linked life insurance increased at an accelerating pace in late 2004. Due to a nearly 17% annual rise in life insurance reserves, life insurance slightly

[61] Non-financial enterprises only own investment fund shares within types of savings offered by institutional investors. Investment funds' share in non-financial enterprises ' gross financial assets was a mere 3.3%, thus we only investigate household savings in this section. For a detailed discussion of the structure of household savings, see Box 3.

increased its share in household savings just as in the previous two years. Acceleration can be expected only in the longer term. In the short run, other factors (e.g. reduced tax allowances) only allow a slow building up.

Private pension savings are primarily affected by the legislative background[62], while in the case of voluntary pension funds employer contributions to membership fees provide a major incentive. Due to a constant rise in the number of members and revenues collected from membership fees, pension funds experienced a continuous rise in their share in household savings over 2004[63]. In late 2003 and early 2004, the money and capital market developments left their mark primarily on the market value of managed assets and pension fund yields.

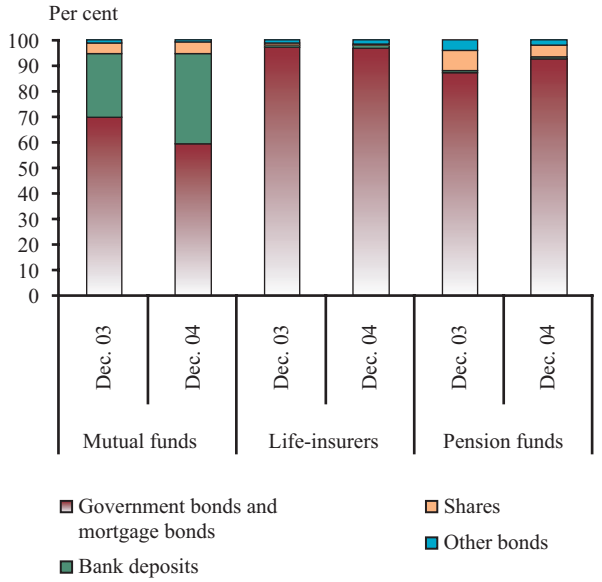
Institutional investors' portfolio

Hungarian institutional investors did not change their conservative investment policy in 2004, with low-risk bank deposits and securities (government securities and mortgage bonds) continuing to dominate their portfolio (see Chart 3-6). Consequently, the macroeconomic, and money and capital market developments in 2004 impacted institutional investors' assets and performance primarily through government securities.

Due to the differences between their investment structures, the individual types of investment funds were affected by capital withdrawal and rate changes in various ways. As a result, the individual types of funds underwent major changes in terms of their significance according to the amount of assets in their management.[64] The net asset value of

Chart 3-6

A breakdown of institutional investors' portfolio



Source: MNB.

domestic bond funds, which earlier had been the driving force behind growth and are considered to bear low-risk yields, dropped by approximately HUF 65 billion (12%) in 2004. An outstanding annual amount of capital inflow (HUF 124 billion, i.e. 70%) went into domestic money market funds, which also exhibit a relatively low risk profile.

Due to high yields on government securities, institutional investors were once again able to record outstanding yields in 2004, following several years of poor performance. The good performance of the equity market towards year-end also contributed to this, although only to a minor extent. As interest rates fall, pension fund and life insurance portfolios are expected to shift towards riskier but higher-yield investments (equity, corporate bonds, etc.) over the long term.

Although investment funds offer a wide range of fund types representing various risk-levels, at the

[62] Young people starting to work are required to join private pension funds, and those of working age but below 30 who earlier chose to join the social security system are allowed to transfer their membership to private pension funds. Changes in contribution payment include the following: membership fee has been raised to 8%; and the maximum payable amount of membership fee has been increased by over 30%.

[63] In voluntary funds revenues collected from membership fees grew far slower than in private pension funds.

[64] Classification is based on the features of funds (Hungarian Association of Investment fund Managers - Bamosz - recommendation), and still, in some cases, the portfolios managed by the funds differ from what would follow from the specific fund category. This means that the name attached to a fund does not warrant that the specific fund is engaged only in the activities denoted in its name.

time being private investors remain risk-averse: low-risk bond and money market funds absorb more than 70% of the managed assets, and their share is declining only very slowly.

Sector features of institutional investors and special risks to their operation

The aggregate risks to the life insurance sector are insignificant, and so the sector operates smoothly and profitably. Due to the conservative policy followed in this sector, currently the only risk to investments is involved in the guaranteed return (technical interest rate, currently 4%)[65]. As the guaranteed return rate remains unchanged for the entire term of the insurance, if interest rates constantly decline, this may pose an increasing risk over the long term. This risk is reduced by the fact that the high rate of contracts terminated before original expiry tends to shift life insurance towards shorter maturities. The maximum rate of guaranteed return will likely be reduced in 2005.

The Hungarian life insurance market remains highly concentrated: 80% of the market is in the hands of the five largest companies. Concentration is decreasing slowly and gradually. Although a transitional period is provided, tightening requirements on regulatory capital[66] are quite likely to prompt a few smaller companies to transform into branch offices or merge with larger corporations. Following Hungary's accession to the EU, a large number of foreign participants indicated their intention to enter the Hungarian market to provide cross-border services; however, these are likely to be highly specialised services focused on small groups of customers. The process of strengthening cooperation between banks and insurance companies ('bancasurance')[67] launched in the past few years continued.

In several respects, 2004 brought favourable developments for pension funds. The aggregate savings accumulated in the two lines of funds rose at a rate exceeding even the previous year, by nearly 30%, reaching approximately HUF 1,300 billion by late 2004 (private funds shared nearly HUF 800 billion of this). Pension funds realised outstanding annual yields between 15%-20%, representing 8%-12% in real terms.

There was no change in private fund participants since 2002: of the 18 private funds 5 were established by banks and another 5 by insurance enterprises. Private funds are rather highly concentrated: 6 pension funds share over 80% of the members and assets. The slow consolidation of voluntary funds has continued. By year-end, the number of market participants had dropped to 75 through mergers, six of which were established by banks.

In addition to the favourable developments seen in 2004, several operational (i.e. efficiency) problems in the sector deserve attention on account of the special macroeconomic role of pension funds. These factors pose risks in the longer term and primarily not to the stability of the financial system, but rather to the operability of the pension system and macroeconomic equilibrium. These problems arise first and foremost from the absence of genuine competition, weak proprietary control due to the legislative form, and in the case of smaller (primarily voluntary) funds, from inefficient operating size.

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[65] Although the investments connected with the reserves of unit-linked insurances have a far riskier composition, these risks are borne by the customer.

[66] Insurance enterprises are required to continuously hold the regulatory capital needed to meet the minimum security capital and/or minimum regulatory capital requirement. The minimum regulatory capital is proportionate to the risks undertaken by the specific insurance company, while the minimum security capital is an absolute number.

[67] A detailed discussion of the Hungarian and international trends in bancasurance is given in the June 2004 issue of the Report on Financial Stability by the MNB (pp. 83-84).

Box 3-2 Operational problems in the pension fund sector

- Private funds' operating costs per member significantly exceed the corresponding figure recorded for voluntary funds. The underlying reason for this may be the fact that in contrast with private funds, voluntary funds face far sharper market competition, which prompts them to run the funds more efficiently.
- However, only non-bank owned funds participate in genuine competition. According to market information, across both kinds of funds, those funds that are owned by insurance companies and banks are compelled to pay higher-than-average fees to corporations charged with administrative duties and characteristically included within the same financial group. This feature may conceal intra-group income transfer. The same holds in the case of asset management fees. The fees paid to asset managers within the same bank group are characteristically higher and less flexible than in the case of asset managers which actually face market competition.
- In 2004, fees paid to asset managers increased faster than fund assets in both lines of the sector. Their proportion to the managed assets also rose.
- The low level of familiarity with the sector's performance by members, due primarily to communication problems, represents a further risk. The majority of members are unaware of the funds' cost structures and developments in yield indicators. Further broadening of the information published by the Supervisory Authority (e.g. disclosure of data on asset management fees) would facilitate the assessment of the individual funds' operational efficiency and position within the sector.
- Voluntary funds may be affected by the first expiry and subsequent expiries of the required ten-year waiting time from 2004, as once the ten-year accumulation period is over, members can withdraw the yield of their savings free of taxes and the accumulated principal upon payment of the taxes due.[68] The HUF 30 billion paid out in 2004 amounted to 35% of the annually collected membership fees. With an increase in capital withdrawn, the fresh resources flowing into voluntary funds will probably be insufficient to offset paid amounts, which may result in a decrease in the managed assets and require a more active liquidity management from the funds.
- The failure of the regulation in force to appropriately handle certain issues of pension allowance payment is a problem for both lines of the sector. Current regulation fails to make it clear who is entitled to pay allowances (funds, insurance companies or both) and under what rules. Elaboration of this regulation would be of pivotal significance, as customers already demand allowance payment from their savings accumulated in voluntary funds.

Investment funds reacted to the loss of assets in late 2003 and early 2004 by raising the number of facilities with guaranteed yield and principal and widening the product range. In adjustment to market expectations, fund managers offer increasingly diverse kinds of increasingly specific investment fund units with clear-cut risks (e.g. units of funds investing in other funds, index-based funds, funds investing in real estates or real estate distributor and development firms, etc.) Prompted by Hungary's accession to the EU, an increasing number of fund managers offer the units of more and more foreign investment funds.

In the case of investment funds, the investors run all the investment risks. Nevertheless, funds' links with banking activities deserve attention: the

[68] Pursuant to the regulation effective as of April 2004, after the ten-year waiting period, the amount of accumulated principal qualifying as a tax base is reduced by 10% every year. Consequently, after 21 years of membership in a fund, the complete amount of a personal account may be taken free of taxes.

majority of investment fund managers with a defining share in the Hungarian market are in (direct or indirect) bank ownership - they hold over 90% of the total amount of assets managed in the market. Investment funds actually supplement banks' product supply and offer alternative resources as they deposit assets with banks.

In principle, the spread of products offering guaranteed returns and the safeguarding of capital may increase the risks that funds face. As returns must be covered by bank guarantee, such implied risks are ultimately run by the parent banks within banking groups. In view of the return rate currently undertaken by investment funds, which can be deemed as realistic, the special features of the facilities and the small amount of guaranteed capital relative to the total sum of assets managed in the sector, at the time being guaranteed funds do not increase significantly the parent banks' risks.

3. 2. Payment system operation and the risks involved

The central bank is responsible for the development of a national payment and settlement system, facilitating the safe, efficient and smooth operation of payment systems and securities settlement systems, and the regulation of the circulation of money in order to provide high quality payment services. In the performance of its responsibilities, powerful instruments are provided for the MNB in the Central Bank Act, the Credit Institutions Act and the Capital Market Act. In its capacity as a service provider, the MNB operates the VIBER system, overseeing it, performing regulation, licensing, control and data collection, and if required, taking measures. Payment systems have a significant role in putting monetary policy principles into practice and maintaining the stability of the financial system.

3. 2. 1. Major legal changes affecting the MNB

Pursuant to the provisions of the act amending the Central Bank Act, with effect from 1 May 2004, the MNB's tasks related to the circulation of payments have changed as follows:

• With regard to the fundamental responsibilities of the MNB, the amendment of the Central Bank Act has extended oversight, a power within the scope of responsibility for the safe and efficient operation of payment and settlement systems, to securities settlement systems. In keeping with this, the Central Bank Act has authorised the MNB to issue and codify decrees with regard to securities settlement systems. In addition to payment clearing houses, the MNB is also entitled to issue decrees to instruct securities clearing houses.

• As of 1 May 2004, within the framework of its regulation of payment circulation, the MNB sets forth the rules required for the provision of preliminary and subsequent information to customers, the methods of payment and their application.

• Act XXIII of 2003 on settlement finality in payment and securities settlement systems came into effect on 1 May 2004. In its capacity as a body entitled to specify the systems that fall under the scope of the act, in public administrative procedures the MNB specified GIRO Rt. (Interbank Clearing System) and KELER Rt. (securities settlement system).

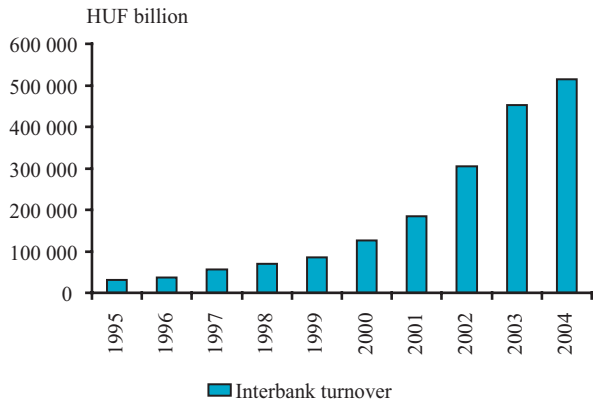
3. 2. 2. Interbank payments

The two major settlement systems are the Real-time Gross Settlement System (VIBER) operated by the MNB and the Interbank Clearing System (BKR) run by GIRO Elszámolásforgalmi Rt. (see Chart 3-7).

Their combined turnover was 24.7 times the projected GDP data, slightly higher than the previous year's ratio, which was precisely 24 times projected GDP. In 2004, the MNB's systems handled roughly 90% of the value of payment transactions.

Chart 3-7

Interbank payments, 1995-2004



Source: MNB.

The Central Clearing House and Depository (KELER Rt.) settles the equity, government security and futures transactions of the Budapest Stock Exchange, the futures transactions of the Budapest Commodity Exchange and OTC government securities transactions. Cash settlement of these transactions is undertaken via the VIBER system in cases when at least one of the counterparties involved in the transaction is a bank. The combined value of the three markets was HUF 41.8 trillion in 2004, up 28.8% on the previous year.

3. 2. 3. Liquidity conditions of payment and settlement systems

Banks transact their payments against their account deposits and security as collateral, with the help of an intra-day credit facility ('limit') granted by the MNB. In 2004, the average daily portfolio accumulated by banks on the intra-day credit line exceeded the corresponding 2003 data by 36% (see Chart 3-8). In comparison to the earlier period, banks had more abundant liquidity, of which they clearly preferred to use the free intra-day credit. The average daily turnover amounted to 2.5 times the daily liquidity in the course of the year. In an international comparison, VIBER's liquidity can be considered as extremely high.

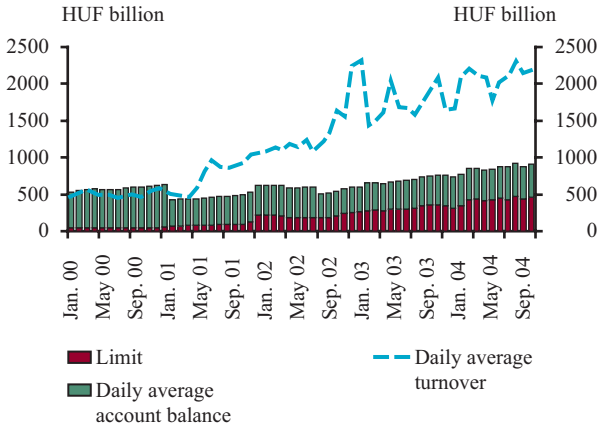
Simultaneously with a massive increase in end-of-day loans, the amounts deposited with the central bank dropped to one-third of their 2003 value during 2004, which implies a more even distribution of depositing in the course of 2004 than in 2003.

With regard to VIBER, there was a favourable change in the trend: the settlement of payment orders did not shift towards the end of operating hours. In the year under review, the majority of transactions were performed in the first half of the business day. In terms of value, the situation is even more favourable: 51.4% of the transactions occur before noon, while the corresponding 2003 figure was 45.2%. In comparison to 2003, the hours above and beyond the official operating hours extended at VIBER-members' request dropped drastically. The reason for this lies in the 2004 tightening of the rules of operating hours (see Chart 3-9).

The frequency of queuing developed well, declining by a 6%. However, the amount of queuing payment orders increased by 13.9% compared to 2003. By the end of each business day, collateral had been raised in each case, and no single queuing item was cancelled at the end of the day. The

Chart 3-8

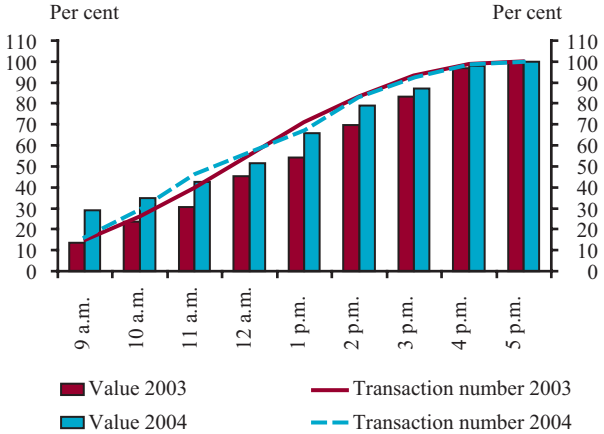
Comparison of the average daily liquidity and settlements



Source: MNB.

Chart 3-9

Intraday distribution of payment orders in VIBER, on a certain day in December in 2003-2004



Source: MNB.

cumulated 2004 amount of overnight loans granted by the MNB was HUF 2,924.6 billion, up 54.3% on 2003. The daily average of these loans amounted to HUF 10.5 billion. Overall, it may be established that there was no factor to jeopardise financial stability in terms of payment and settlement systems.

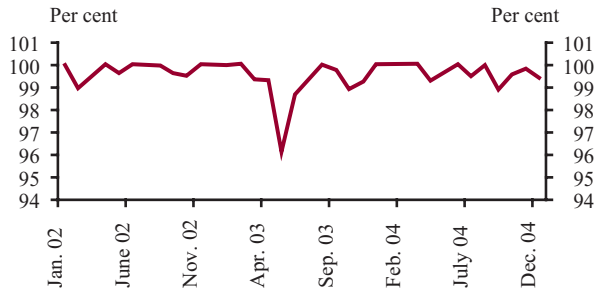
3. 2. 4. Reliability in system operation

VIBER availability was 99.8%, representing a major improvement on the 99.22% measured in the previous year. In the course of the year, work stopped or started late in nine cases (as against 18 in 2003), and the total number of lost operating hours was 6.7. The longest outage took place in September, when the breakdown of network connection and SWIFT relations exceeded two hours (see Chart 3-10).

The availability indicator meets the ESCB's requirements vis-à-vis TARGET. The hot back-up system was not used.

Chart 3-10

Availability of VIBER



Source: MNB.

Extraordinary extension of operating hours was re-regulated in order to improve operational reliability in VIBER. To provide for reliable and efficient system operation, the MNB considered it necessary to adopt a more rigorous practice, and thus in March 2004 it decided to tighten the relevant part of the Business Rules.

As the safety of securities settlements is a high-priority issue in the regulation, KELER's extension request is always accepted. As a result of the new regulation, the number of operating time extensions has dropped and the reliability of operation improved.

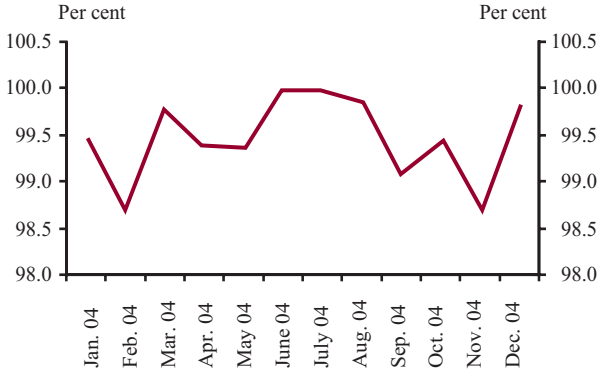
For several reasons, GIRO Rt., the operator of BKR, deviated slightly from the processing times undertaken in its business rules on 23 occasions. These errors did not jeopardise settlement transactions, as a great amount of reserve time is available in the system.

In 2004, there were two crisis situations as per definition in the business rules.

KELER accepts orders for settlement on the same day between 8:00 a.m. and 22:00 p.m. In 2004, there was a major improvement in the availability indicator: from 99.1% in 2003 it rose to 99.5% in 2004 (see Chart 3-11).

Chart 3-11

Availability of KELER, 2004



Source: MNB.

3. 2. 5. Development of systems to maintain stability

KELER Rt's remote reserve system was acquired in early 2004. After the system was put into operation and a test run was performed in the summer, 'live' operation started in November 2004.

3. 2. 6. Oversight and evaluation of settlement and clearing systems by the MNB

The methodology of the MNB's oversight activity was compiled on the basis of methods accepted and introduced by the member states of the euro system and international (BIS and ECB) directives and recommendations for the operation of payment and securities settlement systems and the oversight activities of central banks. The methodology defines and regulates the requirements related to the systems, sets rules for the continuous monitoring and control of the systems through the collection and analysis of data, a regular comprehensive assessment of the systems on the basis of internationally accepted principles and recommendations, and specifies measures deemed as necessary in order to provide for the safe operation of the systems and monitor their performance.

In the course of 2004, the MNB performed a comprehensive evaluation of both VIBER and BKR on the basis of the so-called BIS principles (Core Principles for Systematically Important Payment Systems, www.bis.org). The results of these assessments are presented in Table 3-2.

Table 3-2

Summary of compliance with BIS principles in VIBER and BKR

BIS principle	Requirement in the BIS principle	VIBER	BKR
I.	The system should have a well-founded legal basis under all relevant jurisdictions.	fully compliant	fully compliant
II.	The system's rules and procedures should enable participants to have a clear understanding of the system's impact on each of the financial risks they incur through participation in it.	broadly compliant	fully compliant
III.	The system should have clearly defined procedures for the management of credit risks and liquidity risks, which specify the respective responsibilities of the system operator and the partic ipants and which provide appropriate incentives to manage and contain those risks.	fully compliant	fully compliant
IV.	The system should provide prompt final settlement on the day of value, preferably during the day and at a minimum at the end of the day.	fully compliant	fully compliant
V.	Requirement related to netting systems.	non-applicable	non-applicable
VI.	Assets used for settlement should preferably be a claim on the central bank; where other assets are used, they should carry little or no credit risk and little or no liquidity risk.	fully compliant	fully compliant
VII.	The system should ensure a high degree of security and operational reliability and should have contingency arrangements for timely completion of daily processing.	broadly compliant	broadly compliant
VIII.	The system should provide a means of making payments which is practical for its users and efficient for the economy.	partly compliant	partly compliant
IX.	The system should have objective and publicly disclosed criteria for participation, which permit fair and open access.	fully compliant	fully compliant
X.	The system's governance arrangements should be effective, accountable and transparent.	fully compliant	fully compliant

Compliance with the fundamental principles cannot always be answered with a clear 'yes' or 'no', as the individual principles comprise complex issues.

In ESCB's practice the assignable values can be interpreted as follows:

• 'fully compliant': complies with all the important requirements of the principle.

• 'broadly compliant': there may be a few minor problems, however, these do not undermine compliance with the principle.

• 'partly compliant': more serious problems arise in a few requirements.

• 'non-compliant': serious concerns arise in nearly every requirement.

VIBER broadly complies with core principles II and VII; partly complies with core principle VIII; and, wherever the core principle is applicable, complies fully with all the others.

• Core principle II: the rules do not extend to the handling of customer complaints, the deadlines of their reporting and administration, or compensation payable to system members in the case of late performance for reasons within the service provider's control.;

• Core principle VII: in compliance with the provisions of the Business Continuity Plan VIBER staff has been trained in applications as well as the individual IT systems, which have undergone documented test runs; however, switch over to the hot back-up site has not been tested by every user. The hot back-up site does not have a permanent staff of operators;

• Core principle VIII: The processing capacity of the system cannot be considered optimal, as it is overdimensioned; even at the peak load only 30% of its capacity was used. However, this statement requires no measure, as it has no bearing on either systemic risk or operating costs, and the hardware supporting the system runs on the smallest available platform.

BKR broadly complies with core principles VII and VIII, and fully complies with all the others, provided that they are applicable.

• Core principle VII: the errors encountered in the course of operation are already frequently noticeable for customers;

• Core principle VIII: the efficiency requirement is violated, as the fees charged by GIRO Rt. contain profit in addition to the cost recovery specified in the international principle.

In its capacity as a capital market clearing house, KELER Rt. acts as a central counterparty (CCP) when it uses its own capital to guarantee spot securities transactions and derivative transactions at the stock exchange. The securities used as collateral for loans granted by the central bank in connection with monetary policy operations and payment systems are deposited in favour of the MNB at KELER Rt., in this case acting as the central depository. For this reason, the safe and undisturbed operation of the depository is of major account for the secure and efficient use of the monetary policy instruments of the central bank, the smooth operation of the payment systems and the maintenance of financial stability.

Irrespective of the ECB's expectations, implementation of the central bank's monetary policy objectives and the maintenance of financial stability justify the separation of the central counterparty and depository functions within KELER Rt. into two distinct business organisations.

In order to facilitate the codification of the required statutory amendments, in the spring of 2005 the MNB made a proposal to the Finance Ministry on the amendment of the Capital Market Act in order to separate the depository and securities settlement functions, on the one hand, from classical settlement functions, including the provision of guarantees and risk management, on the other.

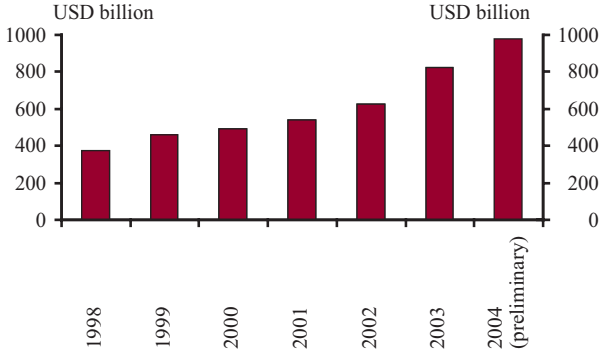
3. 3. Hedge fund activities and exchange rates in Central and Eastern Europe

Recently, market participants and observers frequently give voice to the opinion that non-traditional funds called hedge funds are gaining increasing significance in financial markets. Although these funds may adopt various strategies, most of them share the common features of applying massive capital leverage, undertaking substantial risk, and operating on a shorter investment horizon than traditional and pension funds do. They differ from traditional funds also in the fact that they focus on absolute rather than relative yields (measured against an index or a market segment).

According to market information, an increasing number of investors, including traditional institutional investors, are becoming customers of hedge funds. The following chart reveals that the assets under hedge fund management have increased quite rapidly in the past few years, especially in 2003-2004 (see Chart 3-12). It should be noted that in 2004 H2, hedge fund yields were less attractive, and thus the capital influx into these funds slowed down. Despite this fact, further expansion of the assets under the management of these funds is projected.

Chart 3-12

Assets in hedge fund management



Source: Hedge Fund Research Ltd.

The role of hedge funds may also be interesting with a view to the risk premia of financial assets in emerging markets. At low international interest rates, investors invest increasing amounts in emerging market instruments with improving fundamentals and high yields. A manifestation of the search for yield in global markets is exactly the rapid influx of capital into hedge funds, and the consequent drop in the exchange rates and credit risk premia. Currently, it is questionable if the increasing role of hedge funds and the intensifying 'search for yields' can be considered as structural changes or merely cyclical phenomena resulting from the low interest rates prevailing in developed markets.

In recent months on several occasions the forint exchange rate appreciated against the euro in periods when the US dollar depreciated. This relatively new phenomenon may be explained by another recent development. Although we have no reliable data on hedge fund activity in a regional breakdown, anecdotal information suggests that these 'non-traditional' participants have increased their activity in the Hungarian, Czech and Polish foreign exchange markets. Non-traditional participants are inhomogeneous. They differ in terms of the strategy, the nature and size of the risks they take and the time horizons of their investments. Like anywhere else, their groups alternately dominate the financial markets of Central and Eastern Europe depending on the specific conditions, and consequently, market conditions may change quickly under the influence of global financial conditions. The following presents a discussion of whether hedge funds' intensifying activity can offer an explanation for the appreciation of the Central and Eastern European currencies vis-à-vis

the euro. For lack of data, there is no direct evidence for this hypothesis; nevertheless, the perceivable developments seem to substantiate it (or at least do not preclude it).

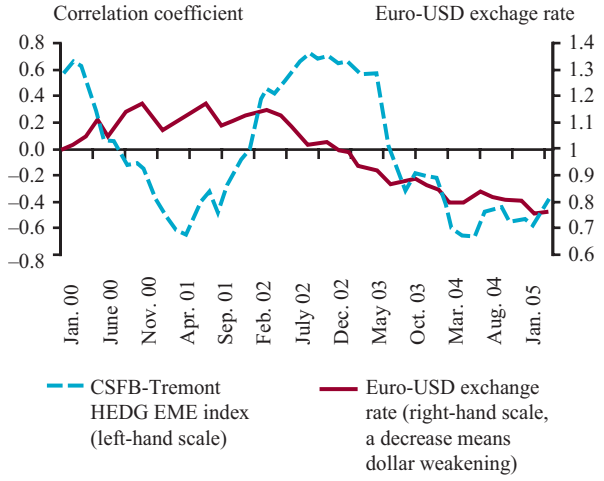
Various information suggests that hedge funds have been expecting a depreciation of the US dollar for a longer time, most probably since the USA's current account problems came into the limelight. For this reason, they increase the weight of securities issued in appreciating currencies in their investment portfolio, while the rate of liabilities in US dollars rises. Securities issued in emerging market currencies not pegged to the US dollar (including the Hungarian forint, the Polish zloty and the Czech crown) naturally fit in a portfolio that benefits from the weakening of the US dollar and strengthening of the euro. Chart 3-13 seems to verify this hypothesis: from 2003 H2, the yields raised by hedge funds active in emerging markets clearly exhibit a negative correlation with the US dollar vis-à-vis euro exchange rate. In other words, they grow if the US currency depreciates and decline if it appreciates. From early 2004, this negative correlation is even stronger.

The next step in our analysis should reveal that the Central and Eastern European currencies strengthen vis-à-vis the euro when the US dollar weakens (actually and probably also in expectations), in other words, when hedge funds can expect to profit from investments made in these currencies. Technically speaking, this may appear in a negative correlation between the Central and Eastern European currencies and the US dollar. Chart 3-14 reveals that since late 2004 or early 2005, this correlation has been actually proven to hold in the case of Hungary and the Czech Republic. Following a definite fall, the earlier characteristic short-term positive correlation between the Polish zloty and the US dollar dropped to zero in 2005 Q1.

In summary, it may be established that our hypothesis is not in conflict with the clear correlations. In other words, it is possible that when occasionally the

Chart 3-13

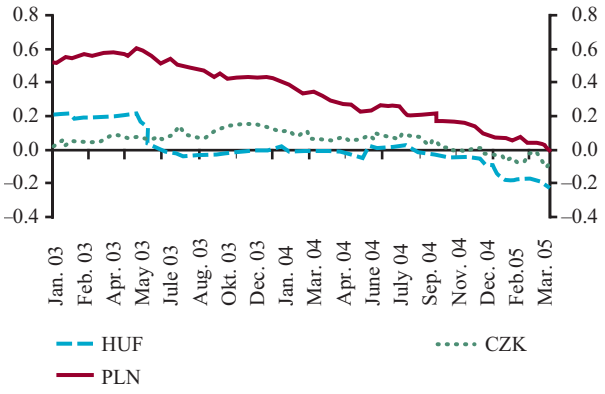
Correlation between the yield index of hedge funds investing in emerging markets and the USD rate, and the EUR/USD exchange rate



Note: The negative correlation means that fund yields improves if the US dollar weakens, while in the case of a positive correlation they improve if the US dollar strengthens. The solid line indicates the 12-month roll-over correlation between the monthly yield index and the monthly EUR/USD rate. The dashed line indicates the 12-month average of the monthly EUR/USD rate (falling values mean depreciation).
Source: CSFB-Tremont and MNB.

Chart 3-14

Correlation between the rates of three CEE currencies and the US dollar against the euro



Note: The chart depicts the correlation between the rates of three Central and Eastern European currencies and the US dollar against the euro. Negative values denote opposite movements: if the US dollar depreciates, these currencies appreciate and vice versa. The chart depicts the 12-month roll-over correlation between daily percentage changes in rates.
Source: Reuters and MNB.

short-term movements of the forint (as well as the zloty and the Czech crown) vis-à-vis the euro are contrary to US dollar movements, this results from non-traditional institutional investors' activity. As expectations of a major weakening of the US dollar are unlikely to cease before the USA's external equilibrium problems are addressed, we must reckon with these participants' presence in Central and Eastern Europe over the long term. Due to their short investment horizons and rapidly changing strategies, they may render the region's currency rates more volatile than justified by the fundamentals.

3. 4. Reviews

3. 4. 1. Máté Barnabás Tóth: Consequences of external imbalances - international experience

(to be published)

According to relevant empirical literature[69], fluctuations in the balance of the current account in developed countries are fundamentally the consequence of cyclical factors, the current account deficit being only a symptom reflecting the internal imbalances of the whole economy and adjusting automatically parallel to the reduction of economic imbalances. Balance of payments crises are not characteristic of developed countries. Contrary to this, according to Edwards[70], current account adjustments in developing or emerging economies are closely related to sudden stops in external capital flows, frequently resulting in currency crises. Several authors[71] point out the fact that owing to more extensive liberalisation and globalisation of capital flows in the 1990s the driving force of current account adjustments shifted from the current account to the financing side, that is, to the capital (or financial) account. The private sector began to play an increasing role in external imbalances (high deficit, unfavourable structure of external debt) - both on the financing and demand side.

In this study, we selected 21 episodes/periods from the data of 24 OECD countries and 13 larger emerging economies between 1990 and 2003 and examined these in case studies. Each country-episode was included in the sample where the current account deficit exceeded 5% of GDP for at least two years, or where there was a more than 3 percentage point improvement (adjustment) of the GDP-related current account balance. Apart from the current account, we also examined the development of traditional macroeconomic indicators (growth and components of GDP, government budget deficit, government debt, net foreign assets, inflation), as well as indicators suitable for measuring aggregate exchange rate and maturity risks.

On the basis of the episodes surveyed in the study we found that very few countries managed to sustain a high current account deficit over the long run. Most current account adjustments exceeding 3 percentage points involved output loss and depreciation of the exchange rate, although the results show high dispersion. Current account adjustment episodes involving significant output loss and considerable exchange rate depreciation are typically associated with a sudden stop in foreign capital inflows or a speculative attack; therefore the existence of a persistently high current account deficit was not a necessary precondition. During the tranquil adjustment episodes with relatively small growth sacrifice, internal adaptation processes played a determining role.

Tranquil adjustment episodes

In non-crisis adjustment episodes where output loss was relatively small[72] the current account imbalance could primarily be tied to private sector

[69] E.g. Debelle, Guy - Galati, Gabriele (2005): 'Current account adjustment and capital flows' BIS Working Papers No. 169, February 2005; Freund, Caroline (2000): Current Account Adjustment in Industrialized Countries FRB International Finance Discussion Papers No. 692.

[70] Edwards, Sebastian (2004): 'Thirty Years of Current Account Imbalances, Current Account Reversals and Sudden Stops' NBER Working Paper No. 10276.

[71] E.g. Roubini, Nouriel - Setser, Brad (2004): 'Bailouts or Bail-ins? Responding to Financial Crises in Emerging Economies' Institute for International Economics 2004.

[72] Chile 1999, Iceland 2001-2002, Portugal 2002-2003, Poland 2001, Slovakia 2003.

Table 3-3

Certain ratios of countries following current account adjustments

Countries	Output loss (% point)*	Current account balance (GDP%)	Public sector deficit (GDP%)	Average inflation (CPI)	Currency depreciation (%)	AECM[73]	STD/TR[74]	Domestic credit to private sector (GDP%)	
	t	a[t-3;t-1]	a[t-3;t-1]	a[t+1;t+3]	d[t-1;t]	[t-1]	[t-1]	d[t-5;t-1]	[t-1]
Crisis episodes									
South Korea t=1998	13.6	-2.6	-0.3	2.4	47.3	-12.4	..	14.4	78.8
Indonesia t=1998	20.0	-2.9	0.9	12.3	244.2	-30.9	1.98	11.8	60.8
Malaysia t=1998	16.4	-6.7	1.3	1.9	39.5	-1.0	0.72	51.9	158.4
Thailand t=1997-1998	19.9**	-7.3	2.3	1.2	63.2	-20.3***	1.45***	54.3	165.7
Argentina t=2002	8.0	-2.9	-4.6	8.9	206.0	-282.4	1.37	-1.1	20.8
Mexico t=1995	9.5	-6.5	1.6	23.6	89.9	-32.5	6.27	21.2	38.7
Turkey t=2001	9.4	-1.6	-11.0	26.3	96.0	-41.7	1.28	0.9	23.7
'Tranquil' episodes									
Iceland t=2001-2002	2.5**	-8.0	2.6	2.1	16.5**	..	..	50.8	100.8
Chile t=1999	7.4	-4.9	1.4	3.3	10.5	-0.5	0.10	11.3	63.4
Poland t=2001	3.3	-6.2	-1.4	1.3	-8.4	-8.8	0.37	6.7	27.7
Portugal t=2002-2003	3.7**	-9.2	-3.3	..	0.0	..	..	50.3	147.9
Slovakia t=2003	-0.5	-6.7	-8.0	..	-2.8	..	0.48	-13.8	40.6
Intermediate episodes									
Czech Republic t=1998	4.2	-5.5	-0.2	3.6	4.3	6.4	0.83	2.5	75.7
Hungary t=1995	-1.7	-5.9	-6.7	18.7	31.6	-37.8	0.15	-20.1	26.5
Slovakia t=1999	3.6	-9.7	-3.8	7.6	11.6	..	1.60	12.9	54.4

a: average, d: change

** Relative to the three-year average preceding the adjustment period*

*** Cumulative*

**** 1997 value*

Sources: IMF IFS, World Bank WDI, Eurostat, MNB, own calculations.

[73] AECM (aggregated effective currency mismatch) is a measure of currency mismatch, pioneered by Goldstein and Turner (2004), that reflects the level of risk stemming from currency mismatches in the aggregated balance sheets of economic agents. AECM = (NFCA/XGS) (FCD*100/TD) Where NFCA is the net foreign currency asset position of the whole economy, XGS is export of goods and services, and FCD*100/TD is the foreign currency denominated part of the total debt stock in percentage terms.

[74] The ratio of short-term foreign debt to official foreign currency reserves.

activities. During the adjustment process of the private sector the authorities tried to maintain the continuity of capital inflows and prevent an excessive weakening of the nominal exchange rate by tightening monetary policy, while they tried to avoid an excessive contraction of internal demand with the help of automatic fiscal stabilisers and discrete fiscal measures. An important precondition for the efficiency of stabilisation measures is a close-to-balance budgetary position and a credible monetary policy. The relatively low exposure of economic actors of the these countries to unhedged currency risk and the lack of a sudden and complete stop in capital inflows considerably contributed to the fact that they did not suffer a crisis-like adjustment.

Crisis episodes:

Amongst the obviously crisis-like current account adjustment episodes under review[75], there were only three cases when the pre-adjustment deficit of the current account persistently exceeded 5% of GDP. Crisis-like adjustments were in each case accompanied by a collapse of a strictly managed exchange rate regime. In the case of South East Asian episodes, the current account imbalances were mainly the result of private sector activities, which was also reflected in the extremely high investment rates indicating over-heating. In the case of the other countries the public sector had a substantial direct role in creating economic imbalances. Current account adjustment characteristically took place as a result of a stop in capital inflows in the context of lost investor confidence with regard to the solvency of economic participants indebted in foreign currency and with regard to the credibility of the fixed exchange rate, or in the wake of financial contagion.

In the case of crisis-like episodes it is important to emphasize the role of the risk exposure or vulnerability factors inherent in the aggregate balance sheets of economic actors (typically the corporate and/or the public sector), which can be made responsible for a considerably higher growth sacrifice and for the crisis-like evolution of the adjustment process. The typical balance sheet vulnerability factors were currency and maturity mismatches and liquidity risks A significant weakening of the foreign exchange rate, led to substantial capital losses in portfolios with unhedged currency risk while maturity mismatches resulted in serious liquidity problems at the time of the sudden stop of capital inflows, which spilled over through the structurally weak financial systems. Thus, during the crisis periods the weakening of the exchange rate did not improve the competitiveness and/or capital attracting capabilities of the private sector, but rather worsened it further, causing an outstandingly large depreciation and a large-scale recession, where in several cases the cumulative output loss exceeded 10% of GDP.

In most of the crisis episodes insufficient regulation and supervision of the financial system, implicit government guarantees and a marked presence of politically preferred institutions resulted in underestimation or disregard for the real currency and maturity risks inherent in the balance sheets of economic actors and led to a quick growth in the ratio of non-performing debts, as well as to the development of asset price bubbles or credit booms. During the crisis episodes it was generally observed that fixed or strictly managed exchange rate regimes decreased the perception of currency risk inherent to foreign currency-denominated liabilities, while the quickly increasing currency risk exposure in the balance sheets

[75] Indonesia 1998, Malaysia 1998, South-Korea 1998, Argentina 2002, Mexico 1995, Thailand 1997-1998, Turkey 2001.

of the private sector prompted the authorities to maintain the exchange rate regimes of decreasing credibility ('fear of floating'). Economic actors with balance sheets of combined currency risk and maturity mismatch or rollover risks contributed to the largest extent to the output loss. Typical examples are corporations without export revenues, financing their activities from short-term foreign currency-denominated liabilities or public sectors, financing their expenditures from short-term foreign currency debt.

'Intermediate' adjustment episodes

In the case of 'intermediate' current account adjustment episodes[76], the output loss or the extent of the weakening of the nominal exchange rate was significantly less than in countries where a crisis-like adjustment took place; however, these countries cannot simply be listed in the category of tranquil adjustment episodes either, because the authorities launched a policy based adjustment process in order to prevent a crisis (in Hungary) or in order to arrest the escalation of an already unfolding crisis (Czech Republic, Slovakia). Amongst these episodes, the case of Hungary can definitely be regarded as a twin-deficit situation, but as a consequence of guarantees to the structurally weak banking system the Czech and the Slovak budgets had substantial implicit burdens as well, which surfaced during the bank consolidation launched parallel to the adjustment process.

During the aforementioned episodes, the stop or reversal of capital inflows was a realistic danger, but the extent of currency mismatch in the balance sheets of the private sector was less than could be observed in the crisis episodes. This way the adjustment measures increased the authenticity of economic policy and the ability of the economy to attract capital, and therefore the situation was stabilised within a short time.

In the case of these countries, adjustment was also due to the decline in internal demand, but with a smaller growth sacrifice than in the so-called crisis episodes. Among the three countries, exchange rate depreciation led to persistently high inflation only in Hungary. Surprise inflation and its slow reduction was, however, part of the adjustment package, which helped decrease the government deficit and internal demand.

During intermediate adjustments, a long-term decrease of current account deficit was generally not achieved, but use of resources and the structure of external debt improved, which was partly caused by the confidence-stimulating effect of structural measures (e.g. privatisation, reform of the banking system, investment incentives) and adjustments.

Countries presently running high current account deficits

Two developed countries, Australia and New Zealand, have had current account deficits of around 4% of GDP for more than 25 years. In these two countries, the current account is shaped by private sector behaviour (primarily by the persistently low household savings rate), while in both countries there is a balanced budgetary policy. As a result of favourable ratings by global capital markets, economic participants do not have external financing constraints. The ability to become indebted in their own currency, the ability of the financial intermediary system to properly allocate currency risk in the case of foreign currency-

[76] Czech Republic 1998, Hungary 1995, Slovakia 1999.

denominated liabilities and the dynamic economic growth experienced in the 1990s all contributed to the fact that the current account path showing relatively high deficits and the accumulated external debts turned out to be sustainable.

Some less developed EU Member States[77] were also able to sustain a high current account deficit - at least until the end of the period under survey. The institutions coordinating economic policy established with EU membership assure investors that the economy will follow a trajectory sustainable over the medium run, even in the case of a short-term increase in imbalances. The Stability and Growth Pact and the Excessive Deficit Procedure can be regarded as such guarantees, as well as the fact that these countries have committed themselves to introduce the euro, a precondition of which is to eliminate economic imbalances. In addition, the expected introduction of the euro will significantly decrease the sensitivity arising from currency risks accumulated in the balance sheets of the economic participants.

If the convergence paths leading to the introduction of the euro are credible and well-founded, the new Member States will be able to use the advantages of the decreasing external financing constraints coming with euro area membership, even before the introduction of the common currency. The credibility of the convergence-path of an EU Member State not belonging to the euro area is of key importance from the point of view of a sustainable current account position in the medium run as well.

An important factor in the growing current account deficit of the EU Member States under review is the trend-like decrease in the private sector savings/investment balance as a result of worsening household savings positions. In these converging countries, the worsening household savings position is a natural consequence of the increased depth of financial intermediation and the relaxation of liquidity constraints. Worsening household savings position may, however, exceed the level justified by the organic development of financial intermediary activities - as a result of various credit subsidy schemes or over-optimistic income expectations - which may contribute to the real economy overheating (e.g. Portugal) and may potentially lead to the creation of an asset price bubble. A quick convergence of interest rates heated by expectations may be extremely problematic if fiscal consolidation leading to the introduction of the euro is only implemented in accounting terms, without a considerable and sustained decrease in the real financing needs of the government budget.

Lessons related to the Hungarian current account imbalance

In Hungary, the current account deficit to GDP ratio has continuously exceeded 7% in the past 5 years. The persistently high external financing need of the government is primarily responsible for the current account deficit, but the change in household savings behaviour and the decreasing propensity to save are also important contributing factors. So far, the high current account deficit has been financed, although investors expect a higher risk premium on forint investments than in the rest of the countries in the region: the 3-month forward spread five years ahead vis-à-vis the euro exceed the Czech and Slovak spreads by 200 basis points and the Polish spread by 100 basis points.

EU membership and the commitment to introduce the euro function as a certain guarantee for the

[77] Czech Republic from 2000, Estonia from 1996, Greece from 2000, Hungary from 1998, Portugal from 1997.

investors financing the current account deficit, assuring them that the economic policy will be adjusted and balance sheet vulnerability factors will be eliminated in the future. In the period until the introduction of the euro a potential current account adjustment based on the sudden stop or reversal of capital inflows financing the current account deficit can not be completely ruled out. The probability of a crisis-like adjustment is decreased by the high share of the export sector in GDP, which provides a substantial organic hedge against currency risk. The structure of the banking system is healthy and its regulation and supervision meets the international and EU requirements. Based on this, the vulnerability of corporate balance sheets can be considered low relative to the experiences in the above-described crisis adjustment episodes.

However, the growing share of foreign currency denominated liabilities among small and medium-sized enterprises and households who are not organically hedged is a source of concern. FX indebtedness is closely tied to the fact that due to the problems of internal imbalances there is a large spread between long-term yields thus domestic market participants do not wish to (and cannot) take up loans in their own currency. Therefore, if the present imbalances persist, this will cause increasing vulnerability over the long run. This is reinforced by the fact that apart from the private sector, the FX indebtedness of the government budget is also growing. It is important to note here that the increase of euro-denominated external liabilities does not necessarily cause a problem in the case of a credible convergence path leading to euro area accession, but may become a significant risk factor in the case of growing uncertainties surrounding the timing of the introduction of the euro.

Although we can expect some growth in household savings with the slowing down of the economy and decreasing consumer demand, a substantial decrease in the risk exposure stemming from the current account deficit can only be reached by a persistent restriction of the financing needs of the government sector. Not only would a fiscal adjustment decrease the current account deficit, but it would also improve investors' risk

Table 3-4

Certain indices of countries with a persistent current account deficit, in the given periods

Country	Period	Current account balance	Public sector deficit	Economic increase	Domestic lending to the private sector (GDP%)	
		average	average	average	change	period-end
Greece	2000-2003	-7.1	-4.0	4.2	29	67.1
Portugal	1997-2003	-7.9	-3.2	1.2	63.1	147.9
Czech Republic	2000-2003	-5.9	-7.3	2.8	-20.6	33.4
Estonia	1996-2003	-8.6	0.2	5.8	2.7	29.2
Hungary	1998-2003	-7.7	-6.1	4.1	11.1	35.3
Australia	1990-2003	-4.1	-0.2	3.2	25.5	89.8
New-Zealand	1990-2003	-4.1	1.4	2.8	42.1	118.1

Source: World Bank WDI, Eurostat, MNB, own calculations.

perception and the government's ability to finance the deficit. On the one hand, it would increase the credibility of the commitment to introduce the euro, and on the other hand, the lower forint yield arising from the credible convergence path would encourage the private sector not to undertake unhedged currency risk, and this way it could slow down the build up of balance sheet vulnerabilities.

3. 4. 2. Csaba Csávás - Áron Gereben: Traditional and Exotic Options in the Hungarian Foreign Exchange Market

(to be published)

This study examines one of the important segments of the domestic interbank FX market, the market of forint - FX options. The objective of the study is to introduce this quickly developing segment of the domestic FX market, which is very important from the point of view of market participants, including the central bank, in order to monitor the exchange rate of the domestic currency. On the one hand, from the option prices the FX rate expectations of market participants can be found out, and on the other hand, option market processes often facilitate understanding of forint spot market events, since the FX market transactions connected with options may have a stabilising or destabilising effect on the exchange rate.

Option markets are used for speculative purposes or for hedging. Options make it possible to open speculative positions with unlimited profit potential, but at the same time the possibility of loss is restricted. In addition, with the help of options, production or financial corporations may eliminate their exposure to currency risk arising from their activities. In this case, the advantage of options is again to reduce risks.

The almost exclusive venue for FX options is the interbank OTC market. In contrast to Stock Exchange option markets, in interbank trading the parameters of options are tailored to client requirements. While generally at the Stock Exchange only options with fixed maturities (one-month or three-month) can be traded with a pre-set strike price, in the interbank markets the maturity date, the strike price, the quantity, etc. can all be determined freely. Another characteristic of the OTC FX option market in contrast to the Stock Exchange option market is the fact that during trading the traders base their calculations on implied volatility instead of the option fee. Implied volatility may be calculated from the option prices observed in the market: it is the volatility when the option price derived from the Black-Scholes formula used according to market conventions equals the option price observed in the market. Implied volatility is an important source of information from the point of view of mapping the expectations of future price fluctuations, because it reflects the opinion of market participants on the insecurity of the price. When interpreting the option prices quoted by market participants potential distorting factors should be considered (for instance, the distorting effects of the Black-Scholes pricing formula) which may divert implied volatilities from the volatility expected by the market.

In Hungary the liberalisation of the FX market in 2001 made it possible for foreign investors to effect forint derivative transactions, including options. Domestic FX options market experienced an upswing from the middle of 2002, when turnover started to increase and foreign participants began to undertake more substantial positions. Turnover was extremely volatile in the past three years, the option market showing a revival especially in the periods of substantial price fluctuations. In 2004, average daily turnover in forint-FX options was approximately HUF 5 billion. Although compared to the spot FX market, domes-

tic turnover of the forint options market is insignificant, the size of the London options market is several times greater than the Hungarian one.

The increasing activity of the FX options market and the growth in turnover may have various effects on the spot FX market and indirectly on the forint exchange rate. These potential effects are not only interesting in their own right, but also from the point of view of stability.

One of the advantages of the growing popularity of option market deals is the fact that they may contribute to the increasing liquidity of the underlying instruments, which in this case means the liquidity of the spot FX market. Hedging currency risks through options is more favourable than through other derivatives, since the client hedging himself via options will only be hedged against unfavourable price movements, while continuing to make a profit on price movements in the favourable direction. Owing to this, investors with less appetite for risk-taking may also enter the spot market and the increase in the number of market participants may have a favourable effect on spot market liquidity.

The most important connection between option and spot market activities is hedging options by spot market deals. Under certain conditions hedging may increase price volatility, otherwise it may decrease it. Investment banks acting as writers (sellers) in the options market will have to hedge their open positions created during trading, since they can only undertake limited risks. In the case of traditional options currency risk can easily be hedged in the spot FX market. The size of the spot market position to be opened in order to counterbalance the risk of a given option is determined by the delta of the option, that is, the sensitivity of the value of the option to changes in the price of its underlying instrument. The hedging activities of the writers of options involves the opening of spot FX market positions. If, for instance, market participants conclude options for the strengthening of the forint, the writers of the options are forced to open forint spot market positions, that is, they purchase forints. Owing to the hedging strategies of the writers, the positions in the options market influence the spot market. If spot market liquidity is low compared to the options market, the spot FX market demand created by hedging the options may influence the spot price. Although the turnover in the options market is only a fraction of spot market turnover, there are periods when there is a jump in the turnover of options and the demand created by hedging may influence the spot market price as well.

Options may influence the spot market not only when the positions are opened, but continuously until their maturity. This can be explained by the fact that the delta of an option continuously changes over the life of the option, since the delta is influenced by the same factors as the option fee. The most important of these factors is price movement, as a result of which the hedge of the writers has to be continuously adjusted. This is why this kind of hedging strategy is called dynamic delta hedging.

The effect of dynamic hedging on the price is fundamentally determined by the net option positions of the writers. If the writers sell more than buy, hedging requires that they should buy the given currency when the price strengthens and sell it in the case of weakening. If quantities are large relative to spot market liquidity, this mechanism has a destabilising effect on the price, because it intensifies both the strengthening and the weakening process, thereby increasing price volatility. In the opposite case, if writers buy more options, there are contrary trends: the strengthening of the price causes a weakening, while the weakening of the price causes a strengthening effect. This negative

feedback may stabilise the price, decreasing volatility. Should the price be close to the strike price of the option, this level may attract the price level like a 'magnet' when approaching maturity, supposing that significant option positions are connected with this price level.

By examining the domestic options market we may estimate whether market participants rather buy or sell options. Although domestic banks usually write more options than buy, the cumulative portfolio of bought and sold options moves closely together, which shows that market participants both buy and write options at the same time. This is due to the fact that domestic banks only intermediate options. Data show that the options market does not generally have a significant effect on the forint market. In the London options market the exposure of the writers is substantially larger as a result of the higher turnover, therefore their hedging activity has a much stronger influence on the stability of their domestic FX market.

When talking about the effect of dynamic delta hedging, it should be taken into consideration that the net value of spot market price movements generated by the hedge is zero during the term of the option. Owing to its neutral effect on FX market demand, hedging activity does not influence price movements in the long run. It may, however, influence the fact whether the price gets from one point to another among higher or lower fluctuations.

Recent market analyses on forint price movements frequently refer to the so-called exotic options. The most frequent type of exotic options in the London forint option market is the reverse knock-out option: according to informal information a large quantity of such options was concluded in the past, therefore the magnitude of current option positions may also be significant. (See Box I-2 on the characteristics and market effects of knock-out options.) For the buyers and writers of such options it is worth reacting to even small price movements with opening large hedging or speculative positions in order to manage their risks, which may - from time to time - result in stronger price fluctuations or less computable price movements. This destabilising effect may most probably appear at around the redemption price when approaching maturity. At the same time, hedging by knock-out options - similarly to traditional options - can only have a temporary effect on price movements, and we believe that the long term dynamics of the price is not influenced by exotic options either.

3. 4. 3. Ágnes Lublóy: Systemic risks of the Hungarian interbank market

(MNB Working Paper, 2004/10)

The aim of the study published in MNB Working Paper No. 2004/10 is to examine the contagion effect in the Hungarian interbank market. The extent of contagion risk is subject to numerous institutional factors, market structure being the most determining factor at the level of the interbank market. On the basis of the portfolio data of 50 selected days, the Hungarian interbank market is moderately concentrated according to the Herfindahl-Hirschman-index. Considering the concentration ratio, the market share of the three largest participants of the interbank market is about 45%, the market share of the five largest market participants amounts to approximately 60%, while the ten largest market participants cover 80% of the market. The Hungarian banking market is not complete, which means that there are numerous banks that are not connected with each other through the interbank market. The structure of the interbank market is most similar to a market with several financial centres, where 15 banks play a dominant role.

The basic question of the research was to find out whether in the case of a potential financial crisis the failure of a bank to meet its interbank obligations due to liquidity problem causes the whole financial system to follow. Therefore, our study tried to trace the effect of the one-off, idiosyncratic failure of each bank through simulation, based on the data of unhedged interbank borrowings and deposits. The model may be regarded as a stress test and exclusively concentrates on direct lending, that is, on how the failure to pay back the interbank deposit of a bank affects the capital of the depositor bank. If during the simulation no bank failed to meet its interbank obligations in consequence of the initial bankruptcy, that is, if there was no contagion, the process ended. If there was contagion, that is, if there was another insolvent bank following the initial bankruptcy (first round contagion), this bank failed to meet or only partially met its interbank obligations. This way new banks became insolvent again, who did not manage to recover their receivables (second-round, third-round, etc. contagion). The iteration started again and again until there was no new insolvent bank in the next iteration. A new bankruptcy took place as an effect of the initial bankruptcy if the lending losses depending on the loss rate exceeded the size of the core (Tier 1) capital of the bank.

In the first scenario the contagious bank failure happened if - assuming a 100% loss rate - a bank completely lost its core capital. Under the above-mentioned assumptions, out of the 1,950 cases under survey there were 11 bank failures, which amounted to 0.5% of the cases. No second-round contagion took place in any of the cases. Each first-round contagion was due to the fact that the idiosyncratic bankruptcy of a credit institution spread to an affiliate belonging to the banking group. During the 50 days under review the banking system lost 0.53% of its core capital on average. In the worst scenario the loss amounted to 3.53% of the total core capital of the banking system, and within this, nine banks suffered a loss amounting to less than 10% of their core capital, two banks lost 10%-20% and two lost 20%-50% of their core capital. The share of total assets of these four banks is minimal within the banking system.

According to Paragraphs 151 (3) a) and 157 (1) of the Act CXII of 1996 on credit institutions and financial enterprises a special scenario was used to analyse the systemic risk arising from a loss which would decrease a bank's solvency ratio below 4%. According to this scenario a bank would go bankrupt if its regulatory capital decreased to one-half the minimum capital required to cover the risks. Assuming again a 100% loss rate, out of the 1,950 scenarios 51 contagions happened in the first round, amounting to about 2.62% of the cases. In the second round there was no new contagion in any of the cases. Out of the 51 cases, 43 first-round contagions were caused by the fact that the idiosyncratic bankruptcy of a parent bank spread to an affiliate within the group. In five cases the initial bankruptcy of four separate large banks spread to two medium-sized banks. In one case the idiosyncratic bankruptcy of a small bank spread to a medium-sized bank. On average the banking system lost 0.8% of the available capital, the maximum loss being 10.9%. The capital loss of the banking system - in the worst case of the contagious days and in the worst case in absolute sense - is shown in Table 3-5. The threshold level of repayment rate was 68.7% in the case of the parent bank causing the bankruptcy of its affiliate, while in the case of the other banks it never exceeded 11.5%.

In reality, the failure of a bank is not a sudden unexpected event, but the result of a process.

Table 3-5

Presumed capital loss of the banking sector

Loss as a percentage of capital	Worst case among those with contagion		Worst case	
	Number of banks	Market share of banks affected	Number of banks	Market share of banks affected
Less than 10%	6	33.83%	10	66.74%
Between 10 and 20%	3	27.54%	3	5.71%
Between 20 and 50%	4	9.12%	4	6.02%
Above 50%	0	0.00%	1	5.61%
Default	1	0.23%	0	0%

Source: MNB.

Therefore, other banks have a chance to partially cut down their interbank exposure to the given bank on the verge of bankruptcy. In the model, the aforementioned dynamics of market expectations meant that banks did not provide new loans to the bank on the verge of bankruptcy, that is, the given bank did not have any loans concluded within 7 calendar days. The starting point of the survey was exclusively the 51 contagious scenarios. After building the expectations into the model, only 9 contagions took place instead of the earlier 51, which were again mainly due to short-term - 14-day - exposures. Earlier, the failure of the banks that became victims of the domino effect was due to the high level of their short-term exposure towards the banks going bankrupt in the initial phase.

Finally, it was analysed what would happen if not only one but more banks having the same exposure profile went bankrupt. The scenarios examining the joint bankruptcy were based on the exposure of the banks to currency risk, computed on the basis of the real-estate development project loans and agricultural lending of the banks, as well as on the size of their exposure towards financial enterprises, using the results of the stress tests. Contagion was quite limited in each case, which meant that during the simulation the individual bankruptcy of only one bank happened a few times. Bankrupt banks did not cause new bankruptcies in the second round.

When comparing domestic results with foreign ones, we can establish that in Hungary the effect of contagion is much less - whether considering the number of banks or the portfolio of assets - and the capital loss of the banking system is much lower. In Hungary, the domino effect is limited in both absolute and relative sense, even in extreme situations. This may be explained by the low level of interbank exposure of domestic banks, compared to both the balance sheet total and the core capital of the banking system. As a result of the above - that is, low exposure relative to core capital and a relatively less concentrated interbank market - the limited nature of the domino effect is not surprising. Not only is the probability of contagion low, but its impact are as well. Contagion through the Hungarian interbank system can be described as a 'low probability-low impact' event.

3. 4. 4. Marianna Valentinyiné Endrész: Structural breaks and financial risk management

(MNB Working Paper, 2004/11)

MNB Working Paper No. 2004/11 entitled Structural breaks and VaR forecasts examines the question as to whether the performance of volatility models used to measure and forecast risk can be improved by taking into account the presence of structural breaks.

During the past decade Value at Risk (hereinafter: VaR) became a wide-spread risk measure in the financial sector. Since its introduction VaR has been criticised both on theoretical and empirical grounds. Despite this, banks use it for numerous financial decisions - in setting capital and trading limits, making investment decisions and in performance evaluation. The spread of this tool was fostered by the regulation that allows banks to rely on their VaR-type internal models to determine trading book capital requirement. Although in Hungary internal models are rarely used for determining the capital, basically each bank uses internal models and the VaR calculated from such for internal risk management purposes.

On the other hand, when analysing Hungarian data, we often face the problem of assumed structural breaks in the time series. Their presence may substantially distort the result of the analysis, for instance the forecasting performance of the models or our assessment on the efficiency of certain markets. Structural breaks are defined as changes in the parameters of the data generating process (econometric model) of a given variable (e.g. the price of a financial asset: interest rate, exchange rates, stock exchange indices). We are typically interested in persistent changes in the unconditional mean and volatility of a variable. A structural break occurs, if, for instance, the average daily return observed in the given market decreases due to the fact that the market has become more efficient. Another example is the increase in the level of volatility due to a change in the foreign exchange regime (widening of the intervention band). However, jumps caused by short-term shocks or the GARCH effect (alternation of periods with lower and higher volatilities), frequently observed in financial time series, are not structural breaks.

The past decade has seen significant development in the econometrics of structural break tests. Armed with these new techniques, empirical researchers reached convincing, but often contrary results to the former ones - for instance, with regard to the efficiency of emerging markets, the existence of cointegrating relationship and potential contagion channels as well as the question of purchasing power parity.

Our study examines two questions by combining the above concepts. First, using daily BUX returns over the period 1995-2002, it investigates whether the tests specially designed for this purpose find breaks, significant shifts in the unconditional mean and volatility of the return Following this, the potential reasons of the breaks are also discussed. Second, it explores whether building these breaks into the models used for VaR calculations improves their VAR forecasting performance. Why do we expect structural breaks to have an effect on VaR calculations? It can be easily shown by simulation and also found by empirical studies that if structural breaks are ignored, the presence and persistence (which can be interpreted as the measure of the informational efficiency of the market) of the GARCH effect will be overestimated. Apart from this, breaks usually fatten the tail of the distribution (extreme price changes are more frequent than it follows from the often assumed normal distribution), which has a substantial influence on VaR estimates.

The effect of structural breaks on VaR calculations is important to the central bank for guarding against systemic risks for two reasons. Firstly, most Hungarian banks use VaR models for internal risk management and the quality of risk management is an important determinant of systemic risk. Secondly, when analysing financial stability, we regularly run stress tests, part of which use VaR based indices.

The tests found several breaks in the time series of daily BUX return. Substantial drops in the average return were observed during 1997-1998. This was a result of two factors. First, there was a strong increasing trend in the value of the index in 1996-97, the termination of which decreased the average return. Second, this effect was strengthened by the increase in market efficiency. The increases in the average level of volatility were likely caused by increased turnover, but a jump in the number and intensity of shocks (bad luck) must have played a role in it as well. The Asian and Russian crises had the most significant effect in terms of size, but they only had a temporary, short-run impact, therefore they cannot be regarded as structural breaks.

When evaluating the VaR forecasting performance we compared the following models: historic 250- and 500-day moving average, the EWMA - known from RiskMetrics - GARCH models and finally, a GARCH model taking structural breaks into account. Incorporating structural breaks resulted in models of better quality and showed a more favourable picture on the informational efficiency of the market. VaR forecasting performance was evaluated from several aspects: ideally actual loss exceeds the VaR forecast at a frequency corresponding to the chosen confidence level (in 1, 5, etc. per cent of the cases) and these 'excessive losses' or hits are not clustered in time. In addition, we also compared these models according to the average excess amount of actual losses over VAR. Based on the in-sample forecasting performance it is worthwhile to include explicitly structural breaks in our models. In the out-of-sample exercise we found less clear evidence. Here the results are sensitive to the confidence level and the evaluation criteria used.

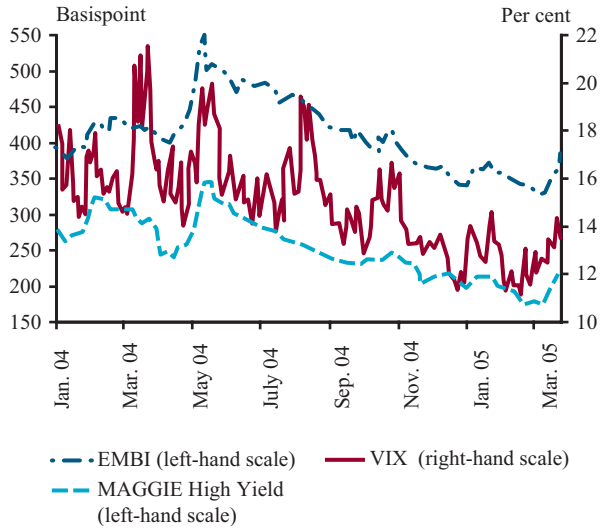
Based on the comparison of forecasting performance, there are strong arguments for taking structural breaks into account for the purposes of VaR analysis. At the same time, the mixed results shed lights on the difficulties we face when choosing among the models. This message is particularly relevant for the regulatory authorities, since it draws attention to the difficulties of backtesting VAR models.

Appendix

Macroeconomic and financial market environment

Chart 1

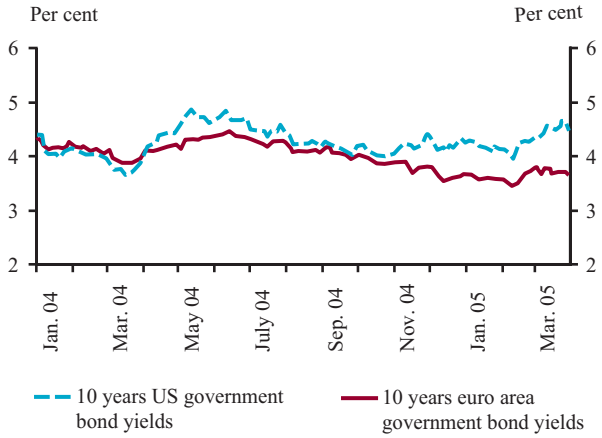
Global risk indices



Source: J.P. Morgan, Standard and Poor's and CBOE.

Chart 2

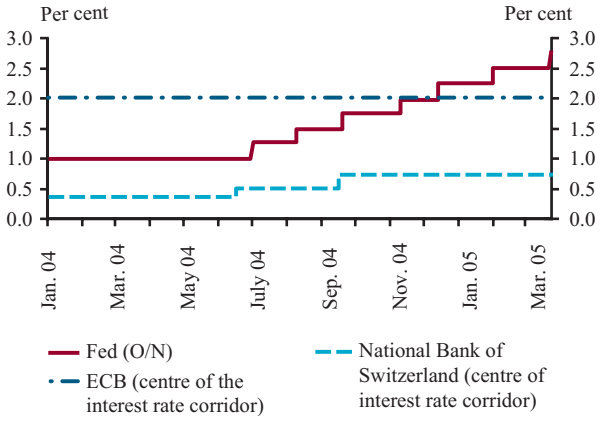
Long term bond yield in the USA and the euro area



Source: Reuters.

Chart 3

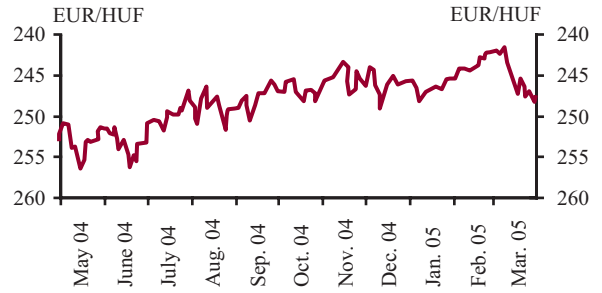
Key policy rates of the ECB, Fed and the Swiss central bank



Source: Reuters.

Chart 4

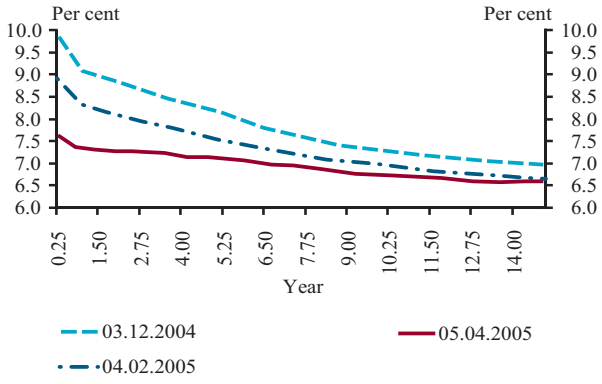
Forint exchange rate against the euro



Source: MNB.

Chart 5

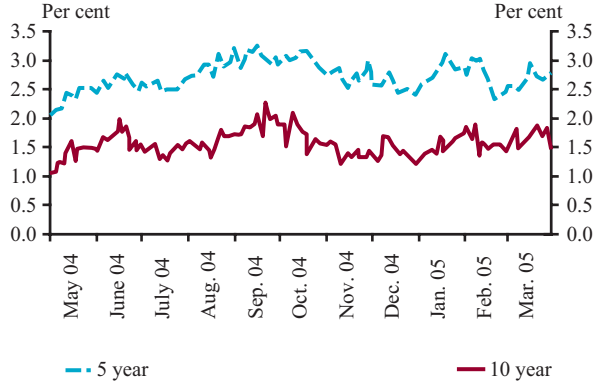
Yield curve at various points in time



Source: MNB.

Chart 6

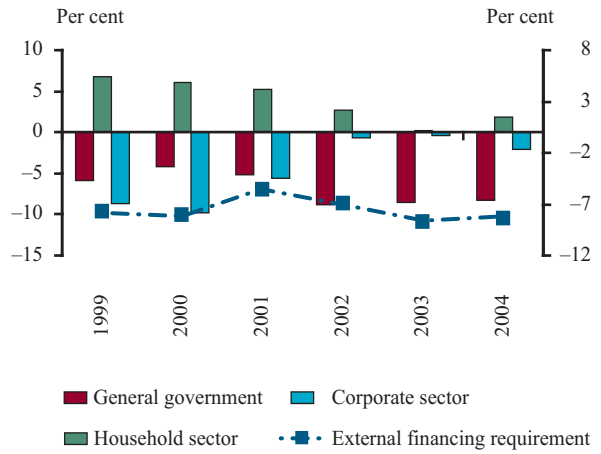
Development of 3-month forward derivative margins



Source: MNB.

Chart 7

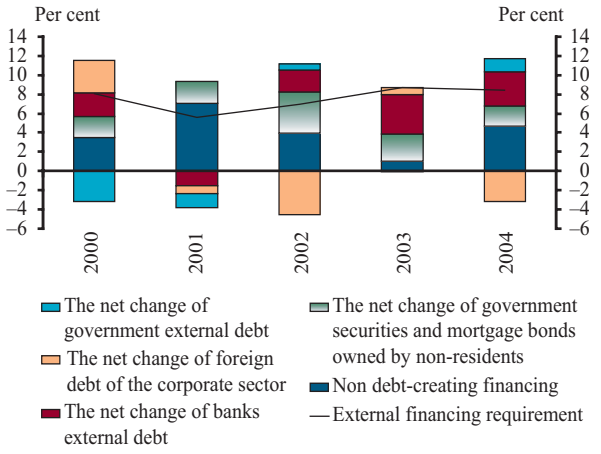
GDP-related financing positions of economic sectors



Source: MNB.

Chart 8

Current account balance financing structure

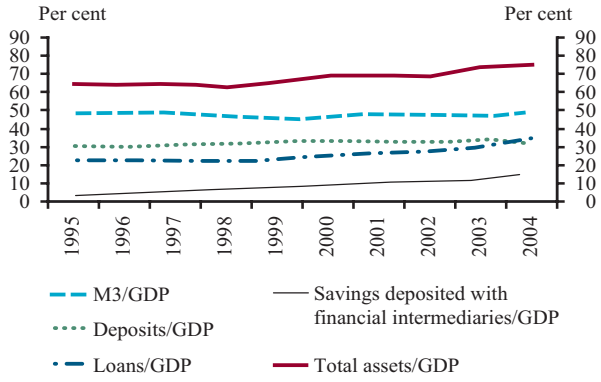


Source: MNB.

Financial stability indicators of banks

Chart 9

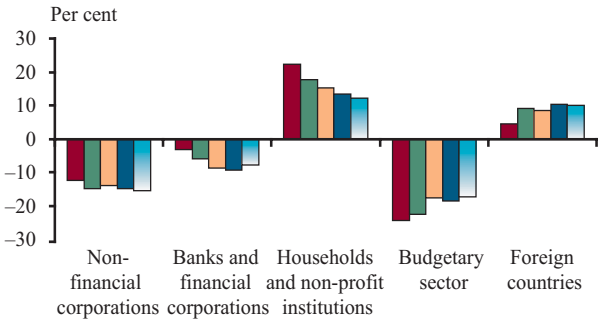
Indicators of the depth of financial intermediary activities



Source: MNB.

Chart 10

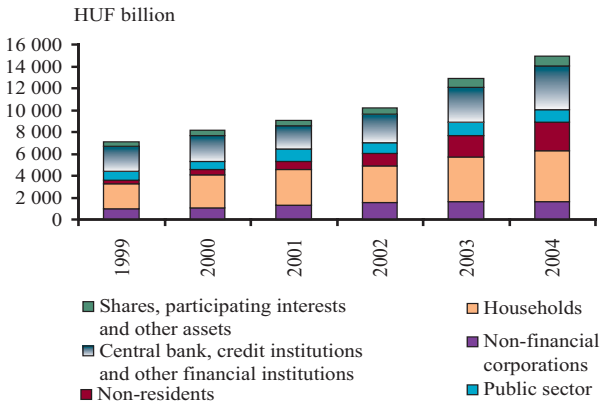
Net financial position of economic sectors to banking system



Source: MNB.

Chart 11

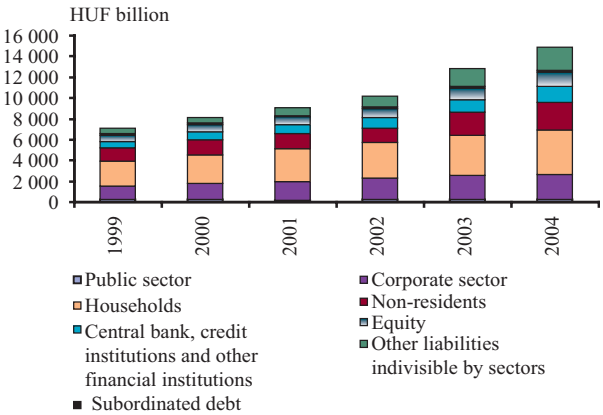
Assets of banks



Source: MNB.

Chart 12

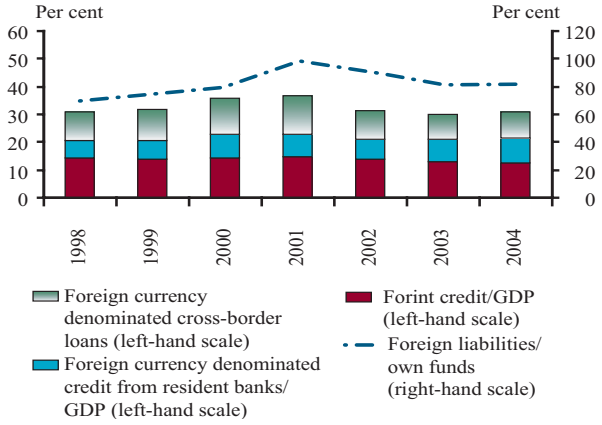
Liabilities of banks



Source: MNB.

Chart 13

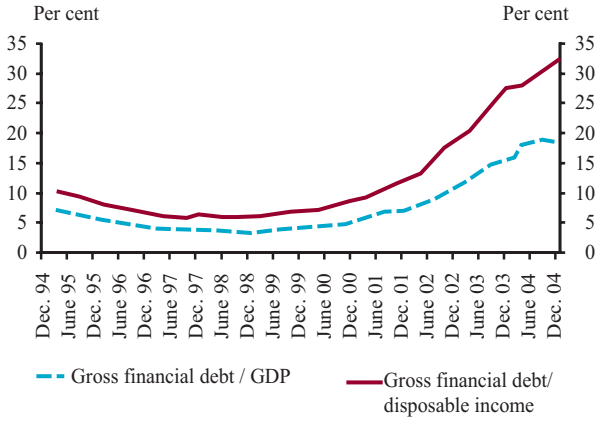
Indebtedness of non-financial enterprises



Source: MNB.

Chart 14

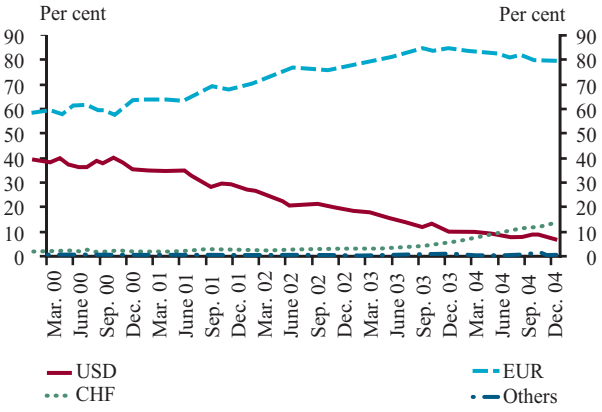
Household indebtedness



Source: MNB.

Chart 15

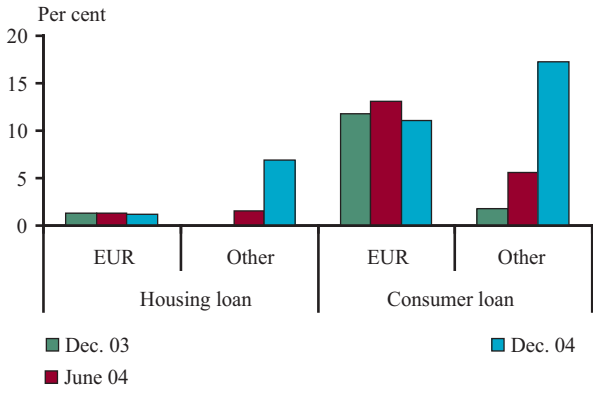
Domestic FX debts of non-financial enterprises by denomination



Source: MNB.

Chart 16

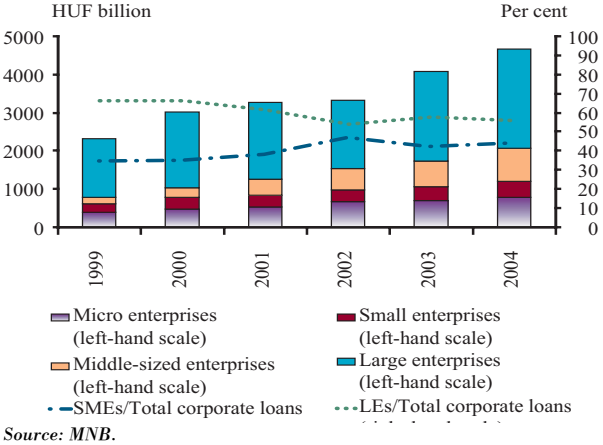
Household FX lending of banks by denomination



Source: MNB.

Chart 17

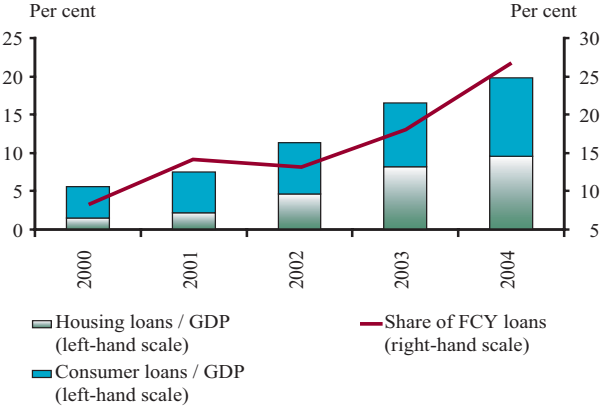
Debts of non-financial enterprises categorised by the size of the enterprise



Source: MNB.

Chart 18

Increase in household debts by type

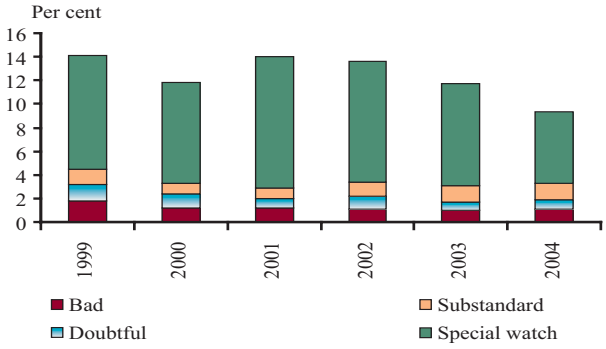


Source: CSO, MNB.

Chart 19

Breakdown of classified debts

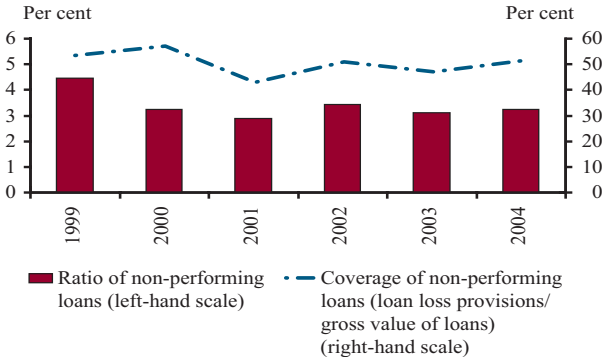
(in percentage of total portfolio)



Source: MNB.

Chart 20

Coverage of non-performing bank receivables

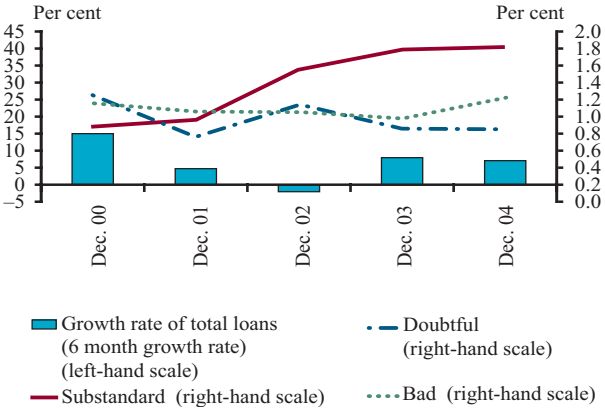


Source: MNB.

Chart 21

Quality of debt portfolio of non-financial enterprises

(in percentage of total loans)

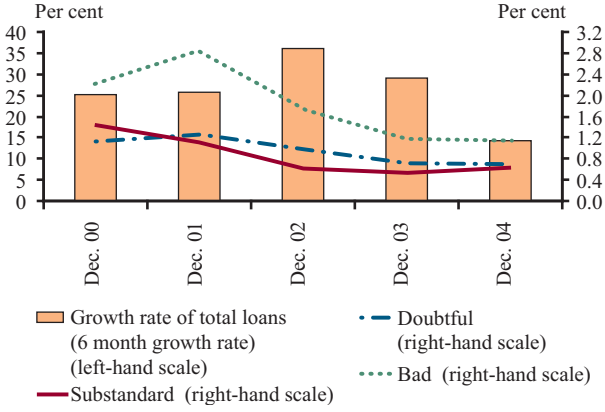


Source: MNB.

Chart 22

Quality of household debt portfolio

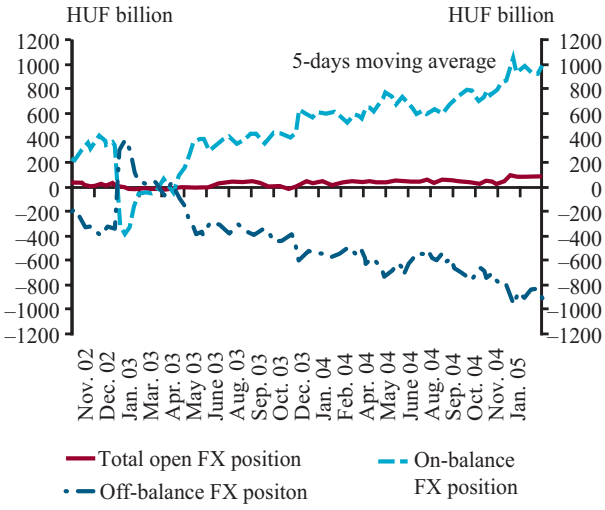
(in percentage of total loans)



Source: MNB.

Chart 23

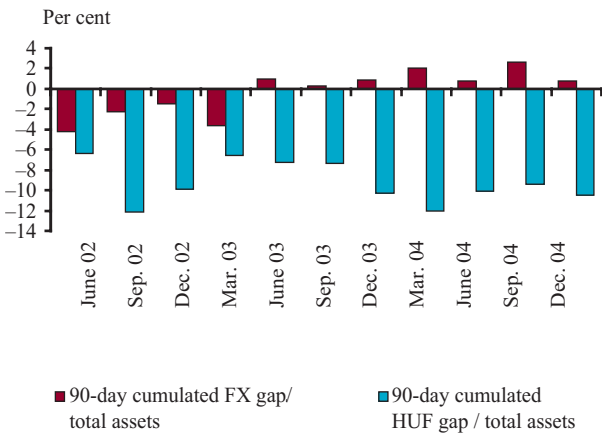
FX positions of banks



Source: MNB.

Chart 24

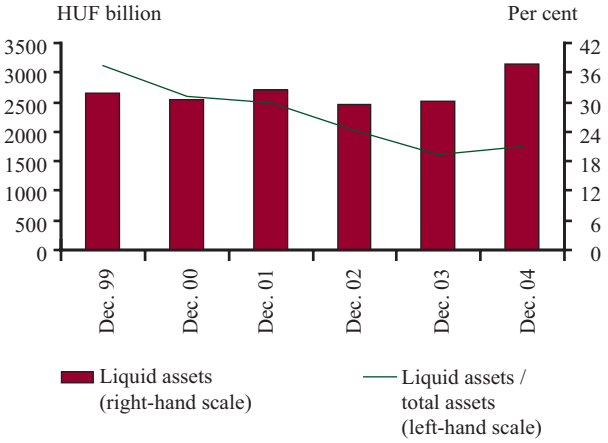
Interest rate exposure of banks



Source: MNB.

Chart 25

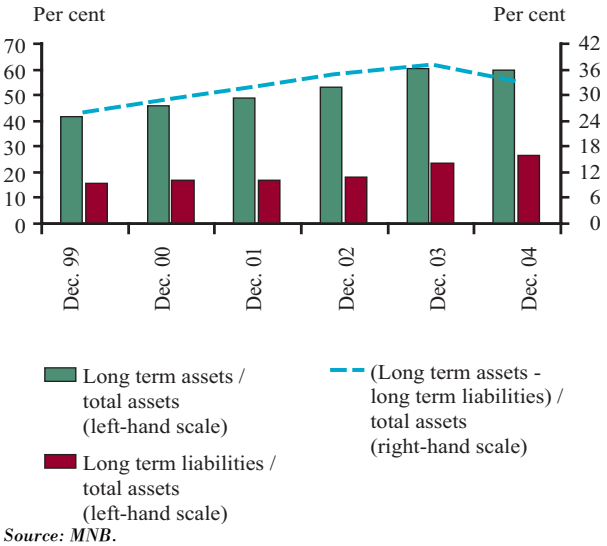
Liquid assets of banks



Source: MNB.

Chart 26

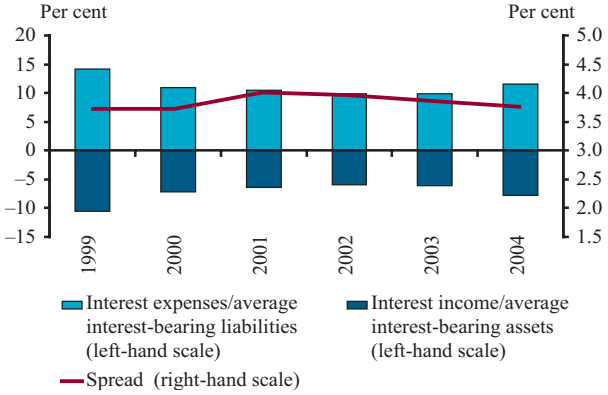
Long-term assets and liabilities of banks



Source: MNB.

Chart 27

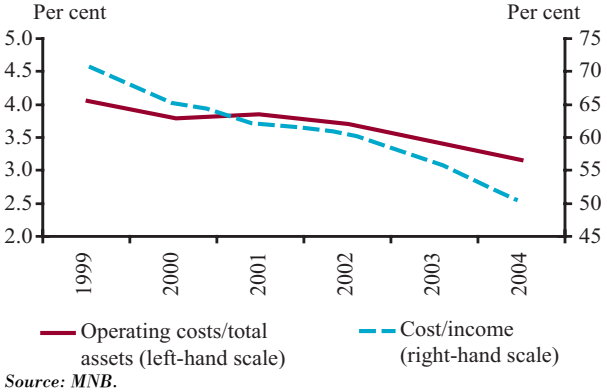
Composition of spread



Source: MNB.

Chart 28

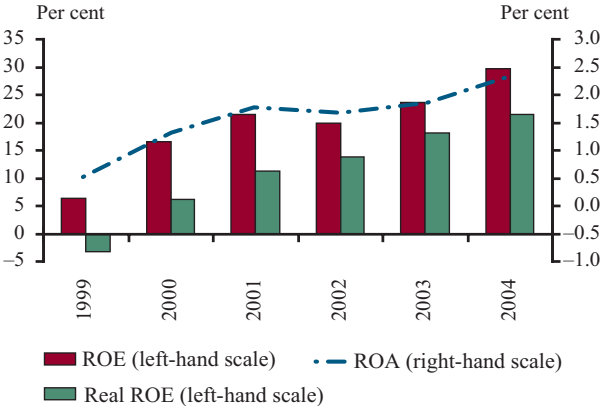
Cost-efficiency ratios of banks



Source: MNB.

Chart 29

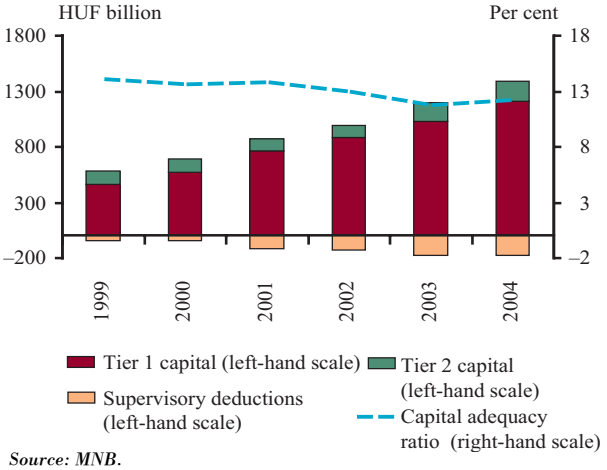
Return on Equity (ROE) and Return on Assets (ROA) of banks



Source: MNB.

Chart 30

Regulatory capital and capital adequacy of banks



Source: MNB.

Notes to the Appendix

Chart 1: EMBI Global Composite - The interest spread index of dollar-denominated bonds of sovereign and quasi sovereign issuers, computed by J.P. Morgan-Chase Maggie High Yield - The interest spread index of euro-denominated corporate and government bonds and debentures, computed by J.P. Morgan-Chase VIX Implied Volatility computed from the S&P500 equity index options

Chart 9: M3: In accordance with the ECB definition: M2 + Repo + Money market fund shares + Debt securities with a maximum maturity of two years Borrowings, deposits and savings at institutional investors: from/ to non-financial enterprises and households Savings at institutional investors: life insurance, investment fund, pension fund

Chart 10: In proportion to the Balance Sheet total

Chart 11: Sole proprietors are included in the corporate sector until May 2001 and in the household sector from June 2001 Until May 2001 household sector only contains the actual households.

Chart 12: Sole proprietors are included in the corporate sector until May 2001 and in the household sector from June 2001 Until May 2001 household sector only contains the actual households.

Chart 16: The 'others' category is mostly debts in Swiss francs.

Chart 17: The December 2004 data are estimates.

Chart 18: The breakdown of debts of financial enterprises by denomination is an MNB estimate.

Chart 19: Total classified debts as a percentage of total debts to be classified.

Chart 20: Total non-performing debt portfolio as a percentage of total debts to be classified.

Chart 23: Positive value: long FX position.

Chart 25: Liquid assets: cash and clearing accounts, government securities, central bank bond, short-term central bank or foreign interbank deposits.

Chart 26: Long-term liabilities: without equity and risk reserves.

Chart 27: Spread: Interest income/average interest-bearing assets - Interest expenses/ average interest-bearing liabilities. When analysing the profitability trends of the banking system, for the 2004 aggregate data we took into consideration the interim cumulative data of the two banks closed down during the year due to fusion.

Chart 28: The sum of net interest income, net income from commissions and fees, result of financial activities and dividend received. When analysing the profitability trends of the banking system, for the 2004 aggregate data we took into consideration the interim cumulative data of the two banks closed down during the year due to fusion.

Chart 29: Values calculated using the Profit Before Tax. When analysing the profitability trends of the banking system, for the 2004 aggregate data we took into consideration the interim cumulative data of the two banks closed down during the year due to fusion.

Chart 30: The 2004 estimate was calculated by rolling back 70% of the non-audited positive profit after tax, unless the information available at the time of writing the report on expected dividend payments indicated a lower proportion. Until May 2001, deductions due to investments into financial institutions, investment enterprises and insurance companies (or due to providing these institutions subordinated loans) decreased the basic capital.

Report on Financial Stability
April 2005

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